Facets affecting training transfer in supervisors and hourly employees in a manufacturing organization

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Factors Affecting Training Transfer in Supervisors and Hourly Employees in a Manufacturing Organization

A research thesis submitted in partial fulfillment of the requirements of the degree of Doctor of Philosophy in the Graduate College of Management, Southern Cross University, NSW, Australia

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Abstract

Employee training represents a significant investment for many business organizations, but training effectiveness requires training to be transferred into employee job performance. If an employee is able to transfer training into performance improvement, then the training can be considered successful. Training transfer may depend on personal, training, and work environment factors, and supervisors may differ from hourly employees in transfer motivation. However, no previously published studies have contrasted supervisors and hourly employees in personal, training, and work environment factors related to training transfer. This research study examined training transfer factors following a required safety training instituted as part of an organizational change due to an acquisition.

In this mixed methodology study, 70 hourly employees and 19 supervisors completed the Learning Transfer System Inventory Questionnaire (LTSI) of Holton (2004). The LTSI includes personal, training, and work environment factors. Differences between supervisors and hourly employees were assessed using MANCOVA to account for years of experience, with pairwise tests verified with the nonparametric Mann Whitney U at a threshold of p < .05. Further, six supervisors were interviewed.

Results demonstrated statistically significant differences between supervisors and hourly employees in perceptions of positive personal outcomes and performance-outcomes expectations, as well as in the work environment factors of supervisor support and supervisor sanctions. Interviews revealed that the organizational changes improved motivation to transfer training. This finding was supported by a 79% reduction in the OSHA reportable safety incidence rate.

This study highlights the importance of training transfer and motivation to transfer training, including important differences between supervisors and hourly employees as they grapple with organizational changes within a particular context of required safety training instituted by the acquiring company.
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Certification

I certify that the substance of this thesis has not been submitted for any other degree to date, nor is it currently being submitted for any other degree.

I also certify that, to the best of my knowledge, I have acknowledged all sources used and assistance received in preparing this thesis.

__________________________________________

Jason Edwards

Date August, 2013
Acknowledgment

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Chapter 1 – Motivation for the Research

1.0 Introduction

Understanding motivation to transfer training is important for the management community. The modern business environment is a rapidly changing, dynamic, and highly competitive global workplace for many business organizations (O'Meara, et al. 2000; Daft 2004). As businesses enter the realm of the global marketplace, the need to maintain a skilled and highly effective workforce becomes a critical component to sustaining and growing their market share (Noe 2005). However, the ability for a workforce to perform effectively requires a prescribed level of knowledge and expertise at most if not all levels of the organization. As situations within the global marketplace arise, problems develop that require quick resolution in order for the business to continue operating efficiently. The level of expertise of the workforce coupled with the leadership abilities of management can either propel a business forward or leave it in a precarious position in the market.

Employee training and development is one way for employees to gain both knowledge and expertise in the workplace (Ford 1997). Employee training is crucial for organizations in securing a competent and effective workforce. The American Society of Training and Development (ASTD, 2010) estimates in its 2009 State of the Industry Report that organizations within the United States spent 134.1 billion dollars on employee learning and development in 2008 which is slightly lower than the 134.39 billion spent in 2007. Nearly two thirds or 88.6 billion dollars were spent on internal training functions such as salaries and internal development costs. The remaining 45.6 billion dollars were directed toward external costs such as workshops, vendors and external training events.

Executive leadership continues to scrutinize the amount of resources spent on employee training as a means of measurement to determine the actual value provided by training. As Salas and Cannon-Bowers (2001, p. 489) note “…there is an increasing concern in organizations that the investment made in training must be justified in terms of improved organizational performance—increased productivity, profit, safety, reduced error, enhanced market share.” Organizations need to know that their
training investment is producing dividends in terms of increased organizational performance in key target areas. If training is provided to reduce quality product issues, then some form of quality performance indicator that contributes to the organization’s performance must also be established. The driving factor for employee training for many organizations is based on the concept that organizational performance is improved through employee performance. Thus, the question is asked “Did training have any impact on or improvement of performance?” If the answer to this question demonstrates that training did have an impact, then to what degree and was this worth the cost (Hutchins & Burke 2007; Bartel 2000).

For an organization to answer this question and ascertain the effectiveness of its training, an established means to evaluate training in terms of its training transfer is essential. Training Transfer, Learning Transfer or simply Transfer are terms used to denote the level of information an employee receives from some form of training event such as in a traditional classroom training session that is then utilized by the employee to improve job-related performance (Baldwin & Ford 1988). In other words, training transfer is the process an individual undergoes to use information gained through training to directly improve job performance. However, training transfer is not limited to the cognitive learning process itself but includes the additional internal and external elements that impact the training process and ultimately the level of transfer and performance that occurs (Bates & Khasawneh 2005). External factors of organizational climate, transfer climate, and work environment have been shown in research studies to have a significant impact on the quality of transfer (Bates & Khasawneh 2005; Hawley & Barnard 2005; Burke & Hutchins 2007). Burke and Hutchins (2007) categorize these internal and external elements into three primary factors: learning characteristics, intervention design and delivery, and work environment influences. While these issues are considered in evaluation of training, improvement of employee performance is the central catalyst for evaluating training effectiveness (Byham, et al. 1976; Burke & Baldwin 1999; Olsen 1998; Kirwan & Birchall 2006; Saks & Belcourt 2006; Subedi 2006). According to a study by Hawley and Barnard (2005), the majority of research on training transfer in the past examines these various factors and sub-factors that influence the employee as the trainee. The majority of these studies investigates how
these factors either individually or combined shape the transfer process. Of the factors examined by Hawley and Barnard, supervisor support and peer support are the two most influential factors affecting transfer. It is from this point that this study begins.

Training is universally considered to be important in management theory, but little is known regarding possible differences between supervisors and the hourly employees they supervise in safety training transfer from the perspectives of personal factors, training quality, and the work environment. Factors’ affecting training transfer is an understudied area of research (Baldwin & Ford 1988; Holton 1996, 2005; Salas & Cannon-Bowers 2001), and little is known regarding how training transfer may differ between supervisors and hourly employees. Previous research demonstrated that work environment factors such as the influence of managers and supervisors have a direct impact on transfer climate and employee transfer (Tannenbaum 1997; Yamnill & McLean 2001; Gaudine & Saks 2004; Bates & Khasawneh 2005; Hawley & Barnard 2005; Burke & Hutchins 2007), but no studies to date have explored how supervisors react to training and training transfer in comparison to their employees. A study was needed to determine if supervisors react and transfer training differently than hourly employees they supervise.

Using an acquisition and merger as the setting for this study allows the researcher to examine both employee groups as they undergo the same training required by the acquiring company. In prior training transfer research, work conditions experienced by both employee groups typically are not the same. Supervisors have a unique perspective and significant role in an established stable organization. The supervisor is in the role of continuing the existing status quo of organizational performance by creating a positive transfer climate through providing feedback, reinforcement, encouragement, and providing means for employee application in post-training situations (Tannenbaum 1997; Saks & Belcourt 2006). The training transfer process is influenced by the employee’s manager who either seeks to encourage the employee to transfer or in some situations, to prevent transfer. However in the field setting of this research study, the conditions themselves are changed with both employee groups undergoing an organizational change. Both groups are facing the same unique organizational work conditions and pressures, and while the importance of the supervisor is not diminished, having both groups undergo the same training in a
newly-established work environment allows the researcher to investigate if these two
groups view the same training and training transfer process differently. Furthermore,
this study will continue to strengthen the ongoing body of research in understanding
training transfer. And finally, additional insight will be gained for organizational
leaders by understanding the dynamics of training transfer in a field setting on both
supervisory and hourly-employee levels. This new knowledge will lead to the
development of training strategies that seek to maximize training and transfer
effectiveness for unique employee groups.

1.1 Purpose of the Study

The primary purpose of this study was to test for possible differences in training
transfer perception between two distinct employee groups; supervisors and hourly
employees. The focus of this current research study is to investigate training transfer
in a field setting involving both managerial/supervisory and hourly employee groups
to determine if each employee group views transfer differently. This study was
designed to further understand the training transfer process through investigating
transfer in a specific area of training using a survey process as well as examining the
lived experiences of managers as they too seek to learn and transfer in a new
organizational culture within the recently-acquired manufacturing organization while
meeting the new company’s expectations. Research literature identifies the factors that
both directly and indirectly impact the application of training from classroom to
employee performance; however, limited research has examined how different
employee groups react to training and transfer. Training transfer factors can be
reliably measured using the Learning Transfer System Inventory Questionnaire
(LTSI) (Holton, 2004), including personal, training, and work environment factors
that may impact training transfer. Therefore, the present study utilized the LTSI to
assess differences between supervisors and hourly employees in personal, training,
and work environment factors of training transfer. Further, this study included
interviews with six supervisors regarding changes in motivation to transfer following
company acquisition.
1.2 Context of the Study

For the purpose of this study, the context of the training process focuses on learning activities and supervisory actions utilized by managers and hourly employees during the integration of a strong safety-based organizational culture into a newly-acquired organization that had previously placed less emphasis on strong safety procedures. The term Company A is used in this study to denote the company that made the acquisition and began the process of integrating its culture into the other company. Company A is a major production operation with subsidiaries and affiliates throughout the United States, Canada, and Europe with approximately 15,000 employees at the time of acquisition. The term Company B is used in this study to denote the company being acquired. Company B is a much smaller company of approximately 1,400 employees at the time of acquisition.

The planned organizational change provided by the acquisition by one company of another company during a specified time span produced a unique setting to ascertain how supervisory and hourly employees transfer. The setting for this study is a heavy manufacturing facility (Company B) located in southwest United States. The facility manufactures tubular products used in the energy sector. The acquiring company (Company A) manufactures steel and tin for use in various applications in industry and consumer products for global markets. The tubular division is a smaller part of the overall market share of Company A and it is within this division that Company B now resides. The acquisition of Company B made Company A the largest producer in this market in North America.

Company A began a program to aggressively address safety within its facilities approximately eight years prior to the merger. A major priority in this initiative was the development of safety as a core value and highest priority of the company. To facilitate this transition, a planned cultural change was introduced that was so structured as to provide a newly-developed safety department with the ability to address policy and enforce levels of accountability within plant management at all manufacturing facilities while meeting the guidelines of the Occupational Safety and Health Administration (OSHA). While the United States federal government and some state governments have agencies in place to enforce and maintain industrial
safety, the one agency tasked with setting safe practices and standards for most industries is the Occupational Safety and Health Administration (OSHA).

Company A sought to incorporate all necessary OSHA standards as they applied to its operations, and in some areas, additional requirements were introduced that exceeded these standards. By the time of the acquisition, Company A had developed a strong safety-based operational climate among top managerial staff at all North American facilities. An area of considerable change was in the number of hours devoted to safety training. For example, Company A requires a yearly one-day training session for all production and maintenance employees. This training session serves as a refresher in certain key elements of the safety program. The session consists of eight topics with each topic normally consisting of a 55- minute power point presentation reinforced with video segments that further emphasize key concepts related to each topic. Each presentation is facilitated by a facilities training department instructor who also functions in the role of providing safety training. As this example illustrates, Company A spent substantial resources in providing safety training that addressed procedural and cultural issues - all in a concerted effort to change the existing culture. It is noteworthy that within this time frame, injuries did dramatically fall to significantly lower levels than in prior years. Company A continues to maintain this safety climate and rigorously emphasizes safety standards in all manufacturing operations.

Company B, however, had a drastically different practice in place in relation to safety procedures. While safety was stressed to some degree, it was not a core value and many of the safety procedures required by Company A were not followed by Company B. This was especially true in safety training. Company B spent significantly less resources than Company A in training its workforce on safety and safety-related practices. The primary cultural emphasis of Company B was production.

For example, Company B employees were not required to carry out many safety applications to ensure the control of hazardous energy in performing some equipment servicing using a process known within industry as lock out-tag out. This practice is directly opposed to the approach taken by Company A in similar situations.
Employees were not required to perform energy control procedures to eliminate potential accidental startup of equipment while servicing the equipment. Company B did not require employees to wear fall protection at certain height levels or place other restrictions as did Company A. In short, Company B did not have the same level of commitment to safety and did not practice the same degree of safety standards required by Company A. As these examples illustrate, the introduction of these safety practices was a significant change for the acquired organization (Company B).

The examination of transfer training in a field setting is necessary to determine if differences in training and training transfer exist between salaried managerial employees and hourly employees within a particular organization. A specific time period during the planned integration of the safety-based culture of Company A into the acquired Company B is the setting of this study. At the onset of this study, however, dramatic economic events occurred in the tubular industry. The economic downturn of 2007 – 2008 produced a significant reduction in orders within the tubular market. Both Company A and Company B placed a majority of the managerial and hourly workforce into layoff status. The workforce of Company B was reduced in size by 99% in 2007. Beginning in 2008 a small percentage of the workforce was removed from layoff status. The sample population of this study consists of the managers and hourly employees of Company B that returned to work during this timeframe. The total work population of Company B consisted of 86 hourly employees and 18 supervisors. The senior management team consisted of a plant manager and four area managers. The senior management team was not part of this study for they did not enter layoff status nor were they scheduled to attend this training during the timeframe of this study. At this point in time, no additional employees in layoff status were scheduled to return to work in the foreseeable future. While the sample size is considerably smaller than originally intended, Company B did not foresee any increase in the number of orders for 2008 – 2009 and requested that the study continue as planned with the existing workforce.

Data is collected through the surveyed responses of both employee groups to questions regarding a specific mandatory annual safety-training program that is a central piece of the training provided as part of the safety-based organizational culture.
of Company A. By surveying the 18 managers and 83 hourly employees of Company B using the Learning Transfer System Inventory (LTSI), an instrument scale that measures strengths and weaknesses of training transfer (Holton, et al.1998), the researcher investigates the perception of these two employee groups of the training and transfer process immediately after a specific safety training event.

In addition to the LTSI survey, the researcher investigates, through semi-structured interviews, the lived experiences of the 18 managers as they relate to experiences of transfer. As demonstrated in the literature review, supervisor support, co-hourly employees support, and opportunity to use the newly-acquired knowledge and skills on the job are directly correlated to positive transfer. An examination of individual experiences of these managers allows the researcher to determine the impact of training transfer. Interviews of the hourly employees were not permitted by the senior management team of Company B. This senior management team expressed a concern that any hourly employee interviews would not be productive. Finally, an evaluation of the organization's safety record from 12 months prior to acquisition to 24 months post acquisition are reviewed and compared to the interview and survey data.

Therefore, the purpose of this study was to address the three research question and their associated hypotheses stated below. Three research questions led to five testable hypotheses, each stated in null form.

1.3 Research Questions and Hypotheses

Research Question 1. Following training implemented as part of the acquisition process, do supervisory personnel and hourly employees significantly differ in personal, training, and work environment training transfer factors?

Null Hypothesis 1. Supervisory employees do not significantly differ from hourly employees in LTSI Personal Factors.

Null Hypothesis 2. Supervisory employees do not significantly differ from hourly employees in LTSI Training Factors.

Null Hypothesis 3. Supervisory employees do not significantly differ from hourly employees in LTSI Work Environment Factors.
**Research Question 2.** From the perspective of interviewed supervisors, did the required training implemented as part of the acquisition process change the motivation to transfer?

*Null Hypothesis 4.* The required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors.

**Research Question 3.** Does the required training implemented as part of the acquisition process lead to improved performance outcomes?

*Null Hypothesis 5.* The rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training.

The survey and interview data for this study came from the employees who attended one-day required safety training at the recently-acquired facility (Company B). Both the research questions and research hypotheses will be addressed through completion of the Learning Transfer System Inventory (LTSI) by supervisory and hourly employees at the conclusion of the required one-day training sessions and through interviews of supervisory personnel.

### 1.4 Significance of this Study

This study will strengthen the body of training transfer research for practitioners in the disciplines of Training and Development and Human Resource Management.

Previously-published studies established the importance of transfer and performance outcome expectations. Many of these studies in transfer have established the importance of supervisory and managerial roles as part of the overall impact of the transfer system on effective transfer; however, little is known about the degree to which these managers and supervisors, who are actively engaged in the transfer process in typical organizational settings, view the transfer process. This study seeks to further emphasize this importance through the examination of transfer in a field setting between managerial and hourly employees. This study also provides further research into understanding the factors that managers and supervisors perceive as
influencing their abilities to effectively facilitate the transfer process. This study has implications for stakeholders in the area of employee learning and performance outcome expectations, organizational development and change, human resource management, and organizational leadership. New insights related to training transfer provide stakeholders with the ability to leverage training resources more effectively between various employee groups within an organization.

1.5 Assumptions

The researcher makes the following key assumptions about this study:

All participants will truthfully respond to research-related questions and freely share their experiences either through the interview process or questionnaire.

The researcher separates personal experiences from the experiences of study participants, accurately records the data, and draws rational conclusions from the information.

1.6 Key Terms and Definitions

*Hourly employee* is defined as an employee with the responsibility to complete certain assigned job tasks. The hourly employee is under the direction of a supervisor and do not have any management duties (Cole, Bruch, & Vogel 2006). For the purpose of this study the term *hourly employee* is used to denote the hourly employees or hourly unionized employee.

*Learning* is defined as “The acquisition of knowledge by individual employees or group of employees who are willing to apply that knowledge in their jobs in making decisions and accomplishing tasks for the company; a relatively permanent change in human capabilities that does not result from growth processes” (Noe 2005, p. 437).

*Merger* and *acquisition* are terms commonly used within business. Merger is the “...combination of two or more companies into one organization with one company
retaining its identity (AllBusiness 2009).” In a merger arrangement, the larger of the two companies maintains its identity while the other company is absorbed into its organization. Acquisition is similarly defined as “Purchase of an asset...with title and rights of ownership passing to the new owner (AllBusiness 2009).” The intention of both terms is that one company, through a purchase, acquires the assets of another company. The term acquisition is primarily used because it accurately reflects the business environment for the organization under study.

Motivation to transfer is the desire of a trainee to put into practice in his or her job both knowledge and skills presented in a training program (Noe & Schmitt 1986).

Organizational culture is described by Bates and Khasawneh (2005, p. 98) as the “shared meanings and manifestations of organizational behavior and, as such, emphasizes the common beliefs, values and assumptions of organizational members.” Organizational culture is a learned process created by a group as it seeks to deal with external issues faced by the organization. These issues influence an organization’s members to adapt and produce an internal system to address these issues. This system is considered valid and therefore is taught as the correct way to understand and react to the issues (Schein 1990).

Performance outcome expectations are job performance changes that lead to outcomes valued by an individual or an organization (Holton, et al.1998).

Self-Efficacy describes personal beliefs a person holds about his capabilities to learn or perform actions at designated levels; the belief about what one is capable of doing (Bandura 1977, 1986).

Supervisor or manager is defined as an employee with the responsibility and authority provided by the employer to direct other employees in the performance of their job duties. This direction includes the assignment of work, the determination of performance, and the ability to impose disciplinary actions if required (Higher Education Employer-Employee Relations Act 1979). For the purpose of this study the term supervisor is used to denote the employee group with the responsibility and
authority assigned by senior management to direct hourly employees in the performance of their job duties.

*Training* is the process by which employees “...acquire the knowledge and skills related to their work requirements by formal, structured or guided means” (Westhead & Storey 1996, p. 14) and will be used interchangeably with learning. Training or learning, in the context of this study, occurs in a classroom setting.

*Training transfer* describes the degree to which trainees apply knowledge, skills, behaviors, and attitudes learned through training (Holton, et al. 1998). It is “...the effect of training on the subsequent performance of an operational task (Brinkerhoff & Montesino 1995, p. 267).” Baldwin and Ford (1988, p. 63) define positive transfer of training as “...the degree to which trainees effectively apply the knowledge, skills, and attitudes gained in a training context to the job...maintained over a period of time.”

*Transfer climate* describes organizational variables such as supervisor and organizational support that limit or augment application of knowledge and skills learned in training (Mathieu, et al.1992).

*Transfer system* refers to "...all factors in the person, training, and organization that influence transfer of learning to job performance," (Holton, et al. 2000, p. 44). Factors such as supervisor support, employee peer support, opportunity to use new skills on the job, perceived content validity, and transfer design are included (Gaudine & Saks 2004).
Chapter 2 – Literature Review

2.0 Introduction

The purpose of this study is to investigate factors affecting training transfer in a field setting of an organization and the impact on both hourly and supervisory personnel. The setting of the training event is a recently-acquired manufacturing organization that is in the process of undergoing change as it assumes the procedures and structure of its new parent company. A comprehensive review of literature was conducted to examine previous research in the area of training transfer across organizational settings. The overarching goal of the current research is to identify gaps in existing research on training transfer with the intention of contributing to future research.

2.1 Research Questions and Hypotheses

*Research Question* 1. Following training implemented as part of the acquisition process, do supervisory personnel and hourly employees significantly differ in personal, training, and work environment training transfer factors?

*Null Hypothesis* 1. Supervisory employees do not significantly differ from hourly employees in LTSI Personal Factors.

*Null Hypothesis* 2. Supervisory employees do not significantly differ from hourly employees in LTSI Training Factors.

*Null Hypothesis* 3. Supervisory employees do not significantly differ from hourly employees in LTSI Work Environment Factors.

*Research Question* 2. From the perspective of interviewed supervisors, did the required training implemented as part of the acquisition process change the motivation to transfer?

*Null Hypothesis* 4. The required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors.

*Research Question* 3. Does the required training implemented as part of the acquisition process lead to improved performance outcomes?
Null Hypothesis 5. The rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training.

2.2 Structure of the Literature Review

The literature review is divided into four sections. The first section discusses transfer and examines conceptual parameters within this process. The second section consists of an examination of the Transfer literature including a review and analysis of existing research. The third section of the literature review is an examination of the Holton transfer model including the theoretical framework utilized within the model to investigate motivation to learn, transfer of learning, and job performance expectations. Included within this section is a discussion on the rationale for selection of the Holton model for use in this study including an analysis of its strengths and weaknesses. The final section presents a comprehensive analysis of the literature; identifies relevance to the current study; establishes the contribution of this study to existing literature; and, summarizes the literature review.

2.3 Training Transfer Defined

The fundamental assumption of Training Transfer, Learning Transfer or simply Transfer is that performance of an individual is improved through well-defined employee training processes (Burke & Hutchins 2007). Baldwin and Ford (1988, p. 63) define transfer of training as “…the degree to which trainees effectively apply the knowledge, skills, and attitudes gained in a training context to the job.” Broad and Newstrom (1992) described transfer of training as an effective and continuing application, by trainees to their jobs, and the transfer of the knowledge and skills gained in training to areas both on and off their jobs. Likewise, Noe and Schmitt (1986) define training as a planned experience designed to bring about permanent change in an individual’s knowledge, attitudes, or skills. Baldwin and Ford’s definition as well as Broad and Newstrom’s definition denotes transfer as a process of learning toward job application. Noe and Schmitt’s (1986) definition is limited to training, however the concept of transfer of training is implied. The employee receives knowledge through a training process and transfers this knowledge into an
increase in job-related ability or performance (Stewart, et al. 2000). It is the aim of training to produce application that is realized as improved employee performance.

A study conducted by Chiaburu and Marinova (2005) corroborates these distinctions. Chiaburu and Marinova studied six pre-training motivational elements related to transfer. These researchers surveyed 186 participants in a one-day management training event by using a Likert-type survey constructed from five previously-published studies. The researchers found that employees with higher intrinsic and extrinsic motivational factors upon entering a training event were more likely to transfer training into performance changes than individuals with lower or no motivational factors. The Chiaburu and Marinova study concluded that the pre-training motivational elements examined each had as a fundamental component, the improvement of individual performance. This change in performance was considered the key factor that training transfer had occurred and is aligned to the definitions of transfer presented. The knowledge, attitudes, and/or skills learned in training are translated into improved performance by the individual in relation to specific jobs, tasks, or activities (Broad & Newstrom 1992; McSherry & Taylor 1994; Burke & Baldwin 1999). From this research, Training Transfer is to be viewed as the application of learning. The effectiveness of Transfer is centered on the employee’s ability to apply knowledge toward improved or increased job-related performance. Even though the study conducted by Chiaburu and Marinova addressed the importance of supervisor support on learning transfer in a task-oriented environment, it did not examine the impact of supervisor support on transfer of learning at the managerial level.

Baldwin and Ford’s work (1988) substantiates Chiaburu and Marinova’s application of learning by noting that the learned behavior must be generalized to the context of the job and be maintained over a period of time to be considered effective. The work of Yamnil and McLean (2001) also reflect this concept of application of learning by noting that for transfer to occur successfully, a positive change in performance must occur. The research by Yamnil and McLean did not, however, examine system-wide elements to determine whether a training program could not provide the necessary change nor did their study take into consideration the barriers within an organization that trainees face when attempting to transfer the learning back into the workplace. If
learning is not translated into a performance change that can be identified by the organization, then the results of the training in the context of job performance is negligible (Gaudine & Saks 2004). Costs associated with the training will not be realized as cost-effective for the organization unless application in terms of increased or improved employee performance is achieved. Thus, the primary indicator of effective training transfer is some form of measurable performance improvement (Velada, et al. 2007). It is the application of knowledge which is transferred in a demonstrable way by the trainee that is also observed by the organization. Thus the underlying complexities associated with transfer must also be examined.

Building upon these concepts of transfer, the conceptual framework found within transfer must be further examined within the structure of an organization. The role of training transfer research is to formulate and understand the learning process and how learning is transferred in both individual and organizational contexts (Holton 2005). Training transfer not only defines the parameters of the learning process, but contributes to an understanding of the dynamics that shape the learning process and the intended performance outcome (Huczynski & Lewis 1980). Training transfer includes the understanding of how learning works within an individual (Senge, 1990; Senge, et al. 1999) as well as contributing human factors such as intrinsic motivators and cognitive abilities. Likewise, external influences such as organizational culture (Hawley & Barnard 2005) and extrinsic motivators that are specifically related to employee performance such as supervisor and peer support must be considered. Transfer is a reflection of the complexity associated with the learning process, the individual trainee, the training event, and the organization. As a result, training transfer must be viewed comprehensively to include the process of learning and the associated variables that both positively or negatively influence this process and impact the individual’s ability to transfer. Training and Transfer does not occur in the isolation of a classroom room setting but includes aspects related to the individual trainee, the training event, and the organization.

2.4 Research Divisions within Transfer Literature

Training and development is a significant aspect of the modern business organization and therefore it has received considerable attention and research over the past four
decades (Salas & Cannon-Bowers 2001). The transfer literature can be divided into roughly two areas of research: specific-particular aspects of transfer which are studies that examine a single or select group of factors that relate to the whole of transfer; and, comprehensive—aggregate studies of transfer which are studies that seek to understand the interaction of all factors related to transfer. A comprehensive review must examine and analyze related studies both from the specific–particular and comprehensive–aggregate areas of research. The goal is to provide the reader a complete picture of training transfer and the research utilized to develop this picture.

2.5 Development of Transfer Research

In Baldwin and Ford’s “Transfer of Training: A Review and Directions for Future Research” (1988), the authors examined previous empirical studies within three areas: training design, trainee or learner characteristics, and work environment factors. Within the area of training design, a total of 39 research studies were reviewed. Through their research, Baldwin and Ford found four basic principles related to training design: (1) identical elements, (2) teaching of general principles, (3) stimulus variability, and (4) various conditions of practice. As illustrated in Table 2.1, each principle seeks to maximize an element of instructional design toward the cognitive engagement of the trainee with the materials presented. The premise within training design is the quality of training material and its presentation with the higher the quality (training input), the greater the effect of training output toward positive transfer.
Identical elements | "Transfer is maximized to the degree that there are identical stimulus and response elements in the training and transfer settings."
---|---
General principles | "Transfer is facilitated when trainees are taught, not just applicable skills, but also the general rules and theoretical principles that underlie the training content."
Stimulus variability | "Positive transfer is maximized when a variety of relevant training stimuli are employed."
Conditions of practice | "Conditions of practice include a number of specific design issues, including massed or distributed training, whole or part training, feedback, and over learning."

Twenty-five studies were examined in relation to trainee characteristics. Baldwin and Ford noted nine characteristics that appear to affect training output and conditions of transfer from these studies. These nine characteristics are:

- Job Involvement
- Need for Achievement
- Perceived Training Value
- Intelligence Level of Trainee
- Goal Setting
- Feedback
- Selection of Training
- Relapse Prevention
- Realistic Information / Informed Decision

The final area identified is work environment. While the studies reviewed appear to establish how elements in the work environment such as supervisor support, the ability to apply new behaviors or skills, and employee reward structure affect transfer, Baldwin and Ford are highly critical of the existing transfer research and proposed direction for future research noting the need to examine the interplay of these key variables at an operational level within an organization or department with the goal of
developing greater insight to how these variables actually affect the transfer process (Burke & Hutchins 2007).

Analysis of the Baldwin-Ford study shows that three concepts presented in the authors’ findings contribute to the ongoing development of transfer research. Multiple variables both within and outside the training event were established to determine the influence on the actual transfer process. Baldwin and Ford note that while additional work needs to be done in this area, multiple variables contribute to or distract from training transfer. Baldwin and Ford refer to this concept as The Transfer Problem.

This is significant for this was the first study to actually bring focus to the complexities and problems associated with training and transfer. Baldwin and Ford’s study is one of the first to actually bring together a review of existing studies to formulate a comprehensive analysis of all the factors that can influence transfer. Up to this point, no comprehensive attempt existed to identify these variables and bring them together into one model. While the work of Baldwin and Ford focused on problems and barriers to effective transfer and the interplay of these variables to either build or subdue the transfer process, their work only used existing studies to make their determination. Long-range as well as more comprehensive studies are needed.

One aspect revealed in the Baldwin-Ford study is the importance of consistency of data. The Baldwin-Ford framework attempts to achieve a level of comprehensiveness by identifying and bringing together the variables found in the transfer process. Each of twenty-five studies reviewed by the authors utilized various modalities to collect and analyze data. Each study reviewed focused on a particular variable within the transfer process using an assessment and data gathering tool unique to that study setting. While the uniqueness of the reviewed studies is noted by the authors, they do allow the authors to systematically identify variables that presented themselves in these studies. However, their model is not field-tested by the authors in any format nor do they explore with significant depth the data collection methods of the reviewed studies and how these methods interact with each other.

The Baldwin-Ford framework is a combination of information gained that is formulated by the authors into a reasonable model setting for the purpose to explain to some degree the complexities associated with transfer. It is here that the value of the
Baldwin-Ford model is realized. While the need for additional study is apparent and the authors do establish a series of discussions for further research, the fact that this model was the first attempt to address transfer complexities and the transfer problem is significant. Baldwin and Ford and the Baldwin-Ford Model provide a catalyst for future studies addressing these complexities. Prior to Baldwin and Ford’s review, a comprehensive model did not exist as previous models only addressed selected variables associated with transfer.

The final concept presented by Baldwin-Ford is the identification and promotion of the expectancy model in providing a useful heuristic for understanding and integrating research on transfer motivation. Both Noe and Schmitt and Baldwin and Ford expressed the belief that a motivational factor has to exist for the individual to “want” to transfer. Expectancy theory is based on the concept of an individual’s perceived value (Thierry 2002; Barnard 2005; Azman, et al. 2009). Motivation directly impacts learning based on the perceived value placed on using the knowledge gained through the training event by the individual. If the motivation of the individual is high, then the level of transfer will correspondingly improve (Wieland-Handy 2008). Similarly to the research findings of Yamnill and McLean and the work of Chiaburu and Morinova, Baldwin and Ford support the need for examining transfer from a broader perspective. If an individual believes that a desirable outcome is obtained through training and transfer, he or she is motivated to attend this training. Baldwin-Ford proposed expectancy theory as the basis for trainee motivation to transfer by referencing Noe and Schmitt’s (1986) identification of studies performed by Froman (1977) and Moitra (1976).

Noe and Schmitt (1986) ascertained from the studies of Froman (1977) and Moitra (1976) that a trainee’s belief that the learned materials will result in a personally-desired positive outcome such as a salary increase is an important antecedent for motivation to learn. In other words, the perception of outcome is the motivational factor for the individual to attend the training and transfer the newly-acquired knowledge, skill, or ability (Colquitt, et al. 2000b; Wang & Wentling 2001). This perception is shaped by the individual’s personality and associated perception and engagement with the work environment. This perception is expressed through three interacting constructs: 1) the individual’s belief that if they perform well they will
receive some offered benefit; 2) the individual’s belief that they will actually receive the promised benefit, and 3) that the benefit will be satisfying (Gibbs 2000; Ayers 2005; Ismail, et al. 2008; Nair 2007).

2.6 Expectancy Theory and Transfer

Vroom (1964), who first presented the expectancy theory, postulated that people will make choices based on a desire to maximize pleasure and minimize pain. Vroom established that valence-instrumentality-expectancy contribute to the level of expectancy for an individual (Wieland-Handy 2008). Valence is the expected satisfaction or value an individual believes will be the outcome received rather than the actual value received from the outcome (Colquitt, et al. 2000a; Lim & Morris 2006; Wieland-Handy 2008). Instrumentality is defined as the reward that is the result of achieving the performance goals (Lim & Morris 2006). Taken together valence and instrumentality produce expectancy which is the degree that an individual such as an employee believes that a particular outcome will emerge (Wieland-Handy 2008).

Vroom expresses this theory as a formula of \( P = f(F \times A) \), which states that performance (P) is the result of the interaction of force (F) and ability (A). Force (F) is the sum of valence-instrumentality-expectancy while ability (A) reflects the individual’s potential to perform a task (Yamnill & McLean 2001; Wieland-Handy 2008). An individual’s effort to transfer is based on a combination of abilities, cognition, traits, and role perceptions (Yamnill & McLean 2001). In summary, expectancy theory is the perceived value an individual places on a training event. This value is based on a combination of factors related to the employee’s personality and ability as well as work environmental factors. In relation to training and transfer, expectancy theory is understood as a motivational aspect for the individual (Colquitt, et al. 2000a; Thierry 2002; Ayers 2005; Merriam & Leahy 2005). For an employer, this theory may be expressed in practical terms of linking reward with job performance. If an employee believes that an actual benefit is received from attending a training event and transferring that knowledge, skill, or ability into a tangible individual performance improvement, then the likelihood that transfer will occur is improved. Likewise, if no benefit is perceived, then transfer is unlikely to occur. Baldwin and Ford expressed in their review the necessity for the expectancy
theory to be utilized in future transfer studies as a motivational aspect of transfer. This
recommendation is later reflected in the research findings of Colquitt, et al. 2000a; Thierry 2002; Ayers 2005; and, Merriam & Leahy 2005 which show expectancy
theory as a predictor of transfer.

Building on the Baldwin-Ford study and review of subsequent transfer literature, the
issues related to transfer complexities and the transfer problem can be divided into
three general categories:

1. The individual trainee or employee and the motivational, cognitive, and
psychological elements of the individual trainee,
2. The training event including its instructional design and delivery.
3. The organization or work conditions and how the climate of the organization
influences the trainee’s ability and motivation to transfer (Tannenbaum 1997;

2.7 Scope of Transfer

Transfer can be further defined as near transfer or far transfer. Near transfer is
categorized as the events or simulations in the training that are directly related to or
very similar to the events or conditions found on-the-job (Baldwin & Ford 1988;
Ford; 1990; van der Klink et al. 2001; McDonald 2001; Holladay & Quinones 2003;
Merriam & Leahy 2005; Sofo 2007; Williams 2008). For example, employees
undergoing technical training have in-class exercises that directly reflect conditions as
they exist on-the-job. These employees are then more likely to transfer the skills
learned in training to the job (Baldwin & Ford 1988). The similarity of the learning to
the on-the-job requirements are exact in a level of detail that the employee can
recognize conditions on-the-job to the training received and then should be able to
effectively transfer the new knowledge, skills, and abilities to the job and improve
individual performance (Yamnill & McLean 2001; Mancy n.d.; Williams 2008).

Yamnill and McLean (2001) contend that near transfer corresponds to Thorndike’s
Identical Elements Theory of Transfer Training (Thorndike & Woodworth, 1901)
which postulates that “…where the amount of transfer between the familiar situation
and the unfamiliar one is determined by the number of elements that the two
situations have in common.” In other words, transfer is based on the level of identical elements found in the original and new learning situations. Effective transfer requires that the situation between the learning context and the job tasks must always be specific and not general (Munro & Bao 2005). Later, Thorndike introduced the concept of “belongingness” or “connectedness” to the theory that established that people would more readily make a connection if they perceived that the two elements go together (Kearsley 2000). Depending on the subject matter, using instructional design elements related to near transfer would provide a more effective means for transfer than other transfer forms (Baldwin & Ford 1988).

Far transfer represents the level of dissimilar conditions that exist between the training events or simulations and the conditions found on-the-job. (Baldwin & Ford 1988; Ford; 1990; van der Klink, et al. 2001; McDonald 2001; Yamnill & McLean 2001; Holladay & Quinones 2003; Merriam & Leahy 2005; Sofo 2007; Williams 2008). In this setting an employee receives training in a particular skill such as problem-solving or resource allocation and then applies the principles learned in the classroom to situations found on-the-job. There is greater distance in application of knowledge, skills or abilities to specific job tasks if the information is taught in abstract terms as principles or rules. The employee is then placed in the position to translate these principles or rules into concrete actions. There is no direct similarity for the employee to use as a point of cognitive reference to transfer into a specific setting. Thus, the employee is required to perform a higher level of generalization from training to on-the-job performance (Sofo 2007). The concept of far transfer corresponds to Goldstein and Ford’s (2002) Principles Theory. The premise of this theory is generalization of specific knowledge from one setting to another. The focus is to instruct on certain principles as they relate to a task or concept without regard for the transfer setting as long as the individual is able to utilize the underlying principles in other settings (Yamnill & McLean 2001; Sofo 2007).

Near transfer and far transfer are not the only aspects or forms of transfer in the literature; however, they are the most noted (Baldwin & Ford 1988; Ford; 1990; van der Klink, et al. 2001; McDonald 2001; Yamnill & McLean 2001; Holladay & Quinones 2003; Merriam & Leahy 2005; Sofo 2007; Williams 2008). Other forms of transfer can be developed as part of the instructional design and transfer design of a
training program, Barnard, et al. (2001) provides a general overview of the various forms of transfer and these are presented in Table 2.2. For example, Salomon and Perkins (1989,1992) observed two distinct but related transfer mechanisms referred to as low road and high road.

Low road transfer is the process of transfer that occurs when the stimulus conditions in a prior context of learning and the transfer context are adequately similar to trigger well-developed semi-automatic responses. Low road transfer is similar to near transfer and describes the ability for an individual to adapt to a new situation using previous knowledge due to the similarity of the two situations. High road transfer is descriptive of higher mental effort. In this situation an individual attempts to make a cognitive connection or schema between two learning contexts that do not have easily observable similarities (Salmon & Perkins 1992). In this context, learning is more associated with far transfer in the sense that an individual will take a general construct of principles or concepts and apply them to multiple yet different environments (Machin 1999). This deliberate search for connections requires a level of cognition that is not as intuitively responsive as low road transfer. The leadership development and training an individual receives, practices, and experiences in one organization which is utilized by the individual in another vastly different organization would be an example of high road transfer. Lessons learned in one context are used in another context.
Table 2.2 Different Forms of Transfer (Barnard, et al. 2001)

<table>
<thead>
<tr>
<th>Transfer Form</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive transfer</td>
<td>Extent to which trainees have acquired knowledge, skills, and attitudes, which can be applied effectively in work practice. Previously acquired knowledge, skills, and attitudes facilitate the learning of new knowledge, skills, and attitudes</td>
</tr>
<tr>
<td>Negative transfer</td>
<td>Extent to which an undesired effect occurs after following a course. Previously-acquired knowledge, skills, and attitudes hinder the learning of new knowledge, skills, and attitudes</td>
</tr>
<tr>
<td>Far transfer</td>
<td>Transfer when the initial learning task and the subsequent tasks to be learned differ substantially</td>
</tr>
<tr>
<td>Near transfer</td>
<td>Transfer when the initial learning task and the subsequent tasks to be learned differ only slightly or not at all</td>
</tr>
<tr>
<td>Low-road transfer</td>
<td>Transfer based on intensive and varied training, and occurring by means of automatic use of acquired knowledge and skills in a new context</td>
</tr>
<tr>
<td>High-road transfer</td>
<td>Transfer based on consciously abstracting of already acquired knowledge and skills from one context to another</td>
</tr>
<tr>
<td>General transfer</td>
<td>The trainee acquired certain working methods, knowledge and skills which can be used in tasks other than the original learning task</td>
</tr>
<tr>
<td>Specific transfer</td>
<td>The learning task is so specific that no transfer can be expected to other tasks</td>
</tr>
<tr>
<td>Horizontal transfer</td>
<td>Transfer from one task to another</td>
</tr>
<tr>
<td>Vertical transfer</td>
<td>Transfer within a certain task with growing expertise</td>
</tr>
</tbody>
</table>

As an individual undergoes the process of learning in the work environment, all of the factors found within transfer come together to create the forces that produce the transfer system for each particular individual. While the exact nature or formats of transfer as listed by Barnard, et al. (2001) have been examined through empirical studies (Baldwin & Ford 1988; Jelsma, et al. 1990; Gick & Holyoak 1983; Patrick 1992; Gielen 1996; Tannenbaum & Yukl 1992), there is still a level of debate on how the mechanism of transfer interacts in the learning and transfer processes and the degree that transfer actually occurs (Colquitt, et al. 2000a; Antonacopoulou 2001; Mancy n.d.; Godfrey 1999.). This is understandable in consideration of the behavioral
cognitive process of learning and how this process may or may not relate to a change in individual performance and organizational outcomes (Schwartz, et al. 2005; Nixon & Murr 2006; Perryer & McShane 2008) as well as the researcher’s ability to sufficiently investigate this process effectively in various field settings (Newton & Doonga 2007). Further research in other field settings is warranted.

2.8 Individual Learner/Trainee

The individual trainee or employee is the focus of training. In examination of the trainee in the transfer literature, research questions typically centered on how the employee transferred training into job performance and sought to determine the abilities, skills, and knowledge that the trainee must process to effectively transfer as well as the motivational factors which must exist to encourage transfer. These questions concerning the individual and transfer examine the individual trainee within the context of undergoing some form of training, and as a result, transfer of newly-acquired knowledge and / or skills into job-related performance. Past research studies have indicated that motivational factors related to an individual’s desire and ability to learn and transfer as well as individual personality, cognitive and physical abilities are aspects that led to the individual trainee’s ability to transfer (Wang & Wentling 2001; Gaudine & Saks 2004; Arthur et al 2003).

2.8.1 Cognitive Ability

Trainee motivation is one aspect related to motivation to transfer; however, it is not the only aspect. Cognitive ability is directly associated with transfer. General cognitive ability, which is the capacity of an individual to learn (Salas & Cannon-Bowers 2001), is considered to be the best single predictor of an individual’s potential in relation to learning, transfer, and performance (Bell & Kozlowski 2002; Hutchins & Burke 2007; Holton, et al. 2007). Colquitt, et al (2000b) notes the importance of cognitive ability, also known as “g”, by stating “…g has been found to be the primary determinant of training success across a wide variety of jobs, and some have suggested that there is ‘not much more than g’ when it comes to factors that influence training effectiveness.” Ability is shown as an enabling aspect for learning. If
effective learning is to occur, then the cognitive ability to learn must exist within the individual (LePine et al. 2000).

The aspect of cognitive ability in relation to learning and motivation to transfer is illustrated through a study of transfer and employee workplace literacy skills. Workplace literacy skills such as reading and writing ability, mathematical skills, and listening skills are necessary for effective employment (Hollenbeck & Timmeney 2008). Bates and Holton (2004) investigated job-related workplace literacy skills and conditions of transfer among employees in a state-level Department of Transportation (DOT) located in the southern United States. The study sample consisted of 1,079 DOT employees with 319 Mobile Equipment Operators, 178 Highway Foremen, 481 Engineering Technicians and Engineering Technician Supervisors, and 77 Highway Maintenance Specialists and Superintendents. Participants were required to attend data collection sessions, but completion of the assessment instrument was not mandatory. A total of 1,218 employees attended the sessions with 1,079 (88.5 %) completing the instrument. The assessment instrument consisted of a WorkKeys assessment instrument and the Learning Transfer Systems Inventory (LTSI) developed by Holton (Holton, et al. 2000). The WorkKeys assessment is criterion-referenced in design. The assessment is constructed to measure an employee’s cognitive and interpersonal skills in reference to the proficiency requirements to successfully perform a specific job. The assessment criterion is determined through a job analysis which examines the required skills and skill levels associated with each job category (Lee & Nathan 1997). The WorkKeys system assessment tools chosen for this study were Reading for Information and Applied Mathematics. These two assessment tools were chosen by DOT management for their relative importance for the job groups in the study. WorkKeys assessment tools’ reliability was shown as adequate using Cronbach’s coefficient alpha and had already been in established use by the DOT at the time of the Bates-Holton Study. The WorkKeys’ Reading for Information and Applied Mathematics were administered in separate sessions. The LTSI was administered to each participant following each session. The purpose of the Bates-Holton study (2004) is to examine if employee job-related workplace literacy skill level impacts the employee’s ability to transfer. To determine this, the researchers utilized two different multivariate analyses of covariance (MANCOVA). From their analyses of the data, Bates and Holton found that while individuals with
low literacy levels had high expectations and value for the training received, these individuals were less able to transfer the new skills and knowledge as effectively due in part to their low literacy ability. The employees that failed one or both WorkKeys assessments reported lower values on the LTSI related to openness to change and peer support but higher values related to supervisor sanctions which suggests employees perceive negative outcomes for failure to use their training.

The results of the Bates-Holton study indicate that there is a significant transfer difference between those employees who met the required literacy skill levels in comparison to those employees who did not. This study demonstrates that the cognitive ability requirements associated with the job or activity has a direct impact upon the learning process and ability to transfer for an individual. Noe and Schmitt (1986) stress that cognitive and psychomotor ability is indicative of the capacity to understand and comprehend materials presented in training, therefore if the abilities of the individual match the learning requirements with other variables being equal, then effective learning and transfer can occur (Brinkerhoff & Montesino 1995; Merriam & Leahy 2005). An individual’s level of knowledge plays a significant role into how that individual engages the training material presented (van Merriënboer, et al. 2006; Paas, et al. 2003b). If the individual possesses limited knowledge related to the materials presented or has limited cognitive capabilities to learn, then direct relationship to learning the materials presented in the training is also limited (Bates & Holton 2004; Pollock, et al. 2002).

While a general cognitive ability is necessary for someone to actually learn material as demonstrated in the Bates-Holton study, cognition is not the only aspect associated with ability. Ability is also comprised of the physical capacity of an individual to perform (Holton 2000; Holladay & Quinones 2003; Holton, et al. 2007; Williams 2008), interpersonal skills-personality traits (Herold et al. 2002; Arthur, et al. 2003; Naquin & Holton 2002; Kanfer & Kantrowitz 2002) as well as issues associated with gender and age (Machin 1999; Arthur, et al. 2003; Barnard 2005; Galbraith & Fouch 2007). Therefore, ability as a construct within transfer includes aspects associated with cognition, psychomotor skills, interpersonal-personality traits, gender, and age.
2.8.2 Personality Traits

Personality traits can influence an individual’s motivation to learn and motivation to transfer (Tziner, et al. 2007). Holton (2005), building on Baldwin and Ford’s (1988) conclusion that personality traits can affect transfer as well as job performance, theorizes that the five personality traits, also known as the Five Factor Model or FFM (McCrae & Costa 1987; McCrae & John 1991; Barrick & Mount 1991) play a significant role. The Five Factor Model, described in Table 2.3, consists of emotional stability (negative pole: neuroticism), extraversion, openness to experience, agreeableness, and conscientiousness. Of these five traits, the three traits of emotional stability, openness to experience, and conscientiousness were found by Holton to have evidence supporting positive transfer (Herold, et al. 2002; Holton 2005). For example, traits associated with conscientiousness such as a drive to succeed, commitment to higher standards of performance, and dependability influence a person’s motivation to learn. Individuals with a strong level of conscientiousness perform well in training events and have stronger training outcomes than those who do not have as high a level of conscientiousness (Tziner, et al. 2007).
Table 2.3 Five Factor Model Trait Descriptions

<table>
<thead>
<tr>
<th>Name</th>
<th>Traits Associated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>Being sociable, gregarious, assertive, talkative, and active.</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>Being anxious, depressed, angry, embarrassed, emotional, worried, and insecure</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>Being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant.</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>Being careful, thorough, responsible, organized, hardworking, achievement-oriented, and persevering</td>
</tr>
<tr>
<td>Openness</td>
<td>Being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive.</td>
</tr>
</tbody>
</table>

Colquitt and Simmering (1998) investigated conscientiousness and goal orientation in relation to motivation in order to determine how these traits influence a trainee throughout the training process especially when the trainee experiences early difficulties. The authors define goal orientation as: “…a relatively stable dispositional variable that assumes two forms: (a) a learning orientation in which increasing competence by developing new skills is the focus and (b) a performance orientation in which demonstrating competence by meeting normative-based standards is deemed critical”(p.657). The study occurred within the context of a six-week academic course. The rationale for this setting was to provide the researchers more opportunity through a more comprehensive longitudinal process than the researchers had found in previous studies. Each trainee received a difficult but obtainable goal similar to an employee assignment with a training program. At two specific time periods, each trainee received performance-related feedback. Feedback was given at the start of the training and approximately halfway through the course. The researchers utilized Vroom’s expectancy theory as the theoretical framework with the assertion that trainees will have high motivational levels to learn for two reasons: (1) Trainees see a relationship between effort and actual learning progression (expectancy), and (2)
outcomes attained are valued (valence). Within this framework, conscientiousness and goal orientation were theorized to have a positive relationship to motivation to learn at both feedback periods through the mechanisms of expectancy and valence.

The Colquitt and Simmering study consisted of 103 undergraduate students enrolled in two sections of a six-week management course. To ensure integrity within the data collection process, each author taught one course section. Each author served as the experimenter for the other author’s class. This allowed for the data collection and data access to be controlled by the other author as well as each author did not discuss the study with their own students. The performance goal for each student was based on the student’s existing grade point average after the first week of class with the goal being set for a grade point increase of .25 points. Each student received a goal performance statement at the start of the second class period. Eight students with a grade point average of 3.76 or higher were not factored in the study since a .25 increase in score would push the student’s grade average over the 4.0 ceiling.

Students received two surveys within the course. The initial survey was administered at the halfway point and the second survey at the conclusion of the course. The survey consisted of a compilation of segments of previously-published surveys in the areas of motivation to learn, expectancy, valence, conscientiousness, and goal orientation. Student feedback on performance was achieved through two course examinations administered at the halfway point and at the conclusion of the course. Completion of the surveys was voluntary, but completion of the exams was required. The means, standard deviations and zero-order intercorrelations of all variables were established. Colquitt and Simmering then classified the students into positive and negative trait patterns. A high learning, high conscientiousness was positive and a low learning, low conscientiousness was negative, and expressed the correlation between this pattern and motivation to learn using a binomial effects size display. In comparison, students with a positive pattern were 38% more likely to be motivated before feedback and 40% more likely to be motivated after feedback than negative pattern students. Furthermore, positive pattern students were 30% more likely to perform well in the first exam and 28% more likely to perform well on the second exam. Learning orientation and conscientiousness were shown to have a positive relationship with motivation to learn. Students that exhibited higher motivational levels also exhibited
the personality variables of learning orientation and conscientiousness, both initially and following feedback, during the learning process. Furthermore, placing Expectancy x Valence framework in a more established theoretical context, Colquitt and Simmering demonstrated that the relationships of conscientiousness and motivation to learn were partially mediated by expectancy and valence. Colquitt and Simmering note that: “…individuals who were reliable, self-disciplined, and persevering were more likely to perceive a link between effort and performance and were more likely to value high performance levels’ (p.663). Likewise learning orientation was demonstrated to have a positive relationship with motivation to learn with individuals exhibiting both high learning orientation and higher expectancy and valence levels.

This study is among the first to demonstrate a significant link between goal orientation, expectancy and valence. However, a limitation of this study must be noted. The study sample was within the context of an academic classroom setting and not within an organizational-employee training environment. While the authors do note this limitation, they state the belief that the underlying aspects of the study do apply to an employee training environment for the basic personality traits of conscientiousness and goal orientation are applicable within various settings. However, this will need to be established through additional studies before a generalization can be sustained. In analysis of this study, it is possible to draw a causal link that an individual’s level of motivation to learn is based upon and fueled by certain values assigned to it by the trainee as demonstrated in Vroom’s Expectancy Theory (1964). The value and the associated motivation are expressed in the action of learning and transfer by the trainee. If the trainee places a level of value upon the training, then it is possible to establish a rational connection between this value and the level of motivation. For example, if a trainee perceives considerable value with a training program then it is likely to surmise that the trainee will exhibit a significant level of motivation to learn and transfer learning that will be further expressed with some level of improved performance. This improved performance fulfills the value for the trainee.

Jesus Salgado (1997) in *The Five Factor Model in Personality and Job Performance in the European Community*, conducted a meta-analysis of studies performed in
Europe to ascertain the Five Factor Model as valid predictor of job performance. A total of 36 studies were identified from a pool of 105. Selection was based on studies that addressed only business organizations within European countries with only citizens of European countries as participants within the study. Non-European countries, non-European citizens, military, or studies that only reported significant correlations were excluded from the analysis. The studies selected did not appear in any previous meta-analysis at the time of the research. The goal of the researcher was to identify all published and unpublished studies that reported relational statistics or data from which relational statistics could be calculated. The analysis procedure consisted of two researchers, the author and a fellow researcher with considerable experience in the field of psychology. Utilizing the classification process established by Barrick and Mount (1991) in a previous similar meta-analysis of studies conducted in the United States and Canada, Salgado and his fellow researcher independently classified each selected study. After completion of this process, any discrepancies, which were less than 10%, were discussed by both researchers until an agreement was reached.

The results of the meta-analysis indicate that the factors of Conscientiousness and Emotional Stability are valid predictors related to job performance with Openness and Agreeableness in relation to training. Of the findings, Salgado noted that Openness may be the most relevant predictor toward training based on the willingness of the individual to experience the training event and possibly transfer. This finding is similar to Barrick and Mount’s findings (1991) of Openness in relation to training. Barrick and Mount noted: “This dimension is expected to be related to training proficiency because it assesses personal characteristics such as curious, broadminded, cultured, and intelligent, which are attributes associated with positive attitudes toward learning experiences. We believe that such individuals are more likely to be motivated to learn upon entry into the training program and, consequently, are more likely to benefit from the training” (p.15). Openness, Openness to Change or Intellect (Digman 1990) was a factor in the consideration of an individual trainee’s willingness to train and transfer in both Salgado’s analysis and Barrick and Mount’s analysis.

While Salgado’s findings validate the concept that an individual who has a level of openness will be more accepting of training and possibly transfer, the study has
limitations. The study, by design, examined results in relation to job performance and the Five Factor model. It does not delve into the various related aspects that possibly influence or restrict an individual’s motivation to transfer such as work conditions and supervisor support. Salgado’s findings, however, do provide further support that certain personality factors provide greater possibilities in fostering training acceptance and possible transfer. This is further substantiated in the literature by Kanfer and Kantrowitz (2002) who noted that Openness has been demonstrated through at least 11 meta-analytic studies as a contributing factor in personality-training relationship. Kanfer and Kantrowitz state that: “Although research evidence does not support the notion that openness to experience makes a substantial contribution to prediction of variance in job performance, meta-analytic research on personality–training outcome relations suggests that openness to experience does provide strong predictive validity in learning/training environments. In these environments, where skill acquisition typically involves volitional effort and intrinsic motivation, an individual’s propensity for new learning is positively related to training outcomes” (p 35).

While Openness is considered a factor of training and transfer, it is not clear in the literature the extent or level of Openness required to create sufficient motivational desire within an individual (Herold et al. 2002). Open to change as a trait suggests that a trainee with a level of openness will approach training and transfer with a greater desire or motivation to transfer than someone with less openness, nonetheless in viewing transfer as a comprehensive process involving the trainee, training event, and the work environment, it is reasonable to conclude that openness is valued in relation to transfer but not a guarantee that transfer will always occur. This does not connote a limitation in viewing FFM in general and Openness in particular as well as Cognition as important factors in relation training and transfer. The importance of personality and the role of personality in transfer appear in the literature as significant factors (LePine, et al. 2000; Colquitt & Simmering 1998; Herold et al. 2002). Personality is the driver of a person’s behavior and social interaction (Hogan, et al. 1996); therefore, it is logical to include it as a factor in the learning and transfer process which is substantiated by previous research (Callahan & McCollum 2001; Holton 2005). The personality of an individual is a variable that has an impact on learning and transfer and is a critical part of assessing the likelihood of transfer (Antonacopoulou 2001; Holton 2004, 2005) as Merriam and Leahy (2005, p. 7) note: “There is strong
evidence to suggest that those variables found within individual learners can have a profound impact upon the transfer process. Apparently those trainees with positive expectations are very likely to attempt to transfer learning from a training setting to their work environment. Conversely, those employees who lack the motivation and who perceive the training in a negative light are more likely to make little or no effort to attempt to transfer.”

The personality traits of Goal Orientation, Locus of Control, and Self-efficacy have also received considerable attention in the literature (Holton et al. 2007; Nair 2007; Tracey & Tews 2005).

2.8.3 Goal Orientation

Goal Orientation is defined as: “…an orientation towards developing or demonstrating one’s ability (VandeWalle & Cummings 1997, p, 397).” Goal orientation originates from an educational study of children when Dweck and Leggett (1988) sought to understand motivation and personality in relation to behavior and underlying psychological processes in children. The focus of the research was to understand why children of relatively equal ability would demonstrate significant performance differences in response to the same challenge. Dweck and Leggett proposed that individual children will create a framework to interpret and respond to events. This framework is based on an individual’s self-conception which in turn denotes certain behavioral and motivational responses when a situation is encountered. The goal, therefore, is the expressed aim or action of the individual based upon this framework (Latham, Locke, & Fassina 2002). In other words, the self-conceptual framework instills a pattern of behavior which is either learning oriented or performance oriented. While Dweck and Leggett’s study involved children, goal orientation has been exhibited in adult behavior as well (Brunson & Matthews 1981; Ford et al. 1998; Colquitt & Simmering 1998).

Dweck and Leggett (1988) theorized two classes of goals: performance goals and learning goals. Performance Goal Orientation is a description of individuals concerned with gaining favorable judgments for their abilities. In other words, an individual will select tasks or goals that can easily be mastered in order to receive
praise from others for their success (Latham, et al. 2002). Learning Goal Orientation or Mastery Orientation (Ford et al. 1998) describes individuals concerned with increasing their competence or acquiring new knowledge (Locke & Latham 2006). An individual’s selection of either goal orientation is based on personal motivation (Latham, Locke, & Fassina 2002; Herold et al. 2002). This motivation is based on the level of openness or avoidance to the situation. VandeWalle and Cummings (1997) assert that the value of goal orientation is in the understanding of how individuals assess and respond to achievement situations. The individual’s goal preference within goal orientation is a predictor of behavior patterns (Colquitt & Simmering 1998). This is established in Dweck and Leggett’s (1988) study that attributes goal orientation to how an individual perceives their own intellectual ability. Learning orientation perceives ability as incremental. Cognitive ability is pliable and therefore can be developed through learning and experience with: “…effort and ability is viewed as positively related (Dweck & Leggett 1988, p. 258)” which is similar to Noe and Schmitt’s findings related to motivation of school administrators. Ability is fixed and uncontrollable (VandeWalle & Cummings 1997). In other words, performance oriented individuals will view an achievement situation as a measurement of ability and this creates a level of fear of failure. The behavioral pattern will be to avoid the situation to lessen the fear (Dweck & Leggett 1988).

Subsequently, the goal orientation of the individual will in turn influence how the individual views effort (VandeWalle & Cummings 1997). A learning-goal individual will pursue an adaptive response pattern to a situation. This will include engaging a mindset of exploring and seeking possible solutions (Colquitt & Simmering 1998; VandeWalle & Cummings 1997). The motivational aspect is to view the task as a challenge that will lead to further personal development (Dweck & Leggett 1988). Performance-goal individuals will pursue a maladaptive approach to a task. This includes a strong desire to withdraw from the task, make negative attributions regarding ability, and describe a decrease in personal interest or value in completion of the task (VandeWalle & Cummings 1997).

In addition to Colquitt and Simmering’s study, Ford et al. (1998) examined the relationship between goal orientation, metacognitive activity, and practice strategies within a training environment that allows the trainee to control and choose their
practice exercises and learning progression. The authors theorized that control of the learning tasks by the trainee will facilitate greater knowledge attainment and transfer of complex tasks. As part of this study, a theoretical model was created to illustrate the relationship between training, goal orientation, and metacognition. The working theory is that the goal orientation of the trainee will dictate the learning strategy used during training. A learning-oriented individual will utilize a learning strategy that will positively relate to metacognitive activity as well as openness to the learning process. In contrast, a performance-oriented individual will approach the task with a level of efficiency using a learning strategy that will achieve the end result with a limited amount of learning effort. Additionally, the performance-oriented individual will negatively relate to metacognitive activity. The study methodology consisted of 93 undergraduate students enrolled in a university psychology course. The participants were administered a computer-simulated task as a naval radar operator. The task of the naval radar operator was to track various naval targets and decide if the target was hostile or friendly in the shortest amount of time possible and dictate certain responses. The responses would either allow the ship to continue safely and respond to threats effectively or, if the participant was unable to do so, points would be deducted. To prepare for this task, each participant was allowed to select training scenarios as preparation. These task and training scenarios produced considerable stress in the participants.

The procedure consisted of a two-day training session. Throughout the first day of training, participants could elect to receive feedback using a feedback option in the software. At the conclusion on the first day of training, participants had to demonstrate their ability to perform the computer-simulated task as a naval radar operator in a ten-minute trial. Two additional task components were introduced on the second day of training. The first task was cue ambiguity, the process of information evaluation in reference to the five-point decision process to ascertain possibly threat. Each participant was able to practice this process through self-selection of training scenarios that represented three levels of various intensity and complexity. Penalty circles, radii of distance expressed in nautical miles, were introduced as the second task component. Targets entering a penalty circle must be pre-assessed as either a threat or a friendly unit. A total of three penalty circles in various sizes could exist at one time. A threat entering a penalty circle would result in a deduction in points for
the participant. Each participant was again able to practice this process through self-selection of training scenarios that represented three levels (low, medium, high) of various intensity and complexity. Participants could select up to a total of 15 scenarios to practice these tasks. Each scenario represented a varying degree of complexity. Each participant was presented a matrix to allow them to select and order the training as they preferred.

At the conclusion of the training, each participant was given 12 five-minute practice trials followed by completion of a survey instrument and then a twelve-minute transfer task was completed. The transfer task contained a higher level of intensity and complexity than in all of the training exercises. A forty-five question survey with questions related to goal orientation, the training activity, knowledge related to the tasks, metacognition, self-efficacy, overall performance during training, and the transfer task was utilized. Additional training progression was tracked to evaluate if the participant pursued a learning path of higher complexity. Finally, the transfer task was analyzed based on performance. Performance was assessed two ways: on a score system using the penalty circles and if the participant correctly identified a target using the five-point decision process. Finally the researchers developed a conceptual model to represent the training and selection process of the participants. This model was constructed using a four-part structure of:

- Individual differences as expressed in learning or performance orientation.
- Learning Strategies identified as Metacognition, Identical Elements, and Activity Level.
- Learning Outcomes identified as Knowledge, Final Training Performance, and Self-Efficacy.
- Transfer expressed as overall performance.

The conceptual model is designed as a progression model. The progression builds from Individual Differences in which an individual selects a learning strategy with a causal link toward a type of performance outcome. The goal orientation of the individual provides a parameter of action in how the individual learns. Therefore, it is hypothesized that a relationship will be demonstrated through specific variables in the model and with one of the forms of goal orientation. To determine the model and
these relationships, a hierarchical regression analysis was chosen for the data analysis. Variables were entered into the regression equation on the basis of their temporal ordering in the model.

The results indicate that a learning orientation and a performance orientation are separate constructs as theorized. Furthermore, the relationship between each orientation construct was differentially related to the other constructs in the conceptual model. The analysis consisted of first examining the influence of the goal orientation upon learning strategies, then examining the level of influence of goal orientation and learning strategies on the three learning outcomes. Finally, influence of goal orientation, learning strategies, and three learning outcomes on transfer performance were examined. The relationships that were statistically significant were learning orientation which was positively related to metacognition but neither learning orientation nor performance orientation was related to identical elements or activity level. The results indicate that metacognition was positively related to knowledge and knowledge to activity level as well as a positive relationship between metacognition and activity level with transfer performance. The final area of significance was found between goal orientation and self-efficacy. Learning orientation was positively related to self-efficacy, whereas performance orientation was negatively related to self-efficacy. In other words, this study indicates that learning-oriented individuals are more often associated with positive learning outcomes in comparison to performance-oriented individuals. Performance-oriented individuals tend to have more association with negative or neutral learning outcomes.

The significance of this study is the relational indication between the goal orientation constructs and the specific constructs represented in the study’s conceptual model. The ability of an individual to learn and transfer is to a degree related to personality and how an individual relates to their surroundings as demonstrated in orientation and subsequent learning behavior. The ability of an individual to understand content is not solely directed by cognitive ability alone. Personality is a factor for consideration in how a person learns during training. In this study, individuals that possessed a learning orientation typically approached learning with greater metacognition activity in comparison to individuals using a performance orientation. The approach to learning is similar to the findings of Noe and Schmitt (1986) and Colquitt and
Simmering (1998) in relation to goal orientation. A person approaches learning with a combination of cognitive-personality attributes that will influence how they behave, approach learning, and ultimately transfer.

Another aspect related to learning gained from this study is the nature of self-selection of learning strategies by an individual. The ability to select a learning progression based on knowledge of personal abilities and limitations is positive in how training can be developed to maximize a trainee’s learning experience. However, this trait is more associated with individuals with high learning orientation and metacognitive ability.

As evidenced from these studies, there are issues and questions that still remain in relation to goal orientation in general and specifically related to this study. For example, performance oriented individuals did not receive normative feedback during the training. If the instructor used a more outlined feedback system during the training portion, would the results of the performance-oriented individual in comparison to the learning oriented individual remain as statistically different as this study determined. Furthermore, general questions related to goal orientation remain such as whether a goal orientation changes over time and if so, how is that achieved. Is goal orientation a stable trait or one that can be developed? What is goal orientation in relation to content mastery for an individual? If someone possesses considerable skill and knowledge regarding a certain concept, will this influence goal orientation in learning similar fields of study? While these additional questions and possible further research remain, this study provides expanded insight into goal orientation, metacognitive activity, learning strategies, and how these concepts relate to training and transfer.

2.8.4 Locus of Control

Locus of Control, which is built on the theoretical framework of Social Learning Theory, has also received considerable attention in training transfer research (Rotter 1960; 1966). The premise of Social Learning Theory is: “…that the potential for a behavior to occur in any specific psychological situation is a function of the expectancy that the behavior will lead to a particular reinforcement in that situation and the value of that reinforcement (Rotter 1975 p. 57). Locus of Control is a
behavioral viewpoint maintained by an individual in relation to how they perceive situations and reinforcement (Marks 1998). The conceptual nature of Locus of Control is to provide a theoretical explanation for the tendency of some individuals not to respond as predicted to a reward or punishment (Spector 1982). This failure to respond is attributed to a generalized relational expectancy between an individual’s own behavior, efforts, and reinforcement (Rotter 1965). The difference in viewpoint is either an internal locus of control or an external locus of control (Rotter 1966). An individual with an internal locus of control will maintain a belief that individual outcomes are related to their behavior or personal investment (Rotter 1966; Marks 1998). Conversely, an individual with an external locus of control will maintain a belief that individual outcomes are not related to individual behavior but to life events or external forces beyond their control.

In relation to business organizations, Miller, et al (1982) found that business executives that possessed an internal locus of control were more innovative, risk-oriented in entering new markets, and overall more dynamic in approach to business strategy and achievement of higher levels of organizational performance than business executives that possessed an external locus of control. In relation to training, Chang and Ho (2009) found that Locus of Control is associated with learning motivation. In training situations where the trainee possessed an internal locus of control, the trainee expressed greater motivation to learn than in training settings where the trainee could maintain control over the amount of training content delivered. In training situations controlled by an instructor, trainees with an external locus of control expressed greater satisfaction in learning and transfer.

Tziner, Haccoun, and Kadish (1991) studied training effectiveness and transfer specifically examining relapse prevention methods, trainee locus of control, and work environment support. The working hypothesis of this study consisted of three parts. First, trainees undergoing relapse prevention training would transfer more successfully than those who do not receive this training. Second, trainees with higher levels of internal locus of control and a positive perception of the work environment would have a correspondingly higher motivation to transfer compared to trainees with an external locus of control and a negative perception of the work environment. Third,
trainees with higher levels of internal locus of control that undergo relapse prevention training would transfer more successfully than those who do not receive this training.

The study methodology comprised a sample consisting of 81 persons (39 men and 42 women) all members of the Israeli Defense Force. The age range of this sample was from 19 to 23 years old who had been in the military an average of 21 months, and held a diverse number of positions within the military. Employing a random selection process, forty-five participants were selected to attend a post-training relapse prevention module while the remaining thirty-six, as a control group, did not attend this module. Each group was assigned to attend a two-week training program. To avoid possible control group/test group trainee interaction, each group attended training in a different location. The test group also attended a two-hour relapse prevention module following the training program. To assess the participants, Tziner, Haccoun, and Kadish developed nine Likert-format questionnaires from previously-published studies. The questionnaires were grouped into three groups: trainee, instructor, and supervisor. The trainee group consisted of evaluations from the trainees’ perspective in the areas of locus of control, work environment, motivation to transfer, training reaction, content mastery from the trainee perspective, and trainee self-report related to using transfer strategies. The remaining questionnaires evaluated the trainees’ post-training skill usage and the trainees’ use of transfer strategies from the supervisors’ perspectives. A questionnaire was then utilized to evaluate trainee content mastery from an instructor’s perspective. The locus of control and work environment questionnaires were administered after the first week of training. The trainee motivation to transfer, training reaction and content mastery from the trainee perspective questionnaires as well as the instructor questionnaires were administered following the training session to both trainee groups. Ten weeks later the supervisor and the trainee self-report transfer strategies questionnaires were administered and returned to the researchers by mail with all groups reporting 100% participation. The statistical analysis and results indicated that the trainees within the test group that also exhibited higher levels of internal locus of control and positive supervisor support demonstrated greater retained knowledge in comparison to the control group. However, locus of control as a single factor did not show any statistical significance within either group but only in addition or attached to positive work environment and relapse prevention. While this indication provides some support to the literature that
locus of control has a level of effect within transfer, it does not provide enough evidence that locus of control is a significant factor separately. While the study did provide evidence that relapse prevention training did show improved results in transferring for the test group, supervisor support may have been a higher factor in transfer as well. The limitations of this study center on the test group and the combination of relapse training, locus of control of the test group and the positive work environment. If the study had included a negative work environment as well, then exploration of locus of control and how an individual with a high level of internal locus of control functions in a negative work environment would have been beneficial in understanding locus of control in transfer. While this study found individuals with certain personality traits along with internal locus of control and high achievement needs typically have higher levels of transfer, it is difficult to determine if locus of control is a significant contributing factor toward positive transfer or a supporting element in certain situations. Further research is needed to see if this is true in work environments beyond the confines of this study.

2.8.5 Self-Efficacy

Self-efficacy is considered a significant aspect for motivation, transfer, and performance (Sonnentag & Frese 2002). Holton, et al (2007, p. 393) state that self-efficacy is “…essentially the trainee’s belief that he or she will be able to use the learned material on the job to improve performance.” Khasaenh (2004) and Sonnentag (2002) note that self-efficacy is demonstrated to have a positive relationship to individual performance improvement, motivation to transfer, and as a predictor of performance in interpersonal skills training. Self-efficacy is defined by Thayer and Teachout (1995, p. 5) as “…one’s expectation or confidence in performing a task.” In relation to post–training, knowledge gained through the training can increase the trainee’s level of self-efficacy in performance of job-related tasks. Likewise, confidence gained through training can address future expectations (pre-training) of the individual. Therefore, self-efficacy augments (pre-training) learning, and learning augments (post-training) self-efficacy and both impact transfer. The final distinction presented by Thayer and Teachout is the direct link between transfer and results or job performance. This indicator is critical for transfer. If effective training occurs and various climate transfer variables are positive for
transfer, then a level of performance change should transpire. The exact type of performance change would be indicative of the training. For example, a new production process should produce an increase in efficiency and reduce waste.

2.8.6 Job Attitude

Job attitude is the construct related to employee personal satisfaction and connection with the organization. Employees with a positive attitude toward their organization should have a higher level of motivation to improve individual performance for the benefit of the organization. While research on job attitude in relation to transfer is limited, the research that has occurred shows a correlation between job attitude and transfer motivation. Additional research is necessary to expand Holton’s construct and its application to transfer theory.

2.9 Motivation to Learn

Motivation to learn is the “…desire on the part of trainees to learn the training material (Colquitt, et al. 2000a, p. 681).” Noe and Schmitt (1986) conducted research to evaluate training effectiveness in relation to trainees’ attitudes toward motivation to learn and motivation to transfer. The researchers surveyed and interviewed 60 elementary and secondary educators in the United States involved in a two-day training event in principalship administrative position duties. The training included additional follow-up interviews and scheduled mentoring sessions. Of the 60 participants in the training, 29 were males and 31 were females with 40 of the participants holding an administrative position and 20 participants holding assistant principal positions. To determine training effectiveness, the authors designed the School Administrative Descriptive Survey (SADS). This survey instrument was a combination of scales previously used in other research studies and scales developed specifically for this study. The SADS consisted of a five-point Likert scale with locus of control, job involvement and trainee search behavior using previously established scales with slight word modifications to reflect school administrator terminology. To investigate reaction to self-assessment, learning motivation, and training expectancies, the authors developed scales using 7, 15, and 8 item questions respectively. The measurement procedure consisted of each participant completing the SADS prior to
the conclusion of the training program with all 60 participants submitting a completed survey. Following the training, the SADS was administered to the participant’s immediate supervisor and two educators and two staff members who interact with the participant on a daily basis for a total of 300 SADS completed by non-training participants of the total of 360 SADS completed. Using a path-analytic procedure, the study found several important causal relationships that exist within transfer as motivational factors. The factors identified as statistically significant were job involvement, career planning, locus of control, and reaction to self-assessment. The study found a direct correlation between motivation to learn and motivation to transfer and motivational factors of the trainee. Those trainees that expressed a strong desire to advance and succeed within their job duties similarly expressed a high likelihood to effectively transfer learning into improved job performance. The researchers found links between the factors identified; however, they also found a separation to some degree between job involvement-career planning and locus of control-reaction to self-assessment. Depending on locus of control and whether an individual’s attributions of work outcomes are internally or externally realized, an individual with an internal locus of control feels he or she has a level of control over work outcomes versus someone with an external locus of control who views work outcomes as beyond his or her control. The authors found that those individuals with an internal locus of control will engage in exploratory behavior directly based on an increased motivation to learn. Likewise, individuals with a positive reaction to self-assessment of skills have a higher degree of motivation to address and improve skills. The greater the personal drive for the individual to improve, the greater motivation for the trainee to learn apart from any attachment to their employer. While self-assessment and locus of control are directly linked to job involvement and career planning, a separation also indicates that an individual’s predisposition to control the environment is independent of job involvement and career planning. Job involvement and career planning factors are involved in the motivational aspects of learning for an individual but not to the extent that the need to control becomes an internal drive of the individual to succeed. In other words, as the Noe-Schmitt research suggests, trainees’ predispositions to control their environment are independent of job involvement and career planning and are therefore based on personal drive to succeed, not attachment to a particular employer and a career path. While all the factors identified can interact together as motivational factors, this study indicated that some trainee’s connection to
an employer will have a motivational influence while other trainees do not have the same level of connection.

A connection or lack of connection to an employer is one aspect that Noe and Schmitt found worth noting in relation to the interaction between learning, behavior, and performance. They found that learning did have a direct impact on performance; however, learning did not always have an impact on behavior. This relationship is indicative of the trainee’s approach to job involvement and career planning. If, for instance, the trainee understood the value of training toward career advancement, then the likelihood of a behavioral change is greater than those who did not have the same level of career planning. Similarly, job involvement has a significant impact on learning based on the level of psychological identification the trainee has toward the importance of work, individual self-image, and a connection to the employer. Thus, the motivational aspects of career planning and job involvement have an impact on learning and performance with possible impact on behavior. If a trainee believes that learning the presented materials will lead to a promotion, a salary increase, or elevated feelings of self-worth and satisfaction, then the associated motivation to learn and transfer will likewise increase. Because the trainee has a level of connection with the employer and associated positive value in this relationship, a desire to learn to improve performance and behavior may occur. However if the trainee does not have a connection with the employer or an associated positive value in the relationship, the trainee may be motivated to learn and increase job performance but lack a desire to produce a behavioral change. Therefore, the value of the Noe-Schmitt (1986) study is the emphasis upon trainee motivation as a factor in transfer. This study did not take into account, however, the degree of motivation experienced by employees, both hourly and managerial, who believed they had little control over a situation because of extenuating circumstances such as an acquisition or merger which may not lead to promotion and may even lead to loss of jobs.

While the Noe-Schmitt (1986) study found motivational factors of the trainee as an influencer of transfer, a subsequent study by Holton (2004) uses the term “learner readiness” to denote trainee motivational factors, examining how the level of preparedness, both physically and psychologically, of the individual trainee prior to entering training influences transfer (Herold, et al. 2002; Bates & Holton 2004;
Holton 2004). An example of learner readiness would be trainees who received information as a preview of the training prior to attendance, and as a result, exhibited an improved level of motivation to transfer in comparison to individuals that did not receive prior information (Baldwin & Magjuka 1991; Khasawneh 2004). The role of the trainee in the transfer process is characterized as an active role of learning toward application (Khasawneh, 2004). The importance of the trainee and how the individual trainee values training and transfer is considered to be a motivational factor. Khasawneh, et al (2006) examined a broad range of employees to determine what factors influenced their ability and motivation to transfer. They studied 450 employees from 28 different public and private sector organizations within the country of Jordan. The survey instrument utilized in the study was the Learning Transfer Survey Instrument (LTSI). The LTSI was originally developed in English and required translation into Arabic. Once the Arabic translation was completed, the instrument was then back-translated from Arabic to English by two separate translators that also compared item-by-item discussing any disagreements or discrepancies until a consensus was reached. To finalize the translated instrument, a subjective evaluation was conducted by one of the original authors of the LTSI to ensure the translated instrument corresponded with the English version. Areas of concern were put through the translation process described above until the author was satisfied that the translated instrument was equitant in meaning. An objective evaluation followed with 19 native English speaking Human Resources professionals and graduate students comparing the original and the translated LTSI rating the functional equivalence using a seven-point Likert scale. No significant differences were reported. A final pilot test was conducted with 12 Jordanian employees to collect feedback and ensure the instrument was suitable in content and usage. No substantial changes were given by this group.

To develop a heterogeneous sample and organizational mixture, a total of twenty-eight organizations were approached and agreed to participate. Each organization within the study had provided a level of employee training within the previous six months prior to the initial contact by the researchers. The initial sample consisted of 500 employees with 450 employees responding for a 90 percent response rate. Restrictions and limitations in employee access were required for both purposive sampling and convenient sampling. The Arabic LTSI was administered directly
following training or within six months of training. In addition, each participant was
asked to provide their age, gender, work experience in years, and educational level.
All responses were anonymous. The sample population was very nearly divided on
gender. Seventy-one percent were age 30 or older. Work experience contained a slight
majority of trainees employed in the private sector (61.8 percent) and predominately
between 4 and 10 years (42 percent) of work experience with 69.1 percent of
participants completing a bachelor’s degree. Multivariate analysis of variance
(MANOVA) was utilized to determine which items differed across trainee, training
design/event, and organizational factors. The scale scores of the LTSI were treated as
the dependent variables while the different levels of categorical variables of age,
gender, work experience in years, and educational level were treated as the
independent variables. In situations where significant differences among levels of the
independent variables were detected, univariate analysis of variance (ANOVA) was
utilized and post-hoc comparisons utilizing Tukey’s test at an alpha level of 0.05. The
study results indicated that individual trainee preference to transfer is a result of how
the trainee places value on the knowledge gained in training as well as how the trainee
views how the organization will value a performance change or improvement.
Individuals with lower levels of education and training typically placed a higher value
on training and a greater desire to effective transfer than individuals with higher levels
of education. The authors theorized that this is due to the employees’ or trainees’
belief that learning and transfer will result in improved performance leading to job
promotion or salary increase. The findings also indicated that many of the trainees
that expressed a desire to transfer also noted highly-supportive supervisors and
organizations. Therefore, it is important to consider the influence of the organization
as a contributing factor on how trainees value training and transfer.

In comparison to the Noe-Schmitt study which determined that the trainee may or
may not value their relationship with the employer, this study indicates that the trainee
group appears to value the training as well as value their organizational relationship.
One aspect that this study makes clear is that the role of the trainee, the role of the
organization, and the role of the training event or design all contribute to effective
transfer; however, the exact nature of how these three areas interrelate or distract from
transfer was not clear in this study. For example, some of the data indicates the
possibility that trainees with a high level of education may not value transfer due to
their job level or job complexities which may make transfer more difficult. These findings further support the findings of Noe and Schmitt (1986) and Baldwin and Ford (1988) that expectancy theory is a motivational factor for the individual to “want” to transfer. If transfer produces some benefit for the trainee, then the trainee is more likely to transfer. Further research would need to explore all contributing factors

A second aspect found in this research is that the value placed on training and subsequent transfer by the trainee is directly related to the type of training received. Technical training appeared to have significantly more positive transfer perceptions by the trainee in comparison to other forms of training. Technical training may have a more direct job application for the trainee in relation to increased job performance and therefore the motivation to transfer is higher. Training of a more theoretical or relational nature may not have as an apparent means to impact performance as more practical or direct job relevant technical training. Level of employee value was also apparent in relation to voluntary training over mandatory training. Employees receiving voluntary training expressed higher levels for motivation to transfer compared to mandatory training. Initially this finding was surprising to the researchers based on the premise that mandatory training would be more aligned to organizational goals and therefore motivation to transfer would likewise be higher. However, value of training may be more aligned to career choice or opportunity, and therefore an employee given the freedom to self-select training may do so based on personal needs.

Lim and Morris (2006, p. 87) expanded this definition to include the internal and/or external motivational factors of the individual. These authors define motivation to learn as “…a trainee’s intrinsic or extrinsic desire to achieve a high degree of learning.” In both definitions, motivation is shaped by personality traits, job attitudes, and readiness of an individual to contribute directly to the level of learning motivation (Cheng 2000; Holton 2005).

Motivation to learn was found to directly influence the outcome of learning. In one study, employees with higher levels of motivation to learn exhibited higher levels of learning and transfer than employees with low or no learning motivation (Tziner, et al. 2007). In another study, motivation to learn was positively correlated to an
individual’s improvement in declarative knowledge and skill acquisition. Likewise, motivation to learn was associated with individual reaction to learning, effective transfer and as a predictor in the level of post-training self-efficacy (Colquitt, et al. 2000a). As demonstrated in these studies, motivation to learn is a significant precursor for effective learning and a crucial mechanism through which other elements impact learning and ultimately individual performance (Mathieu & Martineau 1997).

Previous studies examined trainee motivational factors and either have found similar supporting evidence or have expounded in greater depth on the conceptual dynamics associated with the individual trainee (Holton 2005; Ford, et al. 1998; Bell & Kozlowski 2002; Tziner, et al. 2007). These findings further substantiated other studies (Baldwin & Magjuka, 1991; Chen, 2003; Clark, et al. 1998; Holton, et al. 1998; Mathieu, et al. 1992; & Yammill & McLean 2001) that organizational type and degree of choice in training attendance can have an impact on how employees perceive training transfer. In addition, employees with more work experience were more highly motivated to transfer and more open to change. These studies illustrate that training and transfer cannot be viewed in isolation from other possible factors of influence (Holton 2004). The ability to transfer is not an isolated event but a compilation of factors that produce various levels of positive or negative influence. The relational impact of mandatory training versus voluntary training needs to be explored further.

2.10 Motivation to Transfer

Building on motivation to learn is motivation to transfer. Motivation to transfer is described as direction, intensity, and persistence of effort toward utilizing knowledge and skills learned in the workplace (Devos, et al. 2007; Velada, et al. 2009)." Motivation to transfer provides a level of influence on motivation to learn, however it is necessary to draw out the inference that motivation to learn is more closely related to individually-specific elements and associated influences while motivation to transfer is more closely associated with job specific elements and organizational directed outcomes. In other words, motivation to learn deals with the employee as a learner and is directed toward aspects of learning by the individual while motivation
to transfer deals with employees in their job roles and is directed toward job performance changes.

After training, the individual, depending on various motivational factors, is motivated to transfer (Holton 1996; Tannenbaum 1997; Colquitt, et al. 2000a). The outcome of motivation to learn is considered necessary prior to training to compel motivation to transfer (Lim & Morris 2006). However motivation to transfer is also influenced by the transfer climate, job attitude, intervention fulfillment and return on investment (Holton 1996; 2005; Bates & Holton 2004; Machin 2002). Motivation to transfer is a significant element in the transfer process, for it is a key variable by its direct connection to individual performance (Holton 2005; Hawley & Barnard 2005).

Motivation to transfer knowledge is to a large extent shaped by how the employee values the knowledge gained in the training (Pidd 2004). This is directly related to intervention fulfillment and job attitude. Also the opportunity for the employee to use the newly-gained knowledge in relation to his or her job is a significant influencing aspect for motivation to transfer (Huczynski & Lewis 1979; Tziner, et al. 1991; Saks & Ashforth 1997; Yamnill & McLean 2001; Merriam & Leahy 2005).

Holton theorized the relationship between learning and transfer to be “motivation to improve work through learning”, which he referred to as MIWTL. The fundamental change is the combining of motivation to learn and motivation to transfer into this new construct (Holton 2005). The rationale behind this change is to provide a greater emphasis on the relationship for motivation that is driven by a desire to utilize learning to improve work-related outcomes (MIWTL) in comparison to simply having a high level of motivation to learn. Naquin and Holton (2002, p. 358) postulate that MIWTL provides greater clarity on the significance of motivation in work settings by stating “this construct posits that an individual’s MTIWL is a function of motivation to train and motivation to transfer. Further, it should more completely capture the motivational influences leading to improved work outcomes. Thus, the MTIWL is potentially a more powerful motivational construct because it incorporates both dimensions of motivation critical to achieving HRD outcomes.”
Holton (2005) theorizes that individuals with a high level of MIWTL need different learning support structures and applications than individuals with only a high motivation to learn which should be evident in higher levels or rates of transfer. This new construct, however, has not been thoroughly tested and validated with the exception of initial construct validity using confirmatory factor analysis (Naquin & Holton 2002). Holton (2005) issues the charge to encourage further research believing that the research that has occurred to establish motivation to learn and motivation to transfer will also hold true for MIWTL.

Conversely, Chiaburu and Lindsay (2008) evaluated motivation to learn and motivation to transfer and determined that these constructs should remain separate. This separation, according to the authors, is due to how certain secondary influences which will have a greater impact either directly or indirectly upon motivation to learn or motivation to transfer. Through their research, Chiaburu and Lindsay found that self-efficacy is more closely linked with motivation to learn. Individuals with a higher level of self-efficacy have a higher level of learning motivation than individuals with low to moderate self-efficacy levels. Instrumentality, which is defined as an individual’s belief that performing a specific behavior or task will lead to some desired outcome, is directly associated with motivation to transfer. While motivation to learn and motivation to transfer are linked for effective transfer, the former directly influences transfer through the latter. Chiaburu and Lindsay emphasize that these two constructs should remain as separate factors that remain closely linked. For the purpose of this study, Holton’s original model is presented as separate constructs of motivation to learn and motivation to transfer.

Motivation to learn and motivation to transfer, as found in the literature reviewed is either an individual or a combined construct (Holton 1996; 2005), and remains as primary indicators for effective learning and ultimately effective transfer (Noe & Schmitt 1986; Baldwin & Ford 1988; Brinkerhoff & Montesino 1995; Shoobridge 2002; Saks & Ashforth 1997; Tannenbaum 1997; Colquitt, et al. 2000a; Herold, et al. 2002; Salas & Cannon-Bowers 2001; Lim & Morris 2006). These motivational constructs and the influencing elements that create, shape, extend or restrict them, illustrate how they are both key facets in the motivational process that occurs within the individual as they experience learning in the progression of pre-training, in-
training, and post-training contexts. For this fundamental reason, motivation to learn and motivation to transfer are core components of effective transfer (Tannenbaum 1997; Naquin & Holton 2002; Park & Jacobs 2008).

The outcome of learning is influenced by the individual’s reaction or perception of training as well as experiential and cognitive abilities to learn in general (Antonacopoulou 2001; Yamnill & McLean 2001; Chiaburu & Lindsay 2008). Reaction to training is a summarization of an individual’s response to the training received through the filter of motivation to learn and personal ability (Baldwin & Ford 1988; Antonacopoulou 2001). In other words, the response to the training is based on emotional and cognitive factors as expressed in the construct motivation to learn and its associated secondary and related influences. The reaction of the individual is thus shaped by these influences. Correspondingly, this perception then contributes to the level of value placed upon the learning process by the individual (Saks & Ashforth 1997; McDonald 2001; Chen et al. 2000). As Baldwin & Ford, (1988, p. 92) explain “Perceptions—and therefore motivation—are affected by both individual and work-environment factors, which must be interpreted by an individual and translated into choices among various behavioral options.” If the individual has a positive reaction to the learning experience in addition to already possessing a strong motivation to learn, then this should translate into a change in the individual’s performance.

### 2.11 Learning and Motivation to Transfer

The relationship between motivation to transfer, motivation to learn, and learning provides a circular flow, building upon each other as part of a learning-motivational process (Merriam & Leahy 2005; Chiaburu & Lindsay 2008). This process is similar in concept to Tannenbaum’s “Continuous Learning Cycle”. According to Tannenbaum (1997), a correlation exists between motivation to learn, the learning experience, application of learning, and recognition. If all aspects of this correlation are positive for the individual, a positive reciprocal impact is created. The individual is motivated to continue to learn for various recognition factors reinforce the learning experience as positive thus building greater individual self-efficacy. New learning experiences will be sought out by the individual and will be well-received based on
past experiences. Tannenbaum also found that the opposite could occur if a negative outcome was experienced. The negative experience greatly reduces if not eliminates application that correlates into performance change. The various positive and negative factors found in Tannenbaum’s study are reflected in the motivational and influencing elements of Holton’s model (Salas & Cannon-Bowers 2001).

Intervention fulfillment or training fulfillment describes the expectations and desires of the trainee that are fulfilled or met through the training received (Yamnill & McLean 2001). Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991) determined in their research that training fulfillment is a significant variable related to motivation to learn. Tannenbaum (1997, p. 440), in describing a positive learning environment, noted that “…trainees who perceive many situational constraints in their jobs enter training with lower motivation to learn and reduced self-efficacy…There is little incentive to learn new skills if one believes those skills cannot be applied.” Learner readiness is similar to intervention fulfillment for both concepts involve the trainee’s perception of value in relation to the training. Learner readiness influences an individual’s motivation to learn while intervention fulfillment influences an individual’s motivation to transfer (Merriam & Leahy 2005).

2.12 Training Design

Transfer Design consists of various elements and sub-elements that combine and influence directly the individual and his or her ability to introduce a change in performance. Transfer Design is defined as the degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirements (Chen 2003; Bates & Holton 2004; Holton 2005). Transfer design is a combination of instructional or training design, application, and training delivery with the intention of linking learning with individual performance (McDonald 2001; Godfrey 1999; Ruona, et al. 2002; Holton, et al. 2007). However the exact nature or style of design varies, as noted previously, as to how organizational cultures and structures are unique. In-training is a process which consists of activities related to training design (Baldwin & Ford 1988; Burke & Hutchins 2007) that promotes the cognitive facets of learning. This element is a primary focus of training design and includes learning activities such as goal setting,
relapse prevention, overlearning, fidelity, and principles-meaningfulness (Machin & Fogarty 2003). The emphasis is on the design of the learning activities which directly influences transfer, therefore, consideration of the construction and delivery of these activities is critical for transfer to occur (Colquitt, et al. 2000b). Holton (1996, p. 15) states that transfer designs will “…vary considerably depending on content, cultures, and other situational factors” and illustrates this uniqueness in the model through the influence of transfer design with the component “linkage to organizational goals”.

With the level of uniqueness found within organizations, Holton, et al (2000; 2005) stresses that for effective transfer design, the training must match the job requirements. If the effectiveness of transfer is a positive change in individual performance, then the content, design, and delivery of the training must correspond as directly as possible with the work environment and job requirements. The training must tie in with the requirements of the job (Holton 1996; 2005; Nijhoft & Streumer 1998; Hesketh & Ivancic 1999; Velada, et al. 2007). Within the literature, evidence suggests that training design has a direct connection to effective transfer (Herold, et al. 2002; Chen 2003; Merriam & Leahy 2005; Devos, et al. 2007; Williams 2008). For example, Baldwin (1992, as cited by Merriam & Leahy 2005) in examining the use of different instructional design methods in a business communication course, found that students demonstrated a greater ability to generalize the newly-acquired communication skills directly after the completion of the program as well as one month later. Likewise Sweller (1994), developer of the Cognitive Load Theory, found that an individual’s cognitive ability to process information is directly linked to the limitations of their working memory. According to Cognitive Load Theory, the human mind is limited in the amount of information it can receive at a given time. This limitation is designed to allow the mind not to become overwhelmed with information (Sweller 1994; Bannert 2002). This is important for both learning and instruction, as training becomes ineffective if the student is cognitively inundated with information. Structuring information into smaller “chunks” allows the human mind to transfer information into long-term memory as useful knowledge. In relation to training transfer, Cognitive Load Theory becomes an efficient means to ensure training design is effectively structured to engage cognitively the individual and maximize the learning process (Bannert 2002; Kirschner 2002; Paas, et al. 2003a).
In addition to Baldwin’s study and the work of Sweller and others on Cognitive Load, Kraiger, Salas, and Cannon-Bowers (1995) found in their research that students who received an advance organizer before undergoing a decision-making training program outperformed the control group in a decision-making simulation in post-training exercises. Finally, Devos et al (2007) surveyed 298 participants in six organizations in Belgium using the Learning Transfer Systems Inventory (LTSI). They discovered an association in the data analysis between transfer design and effective transfer. As illustrated in these research studies, the quality of the transfer design either creates a positive means toward transfer or significantly reduces the possibilities to transfer (Holton 2005).

The objective of training is directly related to the type of transfer and the type of transfer is directly related to transfer design (Holladay & Quinones 2003). Evaluation of the effectiveness of transfer requires understanding the various forms of transfer. Forms of transfer are related to how the training is designed and how this is correlated to the employee’s individual job requirements (Ford 1990). A universal definition of transfer is described as “…the effective and continuing application by learners—to their performance of jobs or other individual, organizational, or community responsibilities—of knowledge and skills gained in learning activities (Broad 1997, p. 2).” However, transfer should not be viewed only in this general sense but should also encompass different subcategories or forms of transfer in relation to the type and intended outcome of the training (Williams 2008).

2.13 Work Environment

The work setting is of primary importance (Noe and Schmitt 1986) for the social context found within an organizational culture is directly linked to the level of transfer. The perception of support from supervisors and peers as well as various task constraints either directly or indirectly impact the level of transfer. If the level of support from a supervisor is positive yet the employee perceives the organization as unwilling and unsupportive toward the newly-acquired skills, then the level of transfer and associated level of performance is inhibited. The work setting becomes a demotivational factor for the trainee. Post-training, the final process in this model, is concerned with self-efficacy organizational factors that create a climate for transfer.
Climate for transfer or environmental favorability/un-favorability is defined as “The trainee’s perceptions about characteristics of the work environment that influence the use of training content on the job (Colquitt, et al. 2000a, p. 681).” Thayer and Teachout (1995) consider this element as the other main focus of the model and divide this construct into two areas: Cues or Consequences. Cues or antecedents are culturally-based signals or methods that may enhance or inhibit transfer. For example, an employee who went through training learned a specific packaging process; however, other employees within the work environment perform the same process differently. This social cue will impact how the employee performs this job function. The employee may be inhibited and associated transfer is low due to fellow employees’ reactions to a different process.

Consequences are environmental-based controls that directly or indirectly impact training transfer by the level of influence upon the trainee. The model is divided into four elements of consequences: positive reinforcement, negative reinforcement, punishment, and extinction. Positive reinforcement are those actions designed as rewards that are contingent on the trainee’s correct use of the skills learned during the training (Machin, 2002). Negative reinforcements which can include punishment and extinction are actions that either reinforce the training by punishment such as supervisor disciplining an employee for failure to use a process taught in training (Thayer & Teachout 1995) or other associated forms of negative motivation (Machin 1999).

2.14 Transfer Climate

Individual performance is influenced directly by Learning, Motivation to Transfer, Transfer Design, and Training Climate. Transfer climate has a dual emphasis upon motivation to transfer as a secondary variable and individual performance as a primary variable. This is significant for the transfer climate can indirectly as well as directly impact learning. Transfer climate is defined as the “…situations and consequences that either inhibits or helps to facilitate the transfer of what has been learned in training into the job situation (Rouiller & Goldstein 1993, p. 379).” Another related definition is “…the individual or group perceptions and interpretations of the conditions and processes within an organization that promote or
inhibit transfer-of-learning efforts (Enos, et al. 2003, p. 372).” Within both definitions, transfer climate is the set of variables that denote the interplay between the organization and the trainee that will either encourage or discourage the trainee’s use of knowledge, skills, or abilities gained from training on the job (Cromwell & Kolb 2004). Transfer climate consists of work environment factors that Hawley and Barnard (2005) divided into work system factors and people factors. Work system factors are elements of the organization’s culture that will directly or indirectly affect transfer. This includes the level of open communication, resistance to change, the ability and opportunity to use training received on-the-job, and the relationship between organizational and training goals (Hawley & Barnard 2005; Lim & Morris 2006).

People factors, also considered a part of the culture, consist of supervisors, co-hourly employees, and peers (Williams 2008) which includes the relational influence of coaching-mentoring relationships in post-training situations (Huczynski & Lewis 1980; Decker 1982). Finally, the third people factor is the existence of personal outcomes experienced by the trainee for attending and transferring the newly-gained knowledge (Hawley & Barnard 2005; Lim & Morris 2006). Lim and Morris (2006) found from the various research studies conducted in this area that the people factors listed above, especially supervisor influence, have the greatest impact upon transfer. Lim (2000) found in relation to supervisor support that the three most crucial things a supervisor could do to promote positive transfer is: for the supervisor to support and discuss utilization of the new learning; for the supervisor to have familiarization and involvement with the training; and for the supervisor to provide positive feedback and encouragement in relation to the training.

Perryer and McShane (2008) found similar results related to manager and co-hourly employees influence which further confirm results by Rouiller and Goldstein (1993) and Lim and Morris (2006). In their study, Perryer and McShane determined that managers need to openly reinforce learning including providing the necessary tools and equipment to complement and allow employees to use newly-acquired knowledge and skills. Likewise, co-hourly employees need to also provide strong encouragement and support through positive peer pressure to employees applying training to the job.
Lim and Morris’ listing of positive supervisor activities to promote transfer and Perryer and McShane’s findings are reflected in Holton’s definition of supervisor support. Holton (2003, p. 11) defines supervisor support as the “…extent to which supervisors/managers support and reinforce use of training on the job.” This support is a multidimensional concept, which could include encouragement to attend training, goal-setting and reinforcement activities related to the training, and modeling of behaviors (Decker 1982; Baldwin & Ford 1988). While the exact nature of how supervisor support is expressed will vary based on the type of training, social aspects of the organization, and abilities of the trainees, supervisor / management support is an integral aspect of the transfer climate (Huczynski & Lewis 1980; Dawson 1991; McSherry & Taylor 1994; Tracey & Tews 2005).

While considerable research has occurred noting the impact of an employee’s direct supervision and co-hourly employees support toward transfer, there has been much less research on the impact of training transfer on managerial employees. Brown and McCracken (2008) investigated the transfer of skills learned when they surveyed 137 managers attending a management education and development program. The authors also examined any issues encountered by managers in transferring these skills to the workplace. Table 2.4 provides a summary of the results received from this study. The authors found similar issues related to transfer for managers as experienced by subordinates. Time allocation restraints, organizational culture perception and restrictions, as well as opportunity to use knowledge, and relationship between organizational and training goals reflect issues listed previously as barriers to transfer.

Taken together, work system factors and people factors are both elements of the organization’s climate or culture. Schein (1988, p.7) defines organizational culture as a six-part construct that involves behavioral norms established and maintained by a group. Schein notes that culture is “A pattern of basic assumptions, 2) invented, discovered, or developed by a given group, 3) as it learns to cope with its problems of external adaptation and internal integration, 4) that has worked well enough to be considered valid and, therefore, 5) is to be taught to new members as the 6) correct way to perceive, think, and feel in relation to those problems.” Tracy and Tews (2005) reference McGregor (1960), who defined organizational culture as the “…day-by-day
behavior of the immediate supervisor and of other significant people in the managerial organization.”

Table 2.4 Manager’s Issues in Transfer

<table>
<thead>
<tr>
<th>Lack of Time</th>
<th>Respondents too swamped by other responsibilities to have time to give feedback, or had too many employees to have time to give feedback.</th>
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<tbody>
<tr>
<td>Unsupportive Organizational Culture</td>
<td>Respondents’ organization did not understand benefits or respondents had trouble speaking with authority due to lack of official leadership in job description (i.e., unofficial manager).</td>
</tr>
<tr>
<td>Staff Issues</td>
<td>Unwillingness of staff and co-worker employees to be receptive to feedback.</td>
</tr>
<tr>
<td>Personal Habits and Effort</td>
<td>Respondents found that they subconsciously revert to former mindsets and their own lack of personal effort at times was a barrier.</td>
</tr>
<tr>
<td>Continuous Change</td>
<td>Respondents found constant change within the organization made it difficult as they were not consistently dealing with the same staff members.</td>
</tr>
<tr>
<td>Union Rules</td>
<td>Respondents limited by union rules. (e.g. feedback is outside job description, or is someone else’s job, or is considered a form of discipline, etc.)</td>
</tr>
<tr>
<td>Time Gap</td>
<td>Respondents were not able to use the workshop skills for a long period of time afterwards, due to organizational scheduling of performance reviews or personal leave.</td>
</tr>
<tr>
<td>Employees Geographical Location</td>
<td>Respondents were not geographically close to employees.</td>
</tr>
</tbody>
</table>
2.15 Learner Readiness

Holton, et al (2003) in a comparison of private, public, governmental, and non-profit organizations, found that the type of organization has some level of influence upon learner readiness. In this study, the researchers concluded that the level of readiness of the trainee was to some degree shaped by the trainee’s perception of how the organization will react to the trainee’s application of training on-the-job. If the trainee expected resistance to change, lack of supervisor support, or received negative personal outcomes from previous attempts to apply training, then the level of readiness for future training is less positive (Tannenbaum 1997; Burke & Baldwin 1999; Herold, et al. 2002; Antle, et al. 2009). Kopelman et al (1990, p. 284) echoes this definition by stating that organizational culture is the “…shared meanings and manifestations’ of organizational behavior.”

2.16 Organizational Culture and Transfer

Bates & Khasawneh (2005, p. 98) built on the research of Kopelman, et al (1990) by stating that “organizational culture is learned by individuals and groups as they encounter, work through, and resolve problems and challenges. It is a consequence of commonly accepted assumptions and produces ‘automatic patterns of perceiving, thinking, feeling, and behaving’ that ‘provide meaning, stability, and comfort.

Therefore, to define organizational culture is to define how an organization chooses to think and act as a community of people in the process of achieving some form of intentional aim or purpose. For a business organization, this intentional aim is directly related to its mission and objective as a business. The extent and impact of an organization’s culture upon its own members will vary based on its size and geographical placement. For example, a large multinational company will have a different cultural footprint than a small regional company. The corporate structure of the organization develops the culture. A formal structure with strong hierarchy of management levels acts differently than a decentralized lean management structure (Holton, et al. 2003). Aspects related to the social norms and standards of the national and regional culture in which the organization resides also shape and influence its cultural footprint. As a result, organizational culture denotes the social-relational
interactions of the members of an organization while transfer climate is a descriptive term used to denote the manifestation of those cultural elements within an organization that gives rise to the expectations, perceptions, and reactions of an individual to the cultural elements of the organization (Schein 1988; Bates & Khasawneh 2005). This organizational-individual interaction can either contribute to or prevent effective transfer (Bates & Khasawneh 2005).

While Holton (1996, 2004) establishes the link between transfer climate and motivation to transfer as a secondary influence and the link between transfer climate and individual performance as more significant, the overall effect of transfer climate upon the transfer process cannot be overestimated (Seyler, et al 1998). Gilley and Maycunich (2000, p. 238) note the impact of the transfer climate by stating “Organizations contribute to the lack of learning transfer by establishing policies, procedures, work environments, and managerial practices inappropriate or not conducive to creating a developmental organization. Many organizational leaders believe that employees are easily replaced, hence reinforcing the notion that learning and change wastes time.” The transfer climate produced by the organization and its members and the impact upon the transfer process remains significant (Huczynski & Lewis 1980; Baldwin & Ford 1988; Chiaburu & Marinova 2005; Hawley & Barnard 2005; Hutchins & Burke 2007; Perryer & McShane 2008; Azman et al. 2009).

Considerable evidence exists illustrating that the organization is a leading indicator into the effectiveness of the transfer process (Huczynski & Lewis 1980; Merriam & Leahy 2005; Perryer & McShane 2008; Azman, et al 2009). Rouiller and Goldstein (1993) examined transfer climate through a supervisory training program designed for fast-food restaurant management trainees. In this study, the authors conducted a post-training survey related to job performance and management skills. The authors also conducted a survey of the organizational transfer climate at each restaurant to which the supervisor trainees were assigned. The authors concluded that organizations with a positive transfer climate led to a higher level of training transfer. Tracey et al (1995) also examined organizational culture in post-training outcomes and found similar results supporting Rouiller and Goldstein that the transfer climate of the organization has a direct correlation to effective transfer.
Seyler, et al (1998) investigated the use of computer-based training (CBT) in a field application within an industrial organization. The researchers found that effectiveness of the CBT in relation to transfer was in correlation to the variables of opportunity to use, co-hourly employees’ support, and supervisor support. Likewise, Smith-Crowe, et al (2003) found positive transfer occurred in organizational environments that provided support to employees to utilize recently-acquired training on-the-job. This support was found in the actions and social cues of supervisors and co-workers. Similarly, Clarke (2002) examined the effectiveness of transfer in a human service organization. In this small-scale study the lack of supervisor support, as evidenced by not providing feedback, lack of positive post-training reinforcement, and refusal to introduce changes in work practices led to barriers to transfer. Additionally, Clarke found that work load levels, resource limitations, and low employee morale as contributing factors to low transfer. Hawley and Barnard, (2005) referenced Gielen, (1996) who found supervisor support and feedback as well as opportunity to utilize training on-the-job as the most significant factors to influence transfer in the work setting. Finally, Smith-Jentsch et al (2001) examined the relationship and influence of team leaders upon trainee pilots in a flight training program. In this study, the researchers found that team leaders who provided positive reinforcement and support for the trainee pilots had in turn more trainee pilots demonstrate desired behaviors and performance outcomes in comparison to team leaders that did not provide a positive environment.

While the organizational climate or culture is significant, it is also unique for each organization (Nijhof & Streumer 1998; Saks & Ashforth 1997; Cyert & March 2001; Holton, et al. 2003; Azman, et al. 2009). Each organization has characteristics that influence the effectiveness of transfer and these characteristics will interplay differently with some elements producing stronger impact upon transfer and conversely other elements will have less effect (Colquitt, et al. 2000; Holton, et al. 2003; Pidd 2004). For example, the exact nature of supervisor and peer or co-worker influence upon transfer is mixed in the literature as to its influence upon transfer (Facteau, et al. 1995; Huint & Saks 2003); however, this may be the result of the varying nature of organizational cultures and subcultures (Pidd 2004; Merriam & Leahy 2005; Devos, et al. 2007; Azman, et al., 2009). As Saks and Ashforth (1997, p. 269) note “Job design, technical systems, reward systems, communication systems,
and leadership styles are some organizational attributes that create a local context that shapes the nature and experience of work.” Work structures and cultures are different. An organization with a highly-centralized structure requires different skills and abilities for a supervisor as compared to a decentralized highly-autonomous work force model (Holton, et al 2003).

In one study of a multinational organization that provided interpersonal skills training for technical staff, researchers found that trainee motivation, trainee-perceived relevance of training, and the level of employee job autonomy had a greater influence toward positive transfer than supervisor support (Axtell & Maitlis 1997). Likewise, van der Klink, et al (2001) examined the influence of supervisor support in two training programs at two separate banking organizations with one bank located in Germany and the other in the Netherlands. In both studies, the impact of the supervisor was marginal toward transfer. However, the authors did determine that cultural ramifications need to be considered in how supervisors interact with employees and what is considered socially acceptable for the workplace related to supervisor-employee relationship within various societies. As these studies demonstrate, the level of supervisor support and its associated impact will, to some degree, vary based on the individual organizational context and other related cultural and external factors (Devos, et al. 2007). Fundamentally, the local context found within an organization has the greatest effect upon transfer (Huczynski & Lewis 1980; Colquitt, et al. 2000; Mayer 2001; Gaudine & Saks 2004). However as the literature demonstrates, the exact nature of this impact will vary from organization to organization and person to person (Devos, et al. 2007). As demonstrated in the literature, the impact of an organization’s transfer climate is significant which leads to individual performance.

2.17 Individual Performance and Organizational Impact

Individual performance of the employee is the primary driver of transfer. As the employee gains knowledge from training and applies it in related job performance, positive organizational change occurs. The goal is that the organization benefits directly and indirectly from the improvement of the individual’s performance (Yamnill & McLean 2001; Chen, et al 2005). If employees’ level of value for an
organization are based on output of abilities as expressed as performance and this
performance produces tangible results for the organization that allow it to achieve its
goals and objectives, then understanding the mechanisms that creates and motivates
the employee to transfer knowledge into the workplace is critical (Baldwin & Ford

Organizational outcomes center on organizational results and this is characterized as a
change (Holton 1996; Bae & Jacobs 2001). This change is observed at an
organizational level as improved performance (Subedi 2006). As previously
indicated, this performance improvement is achieved through a change at the
individual performance level (Yamnill & McLean 2001) but this determination is
made through the combination of return on investment (ROI) expectations, necessary
resource allocations, productivity constraints, contributing external factors, and the
linkage between strategic objectives with the training (Holton 1996, 2005; Machin
2002; Lim & Morris 2006).

Organizational results, however, cannot be viewed in isolation as simply training
occurrences. The results as actual impact on the organization are often difficult to
assess (Holton 1996; Kanu 2003). Bae and Jacobs (2001) indicate this by stating “The
objectives of the training program reflect numerous goals ranging from trainee
progress to training program improvement to organizational goals” and they contend
that there is a whole set of values and attitudes that belong to the trainees, the trainers,
all the way to the decision-makers in the organization. However, Bae and Jacobs
stress that while the trainee may view the results of training in one fashion and their
supervisor may have another view, “Training is ultimately judged on its contributions
to organizational goals.”

Assessment of training effectiveness requires an analysis as to what is actually
expected to be achieved through the training for the organization (Holton 1996). To
understand the relationship between the organizational elements, consider “Expected
Utility/ROI” as the cost for the training in relation to actual allocation of
organizational resources (Machin 1999). Yamnill & McLean (2001) postulate that
expected utility/ROI is directly related to expectancy theory but the payoff is an
organizational perspective versus an individual perspective. In this sense the
organization, as expressed either through supervisor, subunit, department, or even through an organization-wide mandate, believes that a desirable outcome is obtained through an employee attending a training program.

The costs associated with the training is offset by the perceived value that will be achieved by the performance change or improvement introduced into the organization by the employee (Holton 1996). Lorenzi and Riley (2000, p.118) compare the cost of investment in terms of value by stating “Major organizational changes typically involve many different types and levels of personal loss for the people in the organization. For example, change always requires the effort to learn the new, which is a loss in terms of time and energy that could have been used elsewhere. Although some may welcome the learning opportunity, many of us don’t want to invest that time and energy unless we are dissatisfied with the current arrangements.” The level of investment must correspond to the expected reward for the cost to be justified and in transfer; this reward is expressed as performance that produces desired results.

Linkage to organizational goals refers to the actual needs of the organization and how these needs will be met through training and transfer (Holton 1996). This linkage is expressed in the Holton model in two ways: 1) the transfer design must be aligned to organizational goals; and, 2) the intended organizational results must be linked to organizational goals. The linkage to transfer design is necessary for the training must relate to the needs for the organization in order to be successful in creating results. In a study of training within three banking institutions (Antonacopoulou 2001), the researcher found managers as critical of the training design and delivery (transfer design) as other employees. It was found that this criticism was based on the timing of the training. Training was provided usually after it was needed by employees to address certain needs instead of beforehand. Furthermore, the training was considered disorganized and lacking in quality. The transfer design in this situation did not reflect the goals of the organization in a tangible way that fosters transfer. The lack of connection between goals and transfer design influences the target of transfer – results. To insure that alignment with goals occurs, a training event must have an intended outcome that has some level of linkage to organizational results.
The final component within organizational outcomes is external events. External events according to Holton (1996) are the compilation of the various and, in some cases, complex events and situations that are beyond the scope and control of training that have an impact on organizational results. Examples of external events vary based on the nature and type of organization using the model. For instance, a tool manufacturing organization may have a reduction in production orders while a food processing facility is impacted with weather changes on produce harvesting. In both of these examples, the situations experienced by the organization will have an impact upon organizational results and correspondingly on individual performance.

2.18 Holton’s Model of Transfer

Elwood Holton (1996) identified the need to examine transfer more holistically by noting the flaws within the four-level model introduced by Kirkpatrick in the 1970’s. Kirkpatrick’s model was developed as a means to evaluate training sessions and the effectiveness of the training. The issue, according to Holton, is the limitation of the four-level model in identifying and evaluating all the possible constructs that underlie the transfer process both within the training itself and the work environment (Holton, et al. 2000). Furthermore, Holton argued that previous research sought to investigate transfer within unique organizational settings and not across multiple venues (Holton, et al. 2003). As Holton and his colleagues noted, there is more to training and transfer than the training design and delivery of the training session within one organizational setting. Transfer is a combination of elements that come together to shape the transfer process and must be understood holistically as Holton, Bates, Ruona (2000) state: “Transfer can only be completely understood and predicted by examining the entire system of influences” (p.335). Based on these factors, Holton’s model and the associated LTSI instrument were selected for use in this study. Prior to this study, Holton’s model and the LTSI were used in multiple organizational settings and across various cultures with validity established through previous research studies, as discussed in chapter three.

Holton (1996), building on the work of Noe and Schmitt (1986) and Baldwin and Ford (1988) and others, theorized that transfer occurs at three levels: learning, individual performance, and organizational performance/results (Williams 2008)
which are fundamentally a result of a combination of three factor domains of ability, motivational factors, and organizational/environmental influences as well as secondary influences that are not indicated in Kirkpatrick’s model (Holton 1996, 2005; Kirwan & Birchall 2006; Holton, et al. 2008). As illustrated in figure 2.1, Holton’s model builds upon the premise that organizational results are the primary aim for effective transfer (Holton 2005). The effects of various motivational elements on these outcomes are demonstrated as arrows in figure 2.1. The arrows demonstrate the relationships between these elements, with thick arrows illustrating primary relationships and lesser arrows illustrating secondary relationships. However, all of these relationships are significant for they each can directly or indirectly influence the transfer outcome (Holton 2005).

For example, an individual with a high level of motivation to learn attends a formal training session. The training session is well designed and executed, however the organization that employs the individual is geared toward a strong centralized structure. This structure places the supervisor in the position to exercise considerable direction on tasks and work assignments. Additionally within this organizational setting, the transfer climate is not receptive to transfer with negative support from the individual’s supervisor and co-hourly employees. The result is no on-the-job performance change due to the direct and indirect factors associated with a poor transfer climate. Although the training received and the individual’s learning ability and reaction were positive, the issues related to the transfer climate produces a barrier to transfer. If the underlying aspects that created these barriers are not addressed, then organizational performance does not change as a result of the training received by the individual.

On the other hand, another organization is structured with cross-functional teams with few hierarchical levels. In this organization, the level of control exercised by the supervisor is less of an issue since more authority over tasks and assignments is placed on the employee. In this situation, the transfer climate is more favorable for the individual has greater direct control of learning outcomes and, therefore the reaction and transfer are positively expressed in individual performance and organizational results. Since all organizational structures maintain some level of uniqueness, these factors must be considered in any evaluation of training and transfer. Holton
addresses this variable in his model by illustrating to a greater extent the various motivational factors that exist within the individual, the training itself, and the organization, as well as other possible elements (Tannenbaum 1997; Holton, et al. 2003; Holton 2004).

As the arrows illustrate in figure 2.1, training transfer does not exist in a vacuum isolated from other factors, but is directly influenced by these elements and interactions. As the individual learns, the individual incorporates this knowledge into job performance. This performance produces a change in the organization’s performance. As evidenced in figure 2.1, a causal link extends from learning to individual performance to organizational performance. While organizational results are the focus of this model, individual performance is a core facet in producing organizational results (Yamnill & McLean 2001; Hawley & Barnard 2005; Lim & Morris 2006). Organizational change is realized through individual performance (Yamnill & McLean 2001). Learning may occur, but if the individual does not introduce this learning into some form of realized performance change, then no real results exist for the organization (Baldwin & Ford 1988; Holton 1996, 2004).
Holton’s model is designed to illustrate a complex process as simply as possible. The model consists of five key parts: secondary influences, motivation elements, environmental elements, outcomes, and ability/enabling elements (Kirwan & Birchall, 2006). While all of these parts exist in a more fluid organic state acting, interacting, and reacting to various stimuli, and should not to be considered as compartmentalized into isolated subsets, the model is designed as interacting layers, as shown in figure 2.1, for the purpose of clarity and simplicity.

Secondary influences are variables that are situational in scope for each one impacts the trainee in a specific circumstance, and to a varying degree, based on the specific individual (Seyler, et al. 1998). Secondary influences include the readiness of the individual to learn, self-efficacy, (Chen 2003) attitude related to job or job commitment (De Jong 1996; Khasawneh 2004), intervention fulfillment, and
personality traits (Merriam & Leahy 2005). As illustrated in figure 2.1, these influences tie directly into the motivation to learn and motivation to transfer of an individual.

This leads to the final components of Holton’s model as well as all the models that have been discussed in this review which is organizational impact received from training. Moving from individual performance, the next area of the model can be characterized as the organizational elements. These are the final components of Holton’s model and signify the desired outcome of training - organizational improvement. These components consist of expected utility/ROI, external events, organizational results, and linkage to organizational goals.

Holton (1996) establishes a dual influence of an organization in relation to training. As demonstrated previously in this review, the organization has a direct effect on employees and how they perceive and respond to training and transfer (Huczynski & Lewis 1980; Merriam & Leahy 2005; Perryer & McShane 2008; Azman, et al 2009). On one hand, the influence the organization places upon the individual is illustrated through the constructs of transfer climate and motivation to transfer which are exhibited through the secondary influences of job attitudes and intervention fulfillment. This influence can be summarized as the “organizational effect” and illustrates how the organization through its actions and inactions impacts the individual (Bates & Khasawneh 2005).

Influence is displayed in how the organization receives training. This influence is demonstrated in Holton’s model as the constructs of expected utility/ROI, external events, organizational results, and linkage to organizational goals. This influence can be summarized as the “organizational impact” and describes the expected and actual impact training has on organizational outcomes. This dual influence is a somewhat continuous flow within an organization. For example, an individual enters into a training program either voluntarily or as required by the organization. With the individual’s personality and ability accounted for as variables in the transfer process, the organization exerts some level of effect upon the individual. This effect manifests in how the individual performs after training and correspondingly, this will have an impact upon the organization. This impact translates into some form of organizational
results that either produce intended or negligible outcomes for the organization. Depending on the outcome produced, a level of influence occurs that can either change how the organization affects the individual or strengthen its current effect (Bae & Jacobs 2001).

As demonstrated in Holton’s (1996) study as well as studies of Baldwin and Ford (1988) and Noe and Schmitt (1986), transfer is a dynamic process involving multiple variables. The Holton’s model presents a greater distribution of factors and is designed to be utilized in multiple settings. The advantage of Holton’s model is in its identification of critical outcomes, the influencing primary and secondary relationships that exist, and the main constructs that impact transfer seeking to examine transfer in a holistic manner with the goal of extending transfer research (Holton 2000). Nonetheless, Holton does not believe the LTSI is complete but should be viewed as a developing tool in the ongoing process of understanding the various transfer-related dynamics that occur in organizational activities (Holton 2005).

A part of this building process is to evaluate models of transfer and examine areas of weakness. Holton (1996) readily admits that his model is another step in the research evolution of transfer. The level and extent of interaction within factors of the same type are not fully addressed by other researchers in the literature. An example of this is within transfer climate. The question arises as to what extent do supervisor support and co-hourly employees support actually impact transfer and does this include other factors such as workload, opportunities to use, and time gap (Kirwan & Birchall 2006). How do these factors interact with each other and shape the transfer process? This question as well as others requires additional research which illustrates what Holton (1996) intended when he stated “...here is an initial step in that direction” of developing more effective tools and methods to understand and promote effective transfer. While there remains a level of debate and continuous research on how and when transfer occurs, evidence supports the fact that training can have a positive impact upon employees and ultimately an organization. The purpose of the current study is to add to this body of research by investigating this impact of training transfer through supervisory and hourly employees in a field setting.
2.19 Transfer System Factors Can Be Measured

Training transfer can be reliably measured. Based upon Holton’s model of transfer (Holton, et al. 2000, 2003), the Learning Transfer System Inventory Questionnaire (LTSI) measures transfer factors that will either facilitate or prevent effective transfer. Waller (2012) arranged the components of the LTSI of Holton (2005; Khasawneh 2004) into three categories: Personal factors, Training factors, and Work Environment factors. For the present study, Personal Factor scales included learner readiness, motivation to transfer, and personal capacity for transfer; positive personal outcomes and negative personal outcomes; as well as Transfer effort-performance expectations, Performance-outcomes expectations, and Performance self-efficacy. LTSI Training Factors included training validity and training design. LTSI Work Environment factors included Peer support, Supervisor support, Supervisor sanctions, Opportunity to use, Openness to change, and Performance coaching.

2.20 Summary of Literature

Transfer is an important aspect of the organizational process of the business environ. The cost associated with training employees and the desired performance outcomes are paramount for the success of many organizations. The transfer process includes three major elements: the trainee, the training, and the organization environment. The literature reviewed demonstrates the interplay of these interactions and corresponding results. Transfer must include these elements with the understanding that transfer is a dynamic process that is subject to a level of variation that will be unique to each training situation and individual trainee; thus, transfer must be viewed within the parameters of interactions and variations. Because of the uniqueness and variations, transfer researchers have sought to examine transfer elements individually as well as a whole to develop a comprehensive picture of the transfer process. In doing so, the need to examine transfer across organizational settings becomes evident.

This literature review provided an overview of training transfer, including models of transfer, and the importance of personal, training, and work environment factors in training transfer, including how learning transfer can be reliably measured using the LTSI measuring instrument of Holton (2005. However, no studies to date have
investigated possible differences between salaried supervisors and their hourly employees in personal factors, training factors, and work environment factors related to transfer of training. The purpose of this study was to fill this gap in the published literature.
Chapter 3 - Research Methodology

3.0 Introduction

The purpose of this study is to provide a better understanding of training transfer by investigating training transfer between two distinct employee groups. More specifically, the focus of the study was to explore similarities and differences related to transfer between supervisors and hourly employees after both groups were required to attend training sessions following an acquisition of their business organization.

3.1 Research Questions and Hypotheses

The purpose of this study was to address the three research question and their associated hypotheses stated below. Three research questions led to five testable hypotheses, each stated in null form.

*Research Question* 1. Following training implemented as part of the acquisition process, do supervisory personnel and hourly employees significantly differ in personal, training, and work environment training transfer factors?

*Null Hypothesis 1.* Supervisory employees do not significantly differ from hourly employees in LTSI Personal Factors.

*Null Hypothesis 2.* Supervisory employees do not significantly differ from hourly employees in LTSI Training Factors.

*Null Hypothesis 3.* Supervisory employees do not significantly differ from hourly employees in LTSI Work Environment Factors.

*Research Question* 2. From the perspective of interviewed supervisors, did the required training implemented as part of the acquisition process change the motivation to transfer?

*Null Hypothesis 4.* The required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors.
Research Question 3. Does the required training implemented as part of the acquisition process leads to improved performance outcomes?

Null Hypothesis 5. The rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training.

While previous studies examined training transfer, no studies published to date have sought to uncover the perceived experiences of both supervisory employees and hourly employees in relation to training transfer. Additionally, Baldwin and Ford (1988), Yannill and McLean (2001), and Chiaburu and Marinova (2005) expressed the need for a more in-depth exploration of a system-wide approach in how transfer is achieved. For these reasons, this study was conducted, filling a gap in the published literature.

3.2 Population Sample

The population for this study were hourly employees from operational and maintenance departments and managers from the same departments of the acquired organization (Company B). Both employee groups were assigned to attend required safety training by their departments based on production requirements and schedules during a specific time period. The population was not selected on any other rationale other than the schedule at the time that had the least impact on production. The sample population was randomly assigned to attend this training. By the very nature of the organization, there were a higher percentage of hourly employees than supervisors included in the sample. An economic downturn and subsequent layoff also impacted group size.

A total of 101 employees attended this training during a two-month period with the number of employees in attendance equal to 25% of the total operational and maintenance employee population of the facility at the time of the study. Because of a layoff just prior to this study, not all supervisors and hourly employees had returned to full-time status. This is a single-stage post-test sample that consisted of full-time hourly employees and supervisors in production and maintenance department who consented to participate in this research. This entire population consisted of employees that originally were part of Company B’s workforce at the time of
Company A’s acquisition and therefore had experienced the acquisition, transition and planned organizational change. These employees participated in and completed instructor-led, classroom-based required annual one-day safety training sessions.

**Table 3.1 Population Sample**

<table>
<thead>
<tr>
<th>Number of questionnaires returned</th>
<th>101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of questionnaires usable</td>
<td>89</td>
</tr>
<tr>
<td>Number of hourly unionized employees</td>
<td>71</td>
</tr>
<tr>
<td>Number of salaried employees</td>
<td>18</td>
</tr>
<tr>
<td>Percentage of total employee population</td>
<td>25%</td>
</tr>
<tr>
<td>Percentage of total unionized population</td>
<td>24%</td>
</tr>
<tr>
<td>Percentage of total salaried population</td>
<td>30%</td>
</tr>
</tbody>
</table>

Table 3.1 illustrates the composition of the population sample including percentage of sample in relation to total employee population at the facility at the time of the study. Of the 101 questionnaires collected, 12 were discarded due to incompleteness. A questionnaire was considered incomplete if more than two questions were not marked. Of the 12 incomplete questionnaires, participants failed to complete a back page of the multiple-page questionnaires. The final sample for the study consisted of 89 employees. In addition to the questionnaire, a series of semi-structured interviews were conducted of supervisory employees that attended the training sessions. The relatively low number of supervisor employee responses was due to the recent acquisition and subsequent layoff.

### 3.3 Research Design

This research is a comparative descriptive design using a quantitative and qualitative or mixed methods approach. A quantitative approach using a questionnaire was the preferred method of data collection for a portion of this study which provided a framework to identify attitudes, attributes, or behaviors of a larger population based on a small group of individuals. The time required to collect data was minimal due to
the production demands and schedules of the organization (Babbie 1990; Gall, et al. 1996). The questionnaire allowed for hypothesis testing using multivariate analysis of covariance (MANCOVA) to determine statistically significant differences between supervisors and hourly employees. The nonparametric Mann-Whitney U test was used to supplement findings from MANCOVA analyses.

The measurement instrument for this portion of the study was the Learning Transfer System Inventory (Appendix A) developed by Holton, et al., (2003). Permission was obtained by the researcher (Appendix B). The LTSI was utilized because it is a fourth- generation instrument (Khasawneh 2004) with the direct purpose to examine “…all factors in the person, training, and organization that influence transfer of learning to job performance” as found in transfer design, transfer climate, and motivation to transfer (Holton, 2005). The overall goal in the design of the LTSI is to provide practitioners and researchers a validated diagnostic instrument that can be utilized in a variety of settings and organizations (Holton et al 2007) as stated by Holton, Bates, and Ruona (2000) “An established set of transfer system scales with validated constructs and known psychometric qualities would facilitate valid cross-study comparisons and add significantly to understanding the transfer process.”

3.4 Instrument - Learning Transfer System Inventory Questionnaire (LTSI)

The LTSI measures 16 factors in transfer that will either facilitate or prevent effective transfer. These factors are based upon Holton’s model of transfer (Holton, et al. 2000, 2003). The instrument is divided into two construct domains. The first section is training event specific and assesses an individual’s perception after attending a training program. This section contains forty-six items measuring eleven constructs. These constructs include learner readiness, motivation to transfer, positive personal outcomes, negative personal outcomes, and personal capacity for transfer, as well as peer support, supervisor support, supervisor sanctions, perceived content validity, transfer design, and opportunity to use. The second domain examines training from a general organizational perspective and relates to training beyond a specific training event or session and evaluates a training program. This portion contains twenty-three questions built to measure five constructs of transfer including effort performance,

These 16 constructs are categorized into three major groups: personal factors, training factors, and work environment factors (Holton, et al. 2003). Table 3.2 identifies the 16 constructs including definitions and examples.
<table>
<thead>
<tr>
<th>Factors</th>
<th>Definition</th>
<th>Item Examples</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Learner readiness (lr)</strong></td>
<td>The extent to which individuals are prepared to enter and participate in training.</td>
<td>Before the training I had a good understanding of how it would fit my job-related development.</td>
<td>1, 9, 10, 13</td>
</tr>
<tr>
<td><strong>Motivation to Transfer (mt)</strong></td>
<td>The direction, intensity and persistence of effort toward utilizing in a work setting skills and knowledge learned.</td>
<td>I get excited when I think about trying to use my new learning on my job.</td>
<td>2, 3, 4, 5</td>
</tr>
<tr>
<td><strong>Personal capacity for transfer (pct)</strong></td>
<td>The extent to which individuals have time, energy and mental space in their work lives to make changes required to transfer learning on the job.</td>
<td>My workload allows me time to try new things I have learned.</td>
<td>19, 25, 26, 27, 11, 12, 20</td>
</tr>
<tr>
<td><strong>Positive personal outcomes (ppo)</strong></td>
<td>The degree to which applying training on the job leads to outcomes that are positive for the individual.</td>
<td>Employees in this organization receive various 'perks' when they utilize newly learned skills on the job.</td>
<td>6, 16, 17, 7, 8, 15, 18, 22</td>
</tr>
<tr>
<td><strong>Negative personal outcomes (npo)</strong></td>
<td>The extent to which individuals believe that not applying skills and knowledge learned in training will lead to outcomes that are negative.</td>
<td>If I do not utilize my training, I will be cautioned about it.</td>
<td>14, 21, 23, 24</td>
</tr>
</tbody>
</table>
Table 3.2 Learning Transfer System Inventory Factor, Definitions, Examples, and Questions Continued

<table>
<thead>
<tr>
<th>Factors</th>
<th>Definition</th>
<th>Item Examples</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer effort-performance expectations (tep)</td>
<td>The expectation that effort devoted to transferring learning will lead to changes in job performance.</td>
<td>My job performance improves when I use new skills that I have learned.</td>
<td>65, 66, 69, 71</td>
</tr>
<tr>
<td>Performance self-efficacy (pse)</td>
<td>An individual’s general belief that he is able to change his performance when he wants to.</td>
<td>I am confident in my ability to use newly-learned skills on the job.</td>
<td>82, 83, 84, 85</td>
</tr>
<tr>
<td><strong>Training factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived content validity (pcon)</td>
<td>The extent to which trainee’s judge training content to reflect job requirements accurately.</td>
<td>What is taught in training closely matches my job requirements.</td>
<td>47, 48, 49, 58, 59</td>
</tr>
<tr>
<td>Transfer design (td)</td>
<td>The degree to which training has been designed and delivers to give trainees the ability to transfer learning on the job.</td>
<td>The activities and exercises the trainers used helped me know how to apply my learning on the job.</td>
<td>52, 53, 54, 55</td>
</tr>
</tbody>
</table>
Table 3.2 Learning Transfer System Inventory Factor, Definitions, Examples, and Questions Continued

<table>
<thead>
<tr>
<th>Factors</th>
<th>Definition</th>
<th>Item Examples</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work environment factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Peer support (ps)</em></td>
<td>The extent to which peers reinforce and support the use of learning on the job.</td>
<td>My colleagues encourage me to use the skills I have learned in training.</td>
<td>28, 29, 30, 31</td>
</tr>
<tr>
<td><em>Supervisor support (ssup)</em></td>
<td>The extent to which supervisors-managers support and reinforce use of training on the job.</td>
<td>My supervisor set goals for me that encourage me to apply my training on the job.</td>
<td>32, 33, 37, 39, 40, 43</td>
</tr>
<tr>
<td><em>Supervisor sanctions (ssan)</em></td>
<td>The extent to which individuals perceive negative responses from supervisors-managers when applying skills learned in training.</td>
<td>My supervisor opposed the use of the techniques I have learned in training.</td>
<td>38, 44, 45, 34, 35, 36, 41, 42, 46</td>
</tr>
<tr>
<td><em>Opportunity to use (opp)</em></td>
<td>The extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job.</td>
<td>The resources I need to use what I learned will be available to me after training.</td>
<td>56, 60, 61, 63, 50, 51, 57, 62</td>
</tr>
<tr>
<td><em>Openness to change (otc)</em></td>
<td>The extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training.</td>
<td>People in my group are open to changing the way they do things.</td>
<td>73, 74, 75, 76, 77, 78</td>
</tr>
</tbody>
</table>
Table 3.2 Learning Transfer System Inventory Factor, Definitions, Examples, and Questions Continued

<table>
<thead>
<tr>
<th>Factors</th>
<th>Definition</th>
<th>Item Examples</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work environment factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance coaching (pcoach)</td>
<td>Formal and informal indicators from an organization about an individual's job performance.</td>
<td>After training, I get feedback from people about how well I am applying what I learned.</td>
<td>79, 86, 87, 89, 88, 80, 81</td>
</tr>
</tbody>
</table>

A major aspect in the development of LTSI is to create a generalized tool to study transfer from multiple settings and organizational types. This facilitates more effective cross-study comparisons and removes redundancy of various researchers creating different instruments to study in effect the same concept, effective transfer (Holton et al. 2000). This allows greater opportunities for researchers to develop a more comprehensive understanding of transfer and associated dynamics as well as provide a valid and reliable instrument to measure transfer in the field settings of work environments (Holton et al. 2007).

The LTSI was developed by Holton and Bates (1997) to assess learning and transfer through two construct domains of actual training event-program specific and at a general training level that denotes organizational factors that may influence any training program being conducted. LTSI questions are constructed using a Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The program-specific construct is measured using forty-six items measuring eleven constructs reflective of factors affecting a trainee attending a particular training program and possible post-training outcomes to transfer. This section includes items addressing learner readiness, motivational factors related to learning and transfer, peer and supervisor support, opportunity to use and training content validity and design. The general training level contains twenty-three items measuring five constructs that consider
training in general for an organization such as performance coaching, openness to change, and performance self-efficacy.

At the onset of creation of the LTSI, Holton and his colleagues administered the LTSI to 1616 trainees that represented employees from various disciplines, training programs and a wide range of organizational types (Ruona, et al. 1999). Ruona, Leimbach, Holton, and Bates (1999) examined and compared participant utility reaction ratings to the LTSI 16 factors. Bivariate correlation analysis was performed between participant reactions to training and the 16 factors. The results of the analysis are:

- Transfer Design \( (r=.62) \) and Motivation to Transfer \( (r=.55) \) suggest moderate levels of convergent validity with participant reactions to training.
- Transfer Effort \( (r=.48) \) and Perceived Content Validity \( (r=.46) \) suggest low degrees of divergence with participant reactions to training.
- Remaining 12 factors suggest low degrees of divergence with participants’ reactions to training. The correlation scores ranging from .36 to - .09.
- All correlations were significant at the \( (p < .001) \) level.

Kirwan and Birchall (2006) performed a study of transfer among a sample of 112 nurse managers attending four separate management training programs within a six-month time period. The purpose of this study was to examine the LTSI factors presented in the Holton model and determine the validity of the LTSI as a diagnostic tool. Before undertaking an analysis of the responses, reliability of the scales for the Kirwan and Birchall study was tested using the data provided from their sample. In terms of construct validity, a significant factor analysis was performed with Cronbach’s alpha reliabilities range from 0.63 to 0.91, three of the scales scored below 0.70. Cronbach’s alpha was obtained for each of the 16 factors and is presented in Table 3.3 With the exception of two scales (negative personal outcomes, \( \alpha = 0.68 \); personal capacity for transfer, \( \alpha = 0.62 \)), the reliability coefficients for the 16 factors are all above \( \alpha = 0.70 \). Kirwan and Birchall cite Hair et al. (1998), to reference that a coefficient of \( \alpha = 0.70 \) is widely acceptable with coefficients as low as \( \alpha = 0.60 \) has acceptable for exploratory research.
Table 3.3 Validation of the LTSI: Alpha coefficients for the LTSI scales performed by Kirwan and Birchall (2006).

<table>
<thead>
<tr>
<th>Factor</th>
<th>$\alpha$</th>
<th>Factor</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner readiness</td>
<td>0.77</td>
<td>Perceived content validity</td>
<td>0.81</td>
</tr>
<tr>
<td>Motivation to transfer</td>
<td>0.82</td>
<td>Transfer design</td>
<td>0.81</td>
</tr>
<tr>
<td>Positive personal outcomes</td>
<td>0.75</td>
<td>Opportunity to use</td>
<td>0.74</td>
</tr>
<tr>
<td>Negative personal outcomes</td>
<td>0.68</td>
<td>Effort-performance expectations</td>
<td>0.83</td>
</tr>
<tr>
<td>Personal capacity for transfer</td>
<td>0.62</td>
<td>Performance-outcome expectations</td>
<td>0.70</td>
</tr>
<tr>
<td>Peer support</td>
<td>0.90</td>
<td>Resistance to change</td>
<td>0.84</td>
</tr>
<tr>
<td>Manager support</td>
<td>0.92</td>
<td>Performance self-efficacy</td>
<td>0.79</td>
</tr>
<tr>
<td>Manager sanctions</td>
<td>0.85</td>
<td>Feedback and coaching</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Cross-cultural studies were also conducted using the LTSI to examine the generalization of the structure and insure cross-cultural construct validity (Devos, et al. 2007) as demonstrated by the LTSI translated and utilized in Thailand (Yamnill 2001), Taiwan (Chen, et al. 2005), Jordan (Khasawneh, et al. 2006), Belgium (Devos, et al. 2007), Germany (Bates, et al. 2007), Ukraine (Yamkovenko, et al. 2007), and Portugal (Velada, et al. 2009). These studies revealed similar structures with slight modifications due to cultural and language differences (Chen, et al. 2005; Velada, et al. 2009). The LTSI has been administered to over 7,000 participants in a variety of industries, organizational structures, job types, and countries (Holton 2004). The established validity and use of the LTSI in previous studies provides a strong diagnostic instrument for other studies in transfer and therefore LTSI was selected for use in this study.

### 3.5 Instrument - Supervisor Interviews

As demonstrated in the literature review, the role of the supervisor is critical in effective transfer. While previous studies have examined training transfer, no studies
were found that have sought to uncover the perceived experiences of both supervisory employees and hourly employees in relation to training transfer. Previous research by Baldwin and Ford (1988), Yannill and McLean (2001), and Chiaburu and Marinova (2005) all point to the need for a more in-depth exploration of a system-wide approach which would take into account the perspectives of both employee groups. Through the process of merging companies in the current study, supervisors take on the new responsibility or role of ensuring that the safety culture of Company A is fully realized in Company B. To study the experiences and perceptions from a supervisory perspective, the following research question is asked:

**Q1.** Do significant differences exist between the perceived experiences of supervisory personnel and hourly employees of an acquired company in relation to an increase in training implemented as part of the acquisition process?

To answer this question as well as provide additional insight from data gathered from the LTSI questionnaire, the second part of this study was designed to conduct a series of semi-structured interviews of managers within this two-month window who attend the required safety training. This part of the research study is built on the concept of qualitative research using purposive sampling which is a sampling of a population selectively based on the requirements of the research study (Patton, 2002). In this study, the population consists of managers from the operational and maintenance departments. The rationale for this approach is to build a more complete understanding of the transfer experience. As Devers and Frankel (2000, p. 265) explain “Purposive sampling strategies are designed to enhance understandings of selected individual’s or groups’ experience(s) or for developing theories and concepts.”

In this study, purposive sampling is directed toward the managers responsible for implementation of the safety program in the operational and maintenance departments of the facility (Company B). This sampling process is characteristic of a qualitative study (Devers & Frankel 2000) and the intention is to provide rich descriptive data of the transfer process under investigation (Lincoln & Guba 1985). This allows a more constructive analysis to develop as the interviews and LTSI data corroborate findings to produce an accurate description of the phenomena (Schein 1988). As Todd Jick
(1979, p. 604) notes “…field methods can contribute to survey analysis with respect to the validation of results, the interpretation of statistical relationships, and the clarification of puzzling findings.” Key themes emerged through the process and allowed the researcher to identify important issues related to the progression of the study in relation to training transfer and the implementation of the safety culture of Company A in the organization of Company B (Boreham & Morgan 2004).

3.6 Data Collection

The questionnaire was administered at the conclusion of each training session on a strictly volunteer basis. The training session was scheduled one day a week as an eight hour class. A total of eight training sessions occurred during the two-month time period. Employees were informed of the purpose of this survey and why it was to be administered. All employees were made aware of the fact that this survey was not required and that the data would be used for research purposes only. Participants were instructed to answer each question from their own perspective. However, for questions relating to the supervisors, participants were instructed to answer from the perspective of their supervisory experience. Demographic information was obtained asking the employee to self-identify as an hourly union or managerial employee and include years of services with the organization. A total of 101 questionnaires were obtained from a total of 101 employees who attended the training. Each questionnaire was reviewed to ensure all questions had been answered. Of the 101 questionnaires received, twelve participants that had identified as hourly employees were removed from the study because of incomplete questionnaires reducing the number to 89.

Within the two-month time frame, eighteen salaried supervisory employees attended the training sessions. Out of these 18 supervisory employees, a total of six interviews were conducted with each participant informed of the intention and purpose of the interview. Each participant was provided a form of consent (Appendix C). The interviews consisted of a semi-structured approach using four questions to begin the interview (Appendix D) which allowed the interview to build into topics and discussions from the comments of the interviewee. Each interview was scheduled for 30 minutes with two interviews lasting 45 and 50 minutes respectively. At the conclusion of each interview, the researcher transcribed the interview and provided
the interviewee the opportunity to review and make changes as necessary to further clarify any points or comments.

3.7 Data Analysis

After the questionnaires were reviewed for completeness, the data collected was entered into SPSS version 19 software for analysis. As illustrated in Table 3.1, 71 hourly employees fully completed the questionnaire and 18 supervisory employees fully completed the questionnaire. A t-test was performed to compare the level of response to the scale midpoint, indicating whether respondents significantly agreed or disagreed with each LTSI scale. To test for differences between hourly union and salaried supervisory employees in relation to the hypotheses, MANCOVA and the nonparametric Mann-Whitney U test were conducted. The details and results of this process are presented in the next chapter.

3.8 Assumptions of t-test, ANOVA, and MANCOVA

The crucial assumption of t-test, ANOVA, and MANCOVA is independence. Independence was achieved in the present study because individual scores were obtained independent of other scores, so that no individual participant affected the scores of other participants. The minor (non-crucial) assumptions of ANOVA regard the shape of the raw data: skew, kurtosis, and homogeneity of variance. The assumptions that data are fully normal and bell-shaped are rarely met in practice (Cohen, 2007; Micceri, 1989; Tukey, 1977), but t-test, ANOVA, and MANCOVA are robust to violations of these minor assumptions (Cohen, 2007, Howell, 2009; Pearson, 1931). That is, the false alarm rate of 5% (at p < .05) stays near 5% regardless of the shape of the raw data (Cohen, 2007, Howell, 2009). Further, t-test, ANOVA, and MANCOVA statistics take sample size into account in calculating p-values, so t-test, ANOVA, and MANCOVA are unbiased to sample size differences between groups when testing hypotheses at the p < .05 threshold. That is, t-test, ANOVA, and MANCOVA are robust to violations regarding the shape of the raw data and difference sample sizes across groups in objective hypothesis testing. Additionally, the LTSI measures of personal, training, and work environment factors have been used successfully as dependent variables in ANOVA investigations in Khasawneh,
Bates, and Holton (2006), Song et al (2006, and Velada et al 2009). For these reasons, the LTSI measures were considered adequate to be used as dependent variables in t-test, ANOVA, and MANCOVA analyses.

Testing the Hypothesis 1, 2, and 3 required MANCOVA, with pairwise comparisons to localize significant differences between Supervisor and Hourly employees groups in LTSI factors, which derive from a 1-to-5 Likert-type response scale. Likert-type data and scales created by combining scores across Likert-type response items are appropriate for ANOVA and MANCOVA analyses (Boone & Boone, 2012; Norman, 2010). "Parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of ‘‘coming to the wrong conclusion’’" (Norman, 2010, p 631). However, the non-parametric Mann-Whitney U statistic was calculated to verify the findings from ANOVA. In each case, the decision to reject or not reject the null hypothesis was identical for each pairwise comparison whether using the ANOVA or the non-parametric (Mann-Whitney U) framework, bringing statistical convergent validity to the findings.

The present study incorporates multiple dependent variables and therefore multiple comparisons between Supervisor and Hourly employees groups. Multiple comparisons can inflate the alpha level for statistical comparison across the study and increase in false alarms (Type-I error) (Cohen, 2007, Howell, 2009). Common strategies for dealing with multiple comparisons include the use of MANOVA (or MANCOVA) to simultaneously analyze multiple dependent variables, and when appropriate, statistical correction (Cohen, 2007, Howell, 2009). The present study utilized MANCOVA to assess between-groups differences in personal, training, and work environment constructs of the LTSI. Statistical correction strategies, like Bonferroni and Familywise corrections, adjust the p-value threshold to account for multiple comparisons (Cohen, 2007, Howell, 2009). However, by changing the p-value threshold, these corrections increase the odds of missing real differences (Type-II error). Therefore, to avoid missing real differences in the new area of investigation, no statistical correction was made for multiple comparisons (Anderson, 2001).

After the interviews were reviewed with the interviewees for accuracy, the interview transcripts were open coded for causal themes. Beginning with the initial four
interview questions, the researcher compared each interview for similar themes using process analysis of theoretical coding based in grounded theory methodology (Cutcliffe 2000). The process consisted of asking the fundamental question of “What is happening here?” The coding method began with a line-by-line review of each transcript. Key words or concepts were highlighted (Corbin & Strauss 1990). Highlighted sections were reviewed and themes were developed from these descriptive phrases that captured the idea or concept found in the interview (Eaves 2001). These phrases were entered into a spreadsheet using one spreadsheet column for each interview.

The researcher then compared these phrases looking for similar themes (van Tonder & Williams 2009). Similar themes were then grouped side by side while maintaining the six column format. This allowed the data to remain organized for each participant while comparing the interview data. A seventh column was added to provide a title phrase or descriptive word for each identified theme that was found in at least three interviews. These title phrases were divided into categories (Cutcliffe 2000) to provide further comparison and ensure linkages actually existed among the interviews. This was done by constantly comparing the data asking questions to further clarify if a relationship exists and to what extent (Eaves 2001). Further details and results of this process are presented in the next chapter.

3.9 Ethics

Concern for the safety and ethical treatment of employees who agreed to participate in this study was a primary concern of the researcher. The primary obligation of the researcher was to respect the integrity of the employees in their contribution to this study. All potential participants received or will receive an explanation of this study and its intended aim. The participants were assured and will continue to be assured that all concerns of privacy and confidentiality are appropriately addressed. Permissions to conduct this study were given by the General Manager of Human Resources of the division (Company A) with the only request being that insights gained will be shared for the future needs of the organization.
3.10 Summary

The purpose of a research design is to ensure the accuracy and trustworthiness of the study and its findings (Maxwell 1996). Gasson (2004, p. 94) stipulates that to achieve trustworthiness of the research study requires explicitness in the study design. Achievement entails the use of three concepts that are interwoven into the research design by stating “…we need to (a) define the procedures that we employ to collect and to analyze data, (b) understand the ends that these achieve in detail, and (c) ensure that these procedures are recorded so that others can understand them.” This approach as noted by Gasson (2004) is built on the work of Miles and Huberman (1994) and Lincoln and Guba (2000). To ensure this occurs, the research design should be presented in a straightforward, easy to understand format that allows others to repeat the design either through repeatability of the measurement instrument or in the dependability of the measurement process utilized. In the current research design, the method to collect and analyze data was gained through use of the LTSI, an established questionnaire. The LTSI has been demonstrated in previous research studies as a dependable valid method for data collection. In addition, semi-structured interviews were conducted with selected participants. This data was analyzed using a coding-category approach established in grounded theory methodology. The process allowed for comparison of interview data to establish overall themes and determine how these themes related to the research questions asked in this study. The design allowed the researcher to examine training transfer process in a field setting and add to the continued research into transfer and performance improvement for employees within business organizations.
Chapter 4 - Results of Findings

4.0 Introduction

The purpose of this study was to examine the training transfer process in a field setting to determine if differences in transfer exist between two distinct employee groups. The overall focus of this study was to further understand the training transfer process through investigating transfer in a specific area of training. The investigation focused on training sessions attended by both hourly employees and salaried managerial personnel during the integration of a newly-acquired organization into an organizational culture with a much stronger emphasis on safety procedures. This chapter presents the data collected for this study including demographic information, results of the statistical process and analysis, results of the semi-structured supervisor interviews, and the safety incident record for the acquired organization. Through the use of the LTSI questionnaire as well as a semi-structured interview, the researcher examined the lived experiences of both hourly employees and salaried managers in order to assess learning and transfer. This chapter presents the data collected for this study including demographic information, results of the statistical process and analysis, results of the semi-structured supervisor interviews, and the safety incident record for the acquired organization.

4.1 Research Questions and Hypotheses

*Research Question 1.* Following training implemented as part of the acquisition process, do supervisory personnel and hourly employees significantly differ in personal, training, and work environment training transfer factors?

*Null Hypothesis 1.* Supervisory employees do not significantly differ from hourly employees in LTSI Personal Factors.

*Null Hypothesis 2.* Supervisory employees do not significantly differ from hourly employees in LTSI Training Factors.

*Null Hypothesis 3.* Supervisory employees do not significantly differ from hourly employees in LTSI Work Environment Factors.
Research Question 2. From the perspective of interviewed supervisors, did the required training implemented as part of the acquisition process change the motivation to transfer?

Null Hypothesis 4. The required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors.

Research Question 3. Does the required training implemented as part of the acquisition process leads to improved performance outcomes?

Null Hypothesis 5. The rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training.

4.2 Demographical Information

As discussed in Chapter 3, the population for this study consisted of hourly employees and managerial employees (supervisors) from the operational and maintenance departments of the acquired company. As illustrated in Table 3.1, a total of 101 employees attended the one-day training sessions during the targeted two-month time frame. The employees who attended these sessions were randomly assigned to training dates. Only two demographical questions were asked of each participant. One question asked if the participant was an hourly union or salaried employee. The second question related to years of service with the organization. Table 4.1 illustrates the years of service between the two employee groups based on the 89 questionnaires that were completed.
Table 4.1 Years of Service Ranges

<table>
<thead>
<tr>
<th>Years of Service Ranges</th>
<th>Salaried Employees</th>
<th>Hourly Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-05 yrs.</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>6-10 yrs.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>11-15 yrs.</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>16-20 yrs.</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>21-25 yrs.</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>26-30 yrs.</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>31+ yrs.</td>
<td>6</td>
<td>25</td>
</tr>
</tbody>
</table>

4.3 Hypothesis Testing for Research Question 1

For Research Question 1, Hypothesis 1, Hypothesis 2, and Hypothesis 3 were tested using MANCOVA, with localizing pairwise comparisons to determine statistically significant differences between Supervisors and Hourly Employees in LTSI Personal Factors, Training Factors, and Work Environment Factors scales of the Learning Transfer System Inventory (LTSI). For each MANCOVA, the independent variable was group ( Supervisors v Hourly Employees), and years of experience served as the covariate. The dependent variables were the LTSI Personal Factors, Training Factors, and Work Environment Factors in parallel MANCOVA analyses. All MANCOVA F-values and p-values reflect the adjustment for years of experience, but to foster ease of understanding, tables and figures display uncorrected values, reflecting the actual scores of the participants. This analysis was performed using SPSS software version 19.0.

Results are presented first for Hypothesis 1, LTSI Personal Factor scales (learner readiness, motivation to transfer, and personal capacity for transfer; positive personal outcomes and negative personal outcomes; as well as Transfer effort-performance expectations, Performance-outcomes expectations, and Performance self-efficacy). Results include the MANCOVA test result, followed by pairwise comparisons to localize significant differences between groups. Results are then presented for Hypothesis 2, LTSI Training Factors (training validity and training design), followed by Hypothesis 3, Work Environment Factors (Peer support, Supervisor support, and
Supervisor sanctions, Opportunity to use, Openness to change, and Performance coaching).

For each LTSI scale, descriptive statistics include the mean, standard deviation (SD), minimum score (Min), maximum score (Max), and the standard error of the mean (SEM). Tables and figures are provided to support the determination to reject or not reject the null hypothesis. The section ends with a summary of findings for Research Question 1.

**Table 4.2. Analysis Plan for Research Question 1.**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Covariate</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Group (Supervisors v Hourly Employees)</td>
<td>LTSI Personal Factors</td>
<td>Years of Experience</td>
<td>MANCOVA</td>
</tr>
<tr>
<td>H2</td>
<td>Group (Supervisors v Hourly Employees)</td>
<td>LTSI Training Factors</td>
<td>Years of Experience</td>
<td>MANCOVA</td>
</tr>
<tr>
<td>H3</td>
<td>Group (Supervisors v Hourly Employees)</td>
<td>LTSI Work Environment Factors</td>
<td>Years of Experience</td>
<td>MANCOVA</td>
</tr>
</tbody>
</table>

**4.4 Hypothesis 1: LTSI Personal Factors**

*Null Hypothesis 1.* Supervisory employees do not significantly differ from hourly employees in LTSI Personal Factors.

LTSI Personal Factor scales included learner readiness, motivation to transfer, and personal capacity for transfer; positive personal outcomes and negative personal outcomes; as well as Transfer effort-performance expectations, Performance-
outcomes expectations, and Performance self-efficacy. MANCOVA revealed no statistically significant difference between Supervisors and Hourly Employees overall, $F(8,79) = 0.37$, $p = .94$.

4.5 Learner Readiness, Motivation to Transfer, and Personal Capacity for Transfer

4.5.1 Learner Readiness

LR scores averaged 3.51 (SD = .70) (Table 4.3), which was significantly higher than the Learner Readiness scale midpoint of 3.0, $t(88) = 6.97$, $p < .001$. Learner readiness was similar for Supervisors ($M = 3.53$, $SD = .52$) and Hourly employees ($M = 3.51$, $SD = .74$), $F(1,86) = .01$, $p = .94$. This null result was confirmed by the nonparametric Mann Whitney U ($p = .74$). Figure 4.1 displays Learner Readiness by Group.

4.5.2 Motivation to Transfer

MT scores averaged 3.74 (SD = .74) (Table 4.3), which was significantly higher than the Motivation to Transfer scale midpoint of 3.0, $t(88) = 9.82$, $p < .001$. Motivation to Transfer was similar for Supervisors ($M = 3.96$, $SD = .47$) and Hourly employees ($M = 3.68$, $SD = .76$), $F(1,86) = 2.10$, $p = .14$. This null result was confirmed by the nonparametric Mann Whitney U ($p = .11$). Figure 4.1 displays Motivation to Transfer by Group.

4.5.3 Personal Capacity for Transfer

MT scores averaged 2.67 (SD = .45) (Table 4.3), which was significantly lower than the Personal Capacity for Transfer scale midpoint of 3.0, $t(88) = 7.03$, $p < .001$. Personal capacity for transfer did not significantly differ between Supervisors ($M = 2.63$, $SD = .34$) and Hourly employees ($M = 2.67$, $SD = .48$), $F(1,86) = .07$, $p = .79$. This null result was confirmed by the nonparametric Mann Whitney U ($p = .76$). Figure 4.1 displays Personal Capacity for Transfer by Group.
Figure 4.1. Learner Readiness, Motivation to Transfer, and Personal Capacity for Transfer by group.

Note. Bar heights reflect mean values. Error bars show standard error of the mean (SEM).
Table 4.3 Learner Readiness, Motivation to Transfer, and Personal Capacity for Transfer Descriptives by Group

<table>
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<th>Personal Capacity for Transfer</th>
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4.6 Summary of Learner Readiness, Motivation to Transfer, and Personal Capacity for Transfer

Participants generally agreed with Learner Readiness, Motivation to Transfer items, but generally disagreed with Personal Capacity for Transfer items. Supervisors and Hourly employees were not significantly different in Learner Readiness, Motivation to Transfer, and Personal Capacity for Transfer. Because no statistically significant differences in Learner Readiness, Motivation to Transfer, and Personal Capacity for Transfer were found between Supervisors and Hourly employees, null Hypothesis 1a was not rejected.

4.7 Positive and Negative Personal Outcomes

4.7.1 Positive Personal Outcomes

PPO scores averaged 2.69 (SD = .84) (Table 4.4), which was significantly lower than the Learner Readiness scale midpoint of 3.0, t (88) = 3.55, p < .001. PPO was significantly higher for Supervisors (M = 3.26, SD = .60) than for Hourly employees (M = 2.53, SD = .83), F (1,86) = 13.1, p < .001. This significant result was confirmed by the nonparametric Mann Whitney U (p < .001). Figure 4.2 displays PPO by Group.

4.7.2 Negative Personal Outcomes

NPO scores averaged 3.66 (SD = .84) (Table 4.4), which was significantly higher than the Learner Readiness scale midpoint of 3.0, t (88) = 8.53, p < .001. PPO was similar for Supervisors (M = 3.57, SD = .62) than for Hourly employees (M = 3.69, SD = .62), F (1,86) = 0.35, p = .55. This null result was confirmed by the nonparametric Mann Whitney U (p = .30). Figure 4.2 displays NPO by Group.
### Table 4.4 Positive and Negative Personal Outcomes Descriptives by Group

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<td>19</td>
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4.8 Summary of Positive and Negative Personal Outcomes

Participants generally agreed with Negative Personal Outcomes items. Groups were generally similar in NPO. However, Supervisors and Hourly employees were significantly different in PPO. Supervisors generally agreed with PPO items, while Hourly employees generally disagreed with PPO items. Because statistically significant differences were found between Supervisors and Hourly employees in PPO, null Hypothesis 1b was rejected.
4.9 Transfer effort-performance expectations, Performance-outcomes expectations, and Performance self-efficacy

4.9.1 Transfer Effort-Performance Expectations

TEP scores averaged 3.73 (SD = .61) (Table 4.5), which was significantly higher than the Learner Readiness scale midpoint of 3.0, t (88) = 11.31, p < .001. TEP was similar for Supervisors (M = 3.91, SD = .33) than for Hourly employees (M = 3.68, SD = .66), F (1,86) = 2.08, p = .15. This null result was confirmed by the nonparametric Mann Whitney U (p = .08). Figure 4.3 displays TEP by Group.

4.9.2 Performance-Outcomes Expectations

POE scores averaged 2.95 (SD = .61) (Table 4.5), which was similar to the scale midpoint of 3.0, t (88) = 0.82, p = .41. POE was significantly higher for Supervisors (M = 3.20, SD = .41) than for Hourly employees (M = 2.88, SD = .64), F (1,86) = 4.44, p < .04. This significant result was confirmed by the nonparametric Mann Whitney U (p < .04). Figure 4.3 displays POE by Group.

4.9.2 Performance self-efficacy

PSE scores averaged 3.87 (SD = .52) (Table 4.5), which was significantly higher than the scale midpoint of 3.0, t (88) = 15.94, p = .001. PSE was similar for Supervisors (M = 3.89, SD = .25) than for Hourly employees (M = 2.88, SD = .57), F (1,86) = 0.03, p = .87. This null result was confirmed by the nonparametric Mann Whitney U (p = .68). Figure 4.3 displays PSE by Group.
Table 4.5. Expectations and Efficacy Descriptives by Group

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<th>poe</th>
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Figure 4.3 Expectations and Efficacy by Group

Note. Bar heights reflect mean values. Error bars show standard error of the mean (SEM).

4.10 Training Factors

*Null Hypothesis* 2. Supervisory employees do not significantly differ from hourly employees in LTSI Training Factors. Training Factors included training validity and training design. MANCOVA revealed no statistically significant difference between Supervisors and Hourly employees, \( F(2,85) = 1.02, p = .37 \).

4.11 Training Validity

Training Validity (pcon) scores averaged 3.64 (SD = .62) (Table 4.6), which was significantly higher than the scale midpoint of 3.0, \( t(88) = 9.65, p < .001 \). PCON was similar for Supervisors (M = 3.77, SD = .40) and Hourly employees (M = 3.60, SD = .67), \( F(1,86) = 1.48, p = .23 \). This null result was confirmed by the nonparametric Mann Whitney U (p = .39). Figure 4.4 displays PCON by Group.
4.12 Training Design

TD scores averaged 3.64 (SD = .62) (Table 4.6), which was significantly higher than the midpoint of 3.0, t (88) = 14.95, p < .001. TD was similar for Supervisors (M = 3.97, SD = .34) and Hourly employees (M = 3.85, SD = .60), F (1,86) = 1.10, p = .30. This null result was confirmed by the nonparametric Mann Whitney U (p = .65). Figure 4.4 displays TD by Group.
Table 4.6 Training Validity and Design

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Figure 4.4. Training Validity and Design by Group

![Training Validity and Design graph]

Note. Bar heights reflect mean values. Error bars show standard error of the mean (SEM).

4.13 Work Environment Factors

*Null Hypothesis 3.* Supervisory employees do not significantly differ from hourly employees in LTSI work environment factors. LTSI Work Environment Factors included Peer support, Supervisor support, and Supervisor sanctions, Opportunity to use, Openness to change, and Performance coaching. MANCOVA revealed no statistically significant difference between Supervisors and Hourly employees overall, $F(6,81) = 0.92, p = .49$.

4.13.1 Support and Sanctions

Support and Sanctions included Peer support (PS), Supervisor support (SSUP), and Supervisor sanctions (SSAN).

4.13.2 Peer support (PS)

PS scores averaged 3.69 (SD = .71) (Table 4.7), which was significantly higher than the Learner Readiness scale midpoint of 3.0, $t(88) = 9.11, p < .001$. PS was similar
for Supervisors (M = 3.78, SD = .42) and Hourly employees (M = 3.56, SD = .56), F (1,86) = .80, p = .37. This null result was confirmed by the nonparametric Mann Whitney U (p = .61). Figure 4.5 displays Peer support by Group.

4.13.3 Supervisor support (SSUP)

SSUP scores averaged 3.24 (SD = .77) (Table 4.7), which was significantly higher than the Learner Readiness scale midpoint of 3.0, t (88) = 2.90, p < .01. SSUP was significantly higher for Supervisors (M = 3.56, SD = .56) than Hourly employees (M = 3.15, SD = .80), F (1,86) = 5.9, p < .03. This significant result was confirmed by the nonparametric Mann Whitney U (p < .03). Figure 4.5 displays supervisor support by Group.

4.13.4 Supervisor sanctions (SSAN)

SSAN scores averaged 2.36 (SD = .70) (Table 4.7), which was significantly lower than the Learner Readiness scale midpoint of 3.0, t (88) = 8.61, p < .001. SSAN was significantly lower for Supervisors (M = 1.94, SD = .58) than Hourly employees (M = 2.47, SD = .70), F (1,86) = 4.22, p < .003. This significant result was confirmed by the nonparametric Mann Whitney U (p < .003). Figure 4.5 displays supervisor sanctions by Group.
Table 4.7. Support and Sanctions

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</table>
4.14 Summary of Support and Sanctions

Participants generally agreed with Peer support (PS) and groups were similar in PS. Supervisor support (SSUP) was significantly higher for Supervisors than Hourly employees, while Supervisor sanctions (SSAN) was significantly lower for higher for Supervisors than Hourly employees. Because statistically significant differences were found between groups in SSUP and SSAN, null Hypothesis 2 was rejected.

4.15 Opportunity, Openness, and Coaching

4.15.1 Transfer Opportunity (opp)

OPP scores averaged 3.35 (SD = .42) (Table 4.8), which was significantly higher than the OPP scale midpoint of 3.0, t (88) = 7.78, p < .001. OPP was similar for Supervisors (M = 3.35, SD = .31) and Hourly employees (M = 3.35, SD = .45), F (1,86) = 0.01, p = .98. This null result was confirmed by the nonparametric Mann Whitney U (p = .79). Figure 4.6 displays OPP by Group.
4.15.2 Openness to Transfer (otc)

OTC scores averaged 3.09 (SD = .47) (Table 4.8), which trended higher than the OTC scale midpoint of 3.0, t (88) = 1.77, p = .08. OTC was similar for Supervisors (M = 2.97, SD = .48) and Hourly employees (M = 3.12, SD = .46), F (1,86) = 1.45, p = .23. This null result was confirmed by the nonparametric Mann Whitney U (p = .29). Figure 4.6 displays OTC by Group.

4.15.3 Performance Coaching

PCOACH scores averaged 3.29 (SD = .68) (Table 4.8), which trended higher than the PCOACH scale midpoint of 3.0, t (88) = 4.08, p < .001. PCOACH was similar for Supervisors (M = 3.46, SD = .49) and Hourly employees (M = 3.25, SD = .72), F (1,86) = 1.43, p = .24. This null result was confirmed by the nonparametric Mann Whitney U (p = .16). Figure 4.6 displays PCOACH by Group.
Table 4.8 Opportunity, Openness, and Coaching

<table>
<thead>
<tr>
<th>gp</th>
<th>stat</th>
<th>opp</th>
<th>otc</th>
<th>pcoach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors</td>
<td>Mean</td>
<td>3.35</td>
<td>2.97</td>
<td>3.46</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.31</td>
<td>0.48</td>
<td>0.49</td>
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</tr>
<tr>
<td>Min</td>
<td>2.71</td>
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<td>2.40</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>3.86</td>
<td>4.00</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>SEM</td>
<td>0.07</td>
<td>0.11</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>Hourly employees</td>
<td>Mean</td>
<td>3.35</td>
<td>3.12</td>
<td>3.25</td>
</tr>
<tr>
<td>N</td>
<td>70</td>
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</tr>
<tr>
<td>SD</td>
<td>0.45</td>
<td>0.46</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>1.71</td>
<td>2.00</td>
<td>1.20</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>5.00</td>
<td>4.00</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>SEM</td>
<td>0.05</td>
<td>0.06</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>3.35</td>
<td>3.09</td>
<td>3.29</td>
</tr>
<tr>
<td>N</td>
<td>89</td>
<td>89</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.42</td>
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<tr>
<td>Min</td>
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<td>1.20</td>
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<tr>
<td>Max</td>
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</tr>
<tr>
<td>SEM</td>
<td>0.04</td>
<td>0.05</td>
<td>0.07</td>
<td></td>
</tr>
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</table>
4.16 Summary of Opportunity, Openness, and Coaching

Participants generally agreed with Peer support (PS) and groups were similar in PS. Supervisor support (SSUP) was significantly higher for Supervisors than Hourly employees, while Supervisor sanctions (SSAN) was significantly lower for higher for Supervisors than Hourly employees. Because statistically significant differences were found between groups in SSUP and SSAN, null Hypothesis 3 was rejected.

4.17 Summary of Research Question 1 Results

Significant results from Research Question 1 are displayed in Table 4.9. Supervisor and Hourly employees groups were similar in Personal Factors of learner readiness, motivation to transfer, personal capacity for transfer, negative personal outcomes, Transfer effort-performance expectations, and Performance self-efficacy. These findings failed to reject Null Hypothesis 1. Supervisors scored significantly higher than Hourly employees in positive personal outcomes and Performance-outcomes expectations. These findings rejected Null Hypothesis 1.
Supervisor and Hourly employees groups were similar in Training Factors of Training Validity and Training Design. These findings failed to reject Null Hypothesis 2.

Supervisor and Hourly employees groups were similar in Work Environment Factors of Peer support, Opportunity to use, Openness to change, and Performance coaching. These findings failed to reject Null Hypothesis 3. Supervisors scored significantly higher than Hourly employees in Supervisor support, while Hourly employees scored significantly higher than Supervisors in Supervisor sanctions. These findings rejected Null Hypothesis 3.

Table 4.9. Statistically Significant Findings from Research Question 1

<table>
<thead>
<tr>
<th>Training Transfer Factor</th>
<th>Significant Result</th>
<th>Hypothesis rejected</th>
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</thead>
<tbody>
<tr>
<td><strong>Personal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive personal outcomes</td>
<td>Supervisors &gt; Hourly employees</td>
<td>Null Hypothesis 1</td>
</tr>
<tr>
<td>Performance-outcomes expectations</td>
<td>Supervisors &gt; Hourly employees</td>
<td>Null Hypothesis 1</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td>No Significant Results</td>
<td>&lt;none&gt;</td>
</tr>
<tr>
<td><strong>Work Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor support</td>
<td>Supervisors &gt; Hourly employees</td>
<td>Null Hypothesis 3</td>
</tr>
<tr>
<td>Supervisor sanctions</td>
<td>Hourly employees &gt; Supervisors</td>
<td>Null Hypothesis 3</td>
</tr>
</tbody>
</table>

4.18 Hypothesis Testing for Research Question 2: Supervisor Interviews

Research Question 2. From the perspective of interviewed supervisors, did the required training implemented as part of the acquisition process change the motivation to transfer?

Null Hypothesis 4. The required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors.
A total of six supervisors agreed to and participated in interviews using a semi-structured format as discussed in chapter 3. Of this group, three supervisors had been employed for 21 – 25 years; two supervisors had been employed for 31 plus years; and, one supervisor had been employed for 26 – 30 years. Using a coding system to compare the interviews, the researcher developed a series of summary statements to capture the themes found in the six interviews. From these summaries, a one-sentence theme statement was developed from the four main interview questions to further clarify and refine the responses through utilization of the grounded theory process. The results of these findings are provided below:

Interview Q1: What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?

Interview Q1 Theme: Significant organizational change was introduced immediately related to the safety culture.

- A dramatic change is found in safety training with Company A having a much stronger safety-based culture in comparison to Company B. Company A enforces the safety rules and holds managers accountable at each level on safety performance. Fear and confusion were experienced initially by managers and employees as they sought to learn the rules and act upon them in an efficient and timely manner. The main aspect found within Company A’s safety culture was the introduction of accountability for managers who failed to enforce safety rules and procedures. Managers would receive forms of discipline including 5 to 30 days off without pay or termination of employment. One side effect noted in the interviews was a change in supervisors’ decision making. Supervisors would defer many safety-related decisions to their managers for fear of making a mistake and receiving discipline. However, supervisors mentioned that they did not see any other way to quickly introduce a dramatic change unless fear of discipline was used as a motivator.

- Senior managers from Company A spent significant time discussing safety changes and ensuring that managers attended safety training, but only mid-level managers received this training. Furthermore, the training did not always
find its way to front-line supervisors. The interviewees noted that initially there was considerable confusion since many things were introduced without consideration for the current state and nature of the existing equipment of Company B. In other words, the safety policy, when introduced, did not take into account that some aspects of the policy could not be functionally implemented without a complete production shut down. In many of these instances, production would be shut down for months until new equipment was introduced or processes re-engineered.

Interview Q2: What aspects were introduced that either positively or negatively affects training transfer by employees and how did this relate to job performance changes?

Interview Q2 Theme: Fear was a strong motivational factor in the transfer process.

- Many interviewees stated that fear was the major driving factor to motivate employees to change job performance. Considerable training occurred and still occurs but fear was the driver to produce change. A side effect of fear was fatigue with good employees leaving for fear of being fired for an accident or procedure violation caused by fatigue.

- Another factor that emerged was that Company A did fully support the safety training and performance culture which was evident in the immediate response to shut down equipment and removal or repair of equipment to ensure safety was maintained at Company A standards. This was a major change from Company B’s practices. Second, the open support of upper management to ensure, enforce and maintain employee accountability in relation to safety culture was noted.

- Supervisors noticed that employees with the highest tenure of employment, greater than 20 years, had an easier time making this change than employees who had been at the company from 5 to 15 years. The rationale behind this observation is that highly-experienced employees already knew and respected the safety dangers so they welcomed the change toward improved safety and they had experienced similar changes in the past 20 plus years. Their experience with previous changes introduced a level of flexibility that allowed
this employee group to make an adjustment easier than the less experienced group. This did not mean that the change process was easy for them for it was still difficult to break old habits and methods that had been used for years. The openness to accept these changes was higher among the more experienced employees.

Interview Q3: What motivational changes were introduced by the new organization and how did managers and employees react to them?

Interview Q3 Theme: Employee discipline and high level of accountability was introduced and maintained.

- While it was understood that accountability was necessary to ensure performance change and adoption of safety values, the existing culture had discipline policies in place that many believed were too harsh. The reaction of supervisors was neither against the concept of discipline nor against the introduction of the safety culture. Most, if not all, the employees saw the value both in personal terms and for the company as a whole to adopt a greater safety-awareness culture. A major issue was the introduction of the degree of discipline with immediate 5 to 30 days off without pay or termination as the only disciplinary option. While the supervisors interviewed admitted that the strict level of discipline did produce the necessary changes quickly, they questioned if this form of discipline was too severe and if good employees left due to the level of fear and pressure related to job stress. In some cases, the supervisors themselves experienced time off without pay.

Interview Q4: What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?

Interview Q4 Theme: Several culturally-related components were introduced to promote training and reinforce cultural change.

- Introduction of daily safety meetings as well as monthly safety meetings reinforced the training and transfer into job performance. The level of investigation and the publishing of the investigation results to the entire
company (all locations in Company A) were strong motivating factors to improve job performance. In addition, the level of responsibility of managers significantly increased related to safety. With the introduction of Company A’s inventory control and production reporting processes, managers’ expectations are now rooted in the safety culture, thus additional time is required to ensure permits are filled out correctly, employees remain current on required safety training, employees maintain safety focus in performing job procedures, safety meetings are conducted according to company policy, and additional paperwork is required.

The interview process provided a level of additional insight that was not possible by use of a questionnaire alone. The interviews provided a means to establish cultural aspects of the organization in relation to training transfer and organization change and showed how these two variables influenced each other. Chapter five discusses these findings in relation to the questionnaire and how these relate to the hypotheses and research question of this study.

4.19 Summary of Hypothesis Testing for Research Question 2: Supervisor Interviews

Null Hypothesis 2 proffered that the required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors. This Null Hypothesis was rejected. The required training implemented as part of the acquisition process changed the motivation to transfer from the perspective of interviewed supervisors.

4.20 Hypothesis Testing for Research Question 3: Safety Record History

Research Question 3. Does the required training implemented as part of the acquisition process leads to improved performance outcomes?

Null Hypothesis 5. The rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training.

The final aspect in relation to data collection is to review a four-year record of the safety OSHA recordable frequency for the acquired organization. This record includes
data prior to the acquisition (2006) and three years after the acquisition (2007 – 2009). This information is based on OSHA-required reporting data and is a lagging indicator of the safety performance for all industry within the United States. As demonstrated in Figure 4.7, a significant decline in safety accidents occurred during the three years immediately following the acquisition. The process to calculate the rate is based on a formula as established by OSHA. The formula is:

\[
\text{Number of Recordable Cases} \times \frac{200,000}{\text{Number of Man hours}} = \text{Number of Man hours}
\]

According to the Occupational Safety and Health Administration (2010), a recordable case is defined as a work-related or occupational injury or illness that is significant enough to require medical treatment. The level of medical treatment is beyond simple first aid but requires a more comprehensive level of medical care. In addition the employee cannot work a full shift and cannot perform all of the routine job duties. According to OSHA, a job duty is any regular work activity that is performed at least once per week. For example, an employee is injured at work and the level of first aid is a small bandage and a low dose pain reliever. This level of injury would not be considered a recordable case. An example of a recordable case would be an injury where an employee requires treatment for a fracture. The level of injury is such that the employee cannot work a full shift and is unable to perform normal job duties. Therefore, the level of injury and resulting forms of treatment are the indicators if the incident is considered an OSHA recordable incident.

As shown in Figure 4.7, a significant reduction in the recordable incident frequency did occur as the safety culture and associated safety training was provided and incorporated into the acquired organization (Company B). The rating in 2006 for Company B was constant with the historical rating for the organization over the past twenty years. The 2006 rating was significantly higher than the OSHA rating established in 2007. The introduction of the strong safety-based organizational culture began at the onset of the third quarter of 2007. The impact of this change is apparent in the near 50% reduction in safety recordable rating from the 2006 number. This
decline continued in the subsequent two years following the acquisition. This information and the relationship to this study will be discussed further in chapter five.

Figure 4.7. OSHA Safety Record

4.21 Summary of Results

The results of the LTSI questionnaire, supervisor interviews, and safety record of OSHA answer the research statements presented in chapter one. This research provided insight into the nature of transfer between two employee groups within the organization under study. Both groups demonstrated through the questionnaire that a level of difference does exist in certain areas related to the training received. Likewise, differences exist in relation to how these two groups view training within the organization as a whole. Additional supervisor interviews provided insight into the aspects of the planned organizational change that possibly were the driving force in how employees of both groups responded to training and training transfer. Finally, the exact impact of this culture change and associated training is further evidenced in the safety record of the acquired company with a noticeable decline in safety-related injuries over a four-year period of time.

Data gathered as part of this study provided the necessary level of information to effectively answer the questions presented in chapter one of this study. The ability to
investigate the perception of individuals in a work setting presents certain challenges, however, by using a mixed methods approach, the researcher is able to create a picture of how members of the organization responded to planned organizational change and the associated impact upon training transfer. The analysis of these findings in relation to the purpose of this study is discussed in chapter five.
Chapter 5- Discussion

5.0 Introduction

This study examined if differences in transfer existed between supervisors and hourly employees at a manufacturing facility. This chapter presents the findings of the study. An interpretation of the findings and causal linkages are discussed. The chapter concludes with a discussion of the study’s limitations and recommendations for future research.

The importance of training for an organization can be considerable. However, the ability to translate training into employee performance can be difficult to fully assess due to the variables that both directly and indirectly impact the transfer of training from learning content to job performance. The variables presented in the literature review and incorporated into the LTSI questionnaire provide a level of insight into how members of an organization transfer learning and what variables seem to have the greatest impact. Investigating transfer in a specific area of training utilizing both the LTSI questionnaire and examination of the lived experiences of managers as they seek to learn and adapt to a new organization provided additional insight into the training transfer process and how this process occurred in this field setting. As established in chapter one, the context of the training process under investigation focused on learning activities and supervisory actions utilized by managers and hourly employees during the integration of a newly-acquired organization into a strong safety-based organizational culture. This analysis was gained from data collected over a two-month period as employees attended required safety training.

5.1 Purpose restatement

The purpose of this study was to assess the efficacy of the individual trainee and the quality of the training program implemented as part of a new safety program introduced into a recently-acquired company. This study focused on the personal factors, training factors, and work environment factor differences between supervisors and hourly employees. Further, supervisors were interviewed to determine whether
the required training implemented as part of the acquisition process changed the motivation to transfer. Lastly, the overall outcome of the safety training was examined to ascertain if a change in safety performance was achieved. Three research questions were explored and five hypotheses were tested.

5.2 Restatement of Research Questions and Hypotheses

*Research Question 1.* Following training implemented as part of the acquisition process, do supervisory personnel and hourly employees significantly differ in personal, training, and work environment training transfer factors?

*Null Hypothesis 1.* Supervisory employees do not significantly differ from hourly employees in LTSI Personal Factors.

*Null Hypothesis 2.* Supervisory employees do not significantly differ from hourly employees in LTSI Training Factors.

*Null Hypothesis 3.* Supervisory employees do not significantly differ from hourly employees in LTSI Work Environment Factors.

*Research Question 2.* From the perspective of interviewed supervisors, did the required training implemented as part of the acquisition process change the motivation to transfer?

*Null Hypothesis 4.* The required training implemented as part of the acquisition process did not change the motivation to transfer from the perspective of interviewed supervisors.

*Research Question 3.* Does the required training implemented as part of the acquisition process leads to improved performance outcomes?

*Null Hypothesis 5.* The rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training.
5.3 Significance Restatement

This line of investigation provides organizational leaders with a level of understanding in how supervisors and hourly employees transfer training. The differences and similarities that existed between these two groups in training transfer provide organizational leaders insight toward development of effective training and ensure transfer occurs.

5.4 Data Collection

Data for this study was collected by means of the Learning Transfer System Inventory (LTSI) questionnaire and supervisor interviews. The LTSI was administered to 101 employees who attended multiple mandatory one-day safety training sessions. Six one-day training sessions were conducted over a two-month period. A total of 89 questionnaires were utilized for the study. Seventy hourly employees and 18 supervisory employees completed the questionnaires. Twelve questionnaires were discarded for incomplete information or failure to answer a question. A MANOVA was performed using SPSS software. Six supervisor interviews were conducted using a semi-structured format. Four interrelated questions were asked. The supervisors responded to these questions and added additional information. The interview data provided further insight into the statistical results.

5.5 Results and Discussion: Research Question 1

5.5.1 Personal Factors

The first hypothesis was based on the supposition that Personal Factors related to training transfer may differ between supervisors and hourly employees in specific training transfer concepts. These concepts were the individual trainee, the training design and the work environment. Differences between supervisors and hourly employee perceptions in individual trainee efficacy, learner motivation, and outcome expectation were examined. The LTSI, with nine constructs that examine transfer from the individual trainee perspective, was utilized. These constructs evaluated specific aspects of the individual’s cognitive ability, motivation to learn, motivation to
transfer, and the individual’s expectations after transfer. These nine constructs considered training and transfer as separate aspects in the training process. For example, the learner readiness construct examined the individual’s willingness to participate in the training event. Positive personal outcomes investigated the individual’s belief that transfer leads to improved job conditions. These nine constructs, when taken together, formed a picture of the individual trainee. The comparison produced the following picture:

5.5.1.1 Learner readiness (lr)

Learner readiness (lr) was defined as the extent to which individuals are prepared to enter and participate in training. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.

5.5.1.2 Motivation to Transfer (mt)

Motivation to Transfer (mt) was defined as the direction, intensity and persistence of effort toward utilization of skills and knowledge learned in a work setting. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.

5.5.1.3 Positive personal outcomes (ppo)

Positive personal outcomes (ppo) was defined as the degree to which applying training on the job leads to outcomes that are positive for the individual. The LTSI results for this construct indicated a significant difference existed between supervisors and hourly employees. This finding rejected Null Hypothesis 1.

5.5.1.4 Negative personal outcomes (npo)

Negative personal outcomes (npo) was defined as the extent to which individuals believe that not applying skills and knowledge learned in training will lead to
outcomes that are negative. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.

5.5.1.5 Personal capacity for transfer (pct)

Personal capacity for transfer (pct) was defined as the extent to which individuals have time, energy and mental space in their work lives to make changes required to transfer learning on the job. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.

5.5.1.6 Transfer effort-performance expectations (tep)

Transfer effort-performance expectations (tep) was defined as the expectation that effort devoted to the transfer of learning will lead to changes in job performance. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.

5.5.1.7 Performance-outcomes expectations (poe)

Performance-outcomes expectations (poe) was defined as the expectation that changes in job performance will lead to valued outcomes. The LTSI results for this construct indicated a significant difference exists between supervisors and hourly employees. This finding rejected Null Hypothesis 1.

5.5.1.8 Openness to change (otc)

Openness to change (otc) was defined as the extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training. No significant difference was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.
5.5.1.9 Performance self-efficacy (pse)

Performance self-efficacy (pse) was defined as an individual’s general belief that he is able to change his performance when desired. No significant difference was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 1.

5.5.2 Training Design

The second hypothesis was based on the possibility that supervisory employees may differ from hourly employees in specific training transfer factors. These concepts included the training design and the perceived content validity of the training, when taken together, formed a picture of the actual training event.

5.5.2.1 Perceived content validity (pcon)

Perceived content validity (pcon) was defined as the extent to which trainees’ judge training content to reflect job requirements accurately. No significance was found between supervisors and hourly employees, so null hypothesis 2 was not rejected.

5.5.2.2 Transfer design (td)

Transfer design (td) was defined as the degree to which training was designed and delivers to give trainees the ability to transfer learning on the job. No significance was found between supervisors and hourly employees, so null hypothesis 2 was not rejected.

5.5.3 Work Environment

The third hypothesis was based on the possibility that supervisory employees and hourly employees may differ in Work Environment Factors related to training transfer. To determine these differences, the LTSI Factors of Peer support, Supervisor support, and Supervisor sanctions, Opportunity to use, Openness to change, and Performance coaching were contrasted between Supervisor and Hourly employee
groups. These six constructs, when taken together, form an overall picture of the work environment factors related to training transfer.

5.5.3.1 Peer support (ps)

Peer support (ps) was defined as the extent to which peers reinforce and support the use of learning on the job. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 3.

5.5.3.2 Supervisor support (ssup)

Supervisor support (ssup) was defined as the extent to which supervisors-managers support and reinforce use of training on the job. The LTSI results for this construct indicated a significant difference existed between supervisors and hourly employees. This finding rejected Null Hypothesis 3.

5.5.3.3 Supervisor sanctions (ssan)

Supervisor sanctions (ssan) was defined as the extent to which individuals perceive negative responses from supervisors-managers when applying skills learned in training. The LTSI results for this construct indicated a significant difference existed between supervisors and hourly employees. This finding rejected Null Hypothesis 3.

5.5.3.4 Opportunity to use (opp)

Opportunity to use (opp) describes the extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job. No significance was found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 3.

5.5.3.5 Performance coaching (pcoach)

Performance coaching (pcoach) was defined as the formal and informal indicators from an organization about an individual’s job performance. No significance was
found between supervisors and hourly employees. This finding failed to reject Null Hypothesis 3.

In summary, statistically significant findings between Supervisors and Hourly employees were revealed for Positive personal outcomes, Performance-outcomes expectations, Supervisor support, and Supervisor sanctions. These results are discussed below.

### 5.6 Discussion of Findings for Research Question 1

Supervisors and hourly employees have different levels of responsibilities and tasks within the company, yet both groups value a safe work environment. Of the LTSI constructs, four showed a level of significance between supervisors and hourly employees. The significance illustrated a level of difference. However, to understand why differences occurred, it is necessary to examine the supervisor interviews. The interviews provided a means to explore why differences exist. Six supervisor interviews were conducted using a semi-structured format. Four interrelated questions were asked. The supervisors responded to these questions and added additional information.

#### 5.6.1 Supervisor Sanctions

Hourly employees showed a greater significance than salaried employees in supervisor sanctions. A possible reason for this difference was the hourly employees’ fear of discipline. Supervisors received considerably more direction, training, and coaching from their superiors toward understanding the safety program. The hourly employees also received training; however, it was from their direct supervisors. In this union environment, a level of mistrust already existed between supervisors and hourly employees. This combination of increased training and mistrust culminated in an increased level of fear. The supervisor was fearful of discipline related to safety violations; therefore, the supervisor increased disciplinary measures on hourly employees. Hourly employees’ fear increased as supervisors tried to translate newly-formed skills and training to performance by their employees.
The increased fear of discipline was intentional. The supervisor interviews noted fear was a dominate change factor. One supervisor noted, “Change occurred and training and retraining to current Company A policies took place. We had an increase in training but training did not occur until several months later into the acquisition process. Some departments went first in production, then other departments followed and this took time. Biggest thing is that all incidents are preventable and zero accidents are a big paradigm shift from Company B. It was an eye opener especially the aspect of fear because of the people being sent home, mostly management, for violation of safety.” Another supervisor stated: “Company B was lax compared to Company A. Punishment was lax but Company A believed in punishment for employees. The culture was fear-based driven by plant managers who tried to get safety into why we do these things and a way to get attention to safety.”

The overall aim of the new management team was to increase safety performance by both salaried and hourly employees. To break old cultural viewpoints, safety training was increased and accountability to maintain safety was increased. Accountability was achieved through employee discipline. The level of increased safety training introduced by Company A was translated by hourly employees as a sanction. The design of the safety training was to convey routines and processes that were a critical part of the safety-based procedures and ultimately the safety-based culture of Company A. Hourly employees had significantly higher results compared to supervisors for these tasks which are routinely performed daily by hourly employees. These tasks were a part of the required safety functions of the department.

This viewpoint was illustrated by one supervisor who stated: “Company A does put a lot on safety and backs it up with money spent on safety... More focus on equipment, safety railings, removal of old parts, use of locks are some examples. Employee engagement to bring issues to you and funds to make changes was a big difference.” Consequently, it was expected that hourly employees demonstrate a level of proficiency related to task performance and correspondingly more familiar knowledge of the materials presented in the training. Therefore, the possibility for this group to receive disciplinary action was higher in the viewpoint and opinion of these employees. These employees were required to use these job tasks more frequently. This action, in turn, created a higher level of fear as illustrated by this construct.
Vroom’s Expectancy Theory (1964) stipulates an employee will be motivated to perform an action if they perceive that outcome as producing something positive for them. If the outcome of the training is perceived as a positive result for the individual, then the trainee will want to attend training and subsequently transfer. Supervisors approached sanctions as a necessary aspect for transfer to occur. This was in contrast to the hourly employees’ viewpoint on sanctions. The premise of expectancy theory is that the employee will perceive a level of value. This value should be great enough that required actions to obtain this value would be accomplished. Regarding supervisor sanctions, the value outcome of increased safety with increased accountability was viewed as a more valuable outcome by supervisors compared to hourly employees. Hourly employees placed greater negative emphasis on sanctions and lessened the value of the training and transfer accordingly. In other words, the increase in safety training was not considered a negative aspect but the increase in employee accountability was considered a negative aspect. The result was that supervisory sanctions were considered necessary by supervisors to achieve the intended valued outcome.

5.6.2 Supervisor Support

Supervisors indicated a higher level of support compared to hourly employees. This difference may be the result of supervisors receiving more direction and overall more training. Supervisors received a higher level of support as they themselves learned and adapted to new safety mandates. Supervisors were under considerable pressure to implement safety procedures, but this increased the motivation to transfer. One supervisor stated: “Now that the rules are different, I found greater value for the training” and another responded by stating: “Heavy education and lots of training. The more training we had, the more we improved.” The use of fear as a motivational factor for transfer surfaced in the interview data (supervisor sanctions); however, the supervisors also expressed greater levels of support.

Supervisors comments centered on action by upper management to support safety in completion of job tasks. One supervisor stated: “Main difference you had management backing and you need management to back it (safety) if it’s going to
work. When we started training, there was some confusion since you had different thoughts on how to do things, and this was massive at first. Supervisors learning new rules who did not fully understand that there was a problem. We were constantly just getting there and it was hard on supervisors to learn and then pass on to employees.”

Another supervisor stated: “Company B talked the talk, but did not walk the walk. Training itself did not occur even when it was requested and it was requested for years. Everything was OJT (on-the-job training) but this did not mean it was good training. Company A was more involved and up front with employees. Issues of honesty with employees were important and also the little things like dropping a joint (50’ length of pipe) were to be reported.”

The emphasis on safety by upper management translated as support for the supervisors. Training was viewed as a critical aspect to improve employee safety. Under Company B, safety training was requested but not received. Transfer under these conditions would be difficult, if not impossible. However for Company A, the value of training and transfer were viewed as critical for implementation of safety procedures. While supervisors expressed some level of confusion in trying to understand newly-introduced safety procedures, they received considerable support from their managers.

The increase in supervisor support created a level of perceived value for the supervisors. The interviews demonstrated that upper management actively encouraged, supported, and even demanded changes in safety performance. Therefore, training was considered more valuable for the supervisors compared to the hourly employees. The training and transfer were parts of the overall aim of upper management to instill new safety practices into supervisors directly. This value is aligned with Vroom’s Expectancy Theory (1964). The supervisors were motivated to perform newly-acquired safety training. The supervisors perceived transfer as producing something positive for them. Training outcomes were perceived as a positive result for this employee group. Hourly employees placed less emphasis on support. This may be the result of confusion for as the supervisors learned new procedures, a level of confusion existed between supervisors and hourly employees. Supervisor support was extended by upper management to supervisors at a greater
level compared to support extended by supervisors to hourly employees. This created a higher level of perceived value for the supervisors.

5.6.3 Positive Personal Outcomes

Supervisors indicated a higher level of positive personal outcomes compared to hourly employees. The changes introduced by Company A to increase employee safety focused initially on supervisors. Supervisors were considered the primary point of management within the production areas. This approach provided a level of leadership in the implementation of the safety culture for hourly employees.

The element of fear was an ongoing factor for hourly employees. While hourly employees agreed with the intentional nature of increased safety, they did not agree with the level of discipline. One supervisor stated: “Increase in training and safety awareness. It impacted everyone with safety. 100% different approach from Company B. Company B did not have a safety program. Safety was just not a priority, but it is with Company A. I do agree with the intent but sometimes they send the wrong message. Employees agree with the intent, but do not care for the discipline. Discipline helped impact us as a whole, but employees were afraid. They used scare tactics to get the point across that it was necessary. It was the best way to really work because it was the only way to break past 50 years of lack of safety emphasis and the only way to introduce accountability.” Another supervisor noted: “The fear was high. You have to have the element to stop the old ways of doing things but you cannot continue in fear. I was not afraid to ask but we all were afraid until we got to the point we were comfortable about how to work. The downfall of Company B was the perception that union employees felt they could not be fired. And at times that happened but now you will be fired for breaking a safety rule. However you do need a level of fear to maintain control.”

Supervisors and hourly employees reacted with a level of fear to the accountability introduced. However, the positive reaction of supervisors to the outcome may be a reflection of the ongoing relationship between these two employee groups. The safety culture of Company B indicated an absence of accountability compared to Company
A. The interviews suggested that supervisors under Company B repeatedly requested training: “Company B talked the talk but did not walk the walk. Training itself did not occur even when it was requested and it was requested for years. Everything was OJT (on-the-job training) but that did not mean it was good.” The supervisors realized a value trade-off would occur with an increase in safety.

The level of accountability introduced was accepted by the supervisors as necessary. Supervisor interviews indicated this acceptance: “There was a lot of fear but this was necessary. We had to move beyond the flavor of the month and, to do so required that we introduce consequences and we had to then follow through with them. It was encouraged before but no preventative action was taken such as the introduction of cardinal rules or the enforcement of those rules. We had all the same rules as Company A but not the enforcement.” The removal of barriers of transfer required increased employee accountability. The hourly employees’ reaction to this change in enforcement was reflective in positive personal outcomes. The hourly employees viewed the personal outcome less positively due to the level of accountability introduced. The supervisors realized that for increased safety to actually occur in the organization, increased accountability for all employees was necessary. The increase in safety was of more value and offset the demands of increased accountability. In other words, the increased accountability produced levels of fear in both employee groups. However, the increase in safety outweighed the demands of increased accountability. This value is aligned with Vroom’s Expectancy Theory (1964). The supervisors understood, accepted, and valued this trade off.

5.6.4 Performance-outcomes expectations

The general construct, Performance-outcomes expectations, is defined as, the extent to which an individual believes the application of skills and knowledge learned in training “will lead to recognition that he or she values.” This includes perceptions about the extent to which a link between development, performance, and recognition in his or her organization is established. It involves perceptions about the clarity with which performance expectations are articulated, the extent to which individuals are recognized or rewarded for performance improvement, and the degree to which the
organization has created an environment in which individuals feel good about performing well (Bates & Holton 2004, p. 158).

Supervisors indicated a higher level of performance-outcomes expectations compared to hourly employees. The difference may be related to level of exposure and accountability. As stated in the supervisor interviews, the level of commitment and enforcement of the safety procedures were priorities for the new management team. These priorities were communicated to the supervisors. The level of motivation and perception of outcome expectations changed in comparison to previous practices within Company B. The hourly employee group may have continued to value the previous practices of Company B, in which case, the level of value and motivation corresponded to a difference in expectation and outcome related to transfer. In other words, the supervisors as a group valued safety training outcomes at a higher level than the hourly group.

This difference is not an indication that hourly employees were against an increase in safety and a safe work environment. The recurring issue from the interviews was that the increase in accountability created a reaction from both employee groups. The reaction was received more positively with supervisors compared to hourly employees. Both groups reacted with a level of fear; however, supervisors indicated a greater willingness to accept increased accountability. A possible reason for this difference was reflected in the process of integration performed by the acquiring company. The acquisition approach consisted of placing experienced managers from Company A into senior level management positions at Company B. This action allowed for these managers to begin the process of training and moving Company B to align with Company A’s safety processes and procedures.

This process required time for the existing supervisors to learn the new methods and procedures. Supervisors had to undergo training sessions in key aspects of the safety program of Company A in addition to the training received as part of this field study. This training had to then be incorporated into the daily practices of the departments. During this process, levels of confusion and lack of understanding occurred that required senior management to continue to coach and reinforce these new processes
with the supervisors. For example, one interviewed supervisory participant, when asked about the acquisition process, stated “that the main difference was that you had management backing and you need management to back it if it’s going to work. When we started training, there was some confusion initially since you had different thoughts on how to do things and this was massive at first. Rules were being learned by supervisors who did not fully understand. As supervisors, we were constantly just getting there and it was hard on supervisors to learn and then pass on to employees the new procedures.”

At the time of this investigation, Company B had been in process for a year-and-a-half; thus, while hourly employees had a level of understanding related to safety procedures, there was still a knowledge gap between supervisors and hourly employees in their understanding of these processes. One supervisor noted that: “a lot of us did not go to other mills to see what they were doing and to see examples. Only a small number did get to go and this made it hard. Supervisors trying to make change happen did not understand and they had a lot of employees wanting to know what to do. No one said ‘here is an example to see how to do it’. None of us really knew what they wanted and they wanted it now! It was hard to understand what they wanted, and so the supervisor was caught in the middle and this has left many issues with managers. Managers are in fear of doing something wrong so they do nothing or go to an extreme trying to avoid a mistake.”

While confusion existed among both employee groups, supervisors received additional training initially compared to the hourly employees. This allowed the supervisors to develop greater appreciation for the safety training and safety culture of Company A. As a group, the supervisors began to understand and value the desired outcome of increased safety and increased accountability compared to the hourly employees. This value aligned with Vroom’s Expectancy Theory (1964) which postulates that motivation to perform an action is based on a positive outcome. If the performance-outcomes expectations of the safety training and employee accountability were perceived as a positive result for the employee, then the employee would want to attend training and subsequently transfer. Supervisors approached
accountability as a necessary aspect for desired performance-outcomes to occur. This was in contrast to hourly employees' viewpoint on increased accountability.

5.7 Summary of Research Question 1 Discussion

The study examined expectancy and transfer differences between two employee groups in a field setting of safety training. Within this study, supervisors in one manufacturing organization were interviewed to understand their experiences in relation to an increased safety training required by senior management to improve overall employee safety performance. In addition to interviews, supervisors and hourly employees were surveyed to examine how these groups reacted to the training-transfer process and to determine if supervisors reacted and transferred training differently than hourly employees.

Research findings concluded that in specific areas, supervisory and hourly employees perceived and reacted to training differently. An explanation for this difference was directly related to the difference in perceived value these two employee groups assigned to increased employee accountability. Organizational leadership could not assume that all employees would react to training in the same way even if the reason for the training was the same across all departments. Employees reacted differently based on their different perceptions.

The final and fundamental deciding factor regarding the effectiveness of training and transfer was determined by a change in performance. In this research, OSHA recordable data substantiated the fact that transfer did occur. The number of accidents that occurred in the acquired organization decreased significantly in number in a period of only a few years. Interview data acknowledged that training was a contributing factor in this reduction.

As established in the research literature, transfer is a fundamental and crucial element in employee training. The ability to take information that was developed into knowledge from a training event and translate that knowledge into action that, in turn, produces a change in job performance contributing to the goals of the organization is
the basic tenet for why organizations invest in training. The findings of this study demonstrated that employees approached training from different perspectives and motivators that fundamentally influenced why they chose to transfer training into workplace performance. An organization that understands and addresses how employees react to training and transfer differently will gain greater benefits by integrating methods and means that will encourage and promote effective transfer.

Furthermore, managers and supervisors have a direct impact on transfer climate and employee transfer and play a significant role in creating the transfer climate by means of feedback, reinforcement, encouragement, and provision of a means for employee application in post-training situations (Tannenbaum 1997; Yamnill & McLean 2001; Gaudine & Saks 2004; Bates & Khasawneh 2005; Hawley & Barnard 2005; Saks & Belcourt 2006; Burke & Hutchins 2007). The perceived experiences of supervisory employees of the acquired company in relation to an increase in training as implemented as part of the acquisition process is directly associated with these hypotheses and research question. An understanding of the supervisory employees experiences as found in the interview portion of this study provides additional insight into why employees responded to the questionnaire the way they did and how this was translated into results for the organization related to training, transfer, and performance change.

The findings of this study provided insight into understanding that transfer can be effectively initiated; however, the methods to facilitate this transfer may not always be well-received by members of the organization. The effectiveness and expediency of performance change will occur when an organizational push for changes stimulates employees’ willingness to transfer information and knowledge into change-related job performance. However, increased employee accountability, an underlying current of fear based on disciplinary practices, and increased pressure to change old practices and procedures may also occur.
5.8 Research Question 2: Supervisor Interviews regarding Motivation to Transfer

For Research Question 2, Null Hypothesis 4 was rejected because the required training implemented as part of the acquisition process changes the motivation to transfer from the perspective of interviewed supervisors.

The supervisor interviews paint a picture of a strong safety-based operational culture which was directly mandated and implemented by the new management team. Interviewee A stated this by noting an, “Increase in training and safety awareness. It impacted everyone with safety. 100% different approach from company B. Company B did not have a safety program. Safety was just not a priority but it is with Company A.” Likewise, interviewee C stated: “Biggest thing is that all incidents are preventable and zero accidents are a big paradigm shift from Company B.” The change in overall approach in the culture of the company was translated into a how the training was viewed and approached by both employee groups.

Furthermore, other participants stated in the interviews that the level of accountability related to safety significantly increased with Company A. This placed considerably more pressure on both supervisors and hourly employees. This increased pressure acted as a facilitator for the training transfer to occur. The interviewed participants referenced the level of fear that was introduced into the organization. This fear centered on an employee who was terminated from employment for failure to follow and complete core aspects of the safety program and procedures. One interviewed participant mentioned that this fear was necessary to break old habits that existed in Company B which promoted a poor safety culture. Participant C stated, “there was a lot of fear but this was necessary. We had to move beyond the flavor of the month and to do so required that we introduce consequences and we had to then follow through with them. Before it was encouraged, but no preventative action such as the introduction of cardinal rules or the enforcement of those rules was in place. We had all the same rules as Company A but not the enforcement. I lived by them for my safety but I was not held accountable for them like I am now.” Another participant echoed this by stating “The fear was high. You have to have the element to stop the old ways of doing things; “…likewise another stated “Fear was the factor that made
changes stick.” As these examples demonstrate, fear was a tool to introduce and establish the desire to transfer. This is substantiated in the level of transfer reflected in the constructs.

A demonstration of this can be seen in the generally high scores on the LTSI construct of Performance self-efficacy. Holton, et al (2000, p. 344) defines the Performance self-efficacy construct as “An individual’s general belief that they are able to change their performance when they want to. The extent to which individuals feel confident and self-assured about applying new abilities in their jobs and can overcome obstacles that hinder the use of new knowledge and skills.” In relation to the current study, Company A initiated several safety-related policy and procedural changes to align Company B to its safety culture. The introduction of training, policy changes, stronger employee accountability, and enhanced or improved safety requirements were included in this change process.

As found in the interviews, the senior managers of Company A ensured that employees had the opportunity to use safety-related procedures on the job. Safety is given a top priority by Company A and employees were expected to perform new procedures. One interviewed participant stated “Safety contacts, review of incidents, safety meetings held daily. Before, pressure did not occur unless you screwed up really bad but now if you screw up, you are sent home for discipline reasons. All this did impact performance. Employees made to question actions before taking them. Safety performance did change to some degree. Some incidents that did get reported did not make sense. Small issues still required a report…Big difference between Company A & B approaches to safety. Safety first really is a core value. They will shut it down to take care of it if it is a safety issue. Upper management is heavy on support. Day 1 they did talk it but doubts did occur but over time saw changes really did occur. VPP (old safety program with Company B) did not happen due to lack of management support. If upper management does not support it then it doesn’t happen.” This level of upper management support and increased emphasis on safety provided employees with a higher level of motivation to transfer.

While there is an overall pattern of similarity between the two groups in relation to twelve LTSI factors, four areas of differences were shown to be statistical significant.
The first factor of *Positive Personal Outcomes* is defined by Holton (1998): “The degree to which applying training on the job leads to outcomes that are positive for the individual.” There are several possible reasons for the difference between these two groups. As noted in the interviews, the safety training began with the supervisors primarily followed by safety training for hourly employees. The initial exposure to the importance of safety and the desire for safety to become a core value in the company culture was communicated to supervisors. Supervisors were considered the primary point of management within the production areas. Therefore, the level of training was higher with this employee group. This rationale and approach could have been to provide a level of leadership in the implementation of the safety culture for hourly employees. As already established in the literature, supervisory level of support and feedback in post-training reinforcement could create an atmosphere to either encourage transfer positively or produce significant barriers to transfer and performance changes (Clarke 2002).

The outcomes of “safety as a core value” were established in this setting related to the safety culture to the supervisors and, therefore, their level of motivation is higher compared to the hourly employee group. The aspect of motivation and outcome expectations will differ within the confines of each organizational and group setting (Song, et al. 2006); however, a level of difference existed between these groups in both this situation and organizational conditions. This difference may be related to level of exposure and level of accountability. As stated in the supervisor interviews, the level of commitment and enforcement of the safety procedures were priorities for the new management team. These priorities were communicated to the supervisors; and thus, their level of motivation and perception of outcome changed in comparison to previous practices within Company B. The hourly employee group may continue to value the previous practices of Company B, in which case, the level of value and motivation correspond to a difference in expectation and outcome related to transfer. In other words, the supervisors as a group valued safety training outcomes at a higher level than the hourly group. Furthermore, in the interviews the supervisors mention that several mid- aged-range hourly employees expressed difficulties and frustration adapting and accepting the new safety-based culture.
Supervisors interviewed pointed out that the highly-experienced unionized work forces, employees with job tenure greater than 21 years, did not have the same level of difficulty making task-related adjustments than other younger and less experienced employees. For example, Participant E noted in the interview that, “The senior group changed easier than other groups. They were used to it.” Similarly Participant F stated that “Older employees had an easier time making changes than the middle range employees. The older employees have seen things. They have seen deaths and injuries and as a result, have learned from them. The 10-15 year employees had a hard time since they had more experience than younger employees but not as much experience as the older employees.” At the time of the acquisition, the majority of the hourly workforce consisted of highly-tenured employees with considerable experience, which is reflected in the demographic data of the unionized hourly workforce participating in the questionnaire. As shown in Table 4.1, employees with tenure greater than 21 years equaled to 56 employees or 66% of the employees surveyed. Likewise, some of the interview participants stated that while there was a level of fear in relation to the increased level of employee accountability, the overall intention of increased safety was welcomed by many of the employees of the older age groups. The issue of fear as a means to introduce change was a recurring theme in the interviews as demonstrated in the next construct-supervisor support.

The construct Supervisor Support, defined as the extent to which supervisors-managers support and reinforce use of training on the job, showed that supervisors demonstrated a higher level of improvement, perception or ability compared to hourly employees\(p < .05; t=.036\). A possible reason for this difference is reflected in the process of integration performed by the acquiring company. The acquisition approach consisted of placing experienced managers from Company A into senior level management positions at Company B. This action allowed for these managers to begin the process of training and moving Company B culture to align with the organizational culture of Company A.

This process required time for the existing supervisors to learn the new methods and procedures. Supervisors had to undergo training sessions in key aspects of the core safety culture of Company A in addition to the training received as part of this field study. This training had to then be incorporated into the daily practices of the
departments. During this process, levels of confusion and lack of understanding occurred that required senior management to continue to coach and reinforce these new processes with the supervisors. For example, one interviewed supervisory participant, when asked about the acquisition process, stated “that the main difference was that you had management backing and you need management to back it if it’s going to work. When we started training, there was some confusion initially since you had different thoughts on how to do things and this was massive at first. Rules were being learned by supervisors who did not fully understand. As supervisors, we were constantly just getting there and it was hard on supervisors to learn and then pass on to employees the new procedures.”

At the time of this investigation, the acquisition and cultural alignment of Company B had been in process for a year-and-a-half; thus, while hourly employees had a level of understanding related to safety procedures, there was still a knowledge gap between supervisors and hourly employees in their understanding of these processes. One interviewed participant noted that “a lot of us did not go to other mills to see what they were doing and to see examples. Only a small number did get to go and this made it hard. Supervisors trying to make change happen did not understand and they had a lot of employees wanting to know what to do. No one said ‘here is an example to see how to do it’. None of us really knew what they wanted and they wanted it now! It was hard to understand what they wanted and so the supervisor was caught in the middle and this has left many issues with managers. Managers are in fear of doing something wrong so they do nothing or go to an extreme trying to avoid a mistake.”

The ability to change from one culturally-grounded methodology to another methodology is difficult. The ability to bring about change in a planned organizational acquisition can be both dramatic and difficult on all employees. The ability to change requires a catalyst that introduces a level of stimulation which in turn allows the desired change to be accepted by an established group. In the organization reviewed in this research study, the catalyst is employee accountability as expressed in terms of fear of termination of employment or employee discipline. However in relation to transfer, this catalyst encouraged employees to transfer training into job performance change. For instance, when one participant was asked during the interview to discuss the motivational changes introduced and how employees reacted to these changes, this
supervisor mentioned how fear was both positive and negative by stating, “there was a mixed reaction among people. The fear was great as I was wondering if I am breaking a rule and not understanding the consequences. It was positive with regard to a decrease in injuries with people impressed at the high rate of change. Training and other factors introduced higher awareness to prevent an injury. It was just an acceptance of this just happens under the old system but now we understand the focus and how it produced a difference.”

In relation to the construct of Supervisor Support, supervisors received a higher level of support as they themselves learned and adapted to new cultural mandates related to safety; whereas, the hourly employees expressed a lower level of perception, ability or improvement. Supervisors were under considerable pressure as fear of employee termination or discipline were introduced, but this allowed the desired change to occur and increased the motivation to transfer the training received as one interviewee noted “Now that the rules are different, I found greater value for the training” and another responded by stating “Heavy education and lots of training. The more training we had, the more we improved.” The use of fear as a motivational factor, reason for transfer, and ultimately the catalyst behind a cultural change surfaced in the interview data. However, data gained from the LTSI questionnaire regarding the opportunity to use information learned did not show a significant difference between the two groups. One possible explanation is that while supervisors expressed some level of confusion in trying to gain an understanding of newly-introduced safety procedures, they were still willing to have the hourly employees perform the safety procedures. As the interview data demonstrates, these supervisors actively encouraged, supported, and even demanded that these changes in safety performance occur.

At this point the third construct of Supervisor Sanctions becomes relevant. Supervisor Sanctions is defined by Holton (1988) as the “Extent to which individuals as perceive negative responses from supervisors or managers when applying skills learned in training.” As the interview data demonstrates, supervisors received considerably more direction, training, and coaching toward understanding the safety program; however, this process also included increased levels of accountability that led to an increased level of fear for the employee. Likewise, the level of confusion and fear increased as supervisors tried to translate newly-formed skills and training for their employees.
One interviewed employee noted, “change occurred and training and retraining to current Company A policies took place. We had an increase in training but training did not occur until several months later into the acquisition process. Some departments went first in production then other departments followed and this took time. Biggest thing is that all incidents are preventable and zero accidents are a big paradigm shift from Company B. It was an eye opener especially the aspect of fear because of the people being sent home, mostly management, for violation of safety.” Therefore it is logical to conclude that the level of confusion and fear related to accountability and employee discipline as well as the difficulties of the 10 – 15 year hourly employee group to adapt and accept the new safety culture produced a difference in perspective related to this construct. The level of confusion and fear introduced by Company A was translated by hourly employees as sanctions even through the overall aim of the new management team was to increase safety performance within the hourly group.

The perception of this goal for safety performance to increase was not completely evident in how this group viewed sanctions. The design of the safety training is to convey routines and processes that are a critical part of the safety-based procedures and ultimately the safety-based culture of Company A. It is understandable for hourly employees to have higher survey results in this construct compared to supervisors for these are tasks which are routinely performed every day by the hourly employee group. These tasks are the required safety functions of the department such as controlling stored energy using an employee personal safety lock or lock out-tag out or confined-space entry procedures. This viewpoint is illustrated by one interviewed who stated that “Company A does put a lot on safety and backs it up with money spent on safety… More focus on equipment, safety railings, remove old parts, use of locks are some examples. Employee engagement to bring issues to you and funds to make changes was a big difference.” Consequently, it is expected that hourly employees demonstrate a level of proficiency related task performance and correspondingly more familiar knowledge of the materials presented in the training. Therefore, the possibility for this group to receive discipline is higher in the viewpoint and opinion of these employees who are required to use these job tasks more frequently and this in turn will create a higher level of fear as expressed through this construct.
The ability to change from one culturally-grounded methodology to another methodology was difficult. The ability to bring about change in a planned organizational acquisition was both dramatic and difficult on all employees. The ability to change required a catalyst that introduced a level of stimulation which in turn allowed the desired change to be accepted by an established group. In the organization reviewed in this research study, the catalyst was employee accountability as expressed in terms of fear of termination of employment or employee discipline. However in relation to transfer, this catalyst encouraged employees to transfer training into job performance change. For instance, when one participant was asked during the interview to discuss the motivational changes introduced and how employees reacted to these changes, this supervisor mentioned how fear was both positive and negative by stating, “There was a mixed reaction among people. The fear was great as I was wondering if I am breaking a rule and not understanding the consequences. It was positive with regard to a decrease in injuries with people impressed at the high rate of change. Training and other factors introduced higher awareness to prevent an injury. It was just an acceptance that this just happens under the old system, but now we understand the focus and how it produced a difference.”

5.9 Research Question 3: Training and Transfer Outcomes

Transfer is not considered fully effective if it does not translate into some form of positive performance change or improvement that is beneficial for the organization. The supervisors received more attention and accountability as a whole compared to the hourly group which may have created higher level of expectancy among this employee group. Supervisors expressed a higher degree of transfer in relation to hourly employees in select constructs, but this may have been a direct result of the approach of Company A used to introduce the safety culture. This leads to the third research question and associated findings.

Null Hypothesis 3 proffered that the rate of recordable safety cases per man-hour of work is similar following the implementation of safety training compared to before the training. This Null Hypothesis was rejected.
In 2006, Company B had an OSHA recordable rate of 9.08. The acquisition was finalized at the end of the first quarter of 2007. At this time, Company A began the process of introducing its safety culture. As evidenced by the interviews, this process occurred over a period of time of two years. By the end of 2007, the recordable rate began to significantly decrease to 4.69 and this decline continued with year 2008 at 2.15 and finally with year 2009 at a rate of 1.93. This reduction was considered to be a direct result of the introduction of the safety culture by Company A with training denoted as a significant contribution to this process. The null hypothesis is rejected. Furthermore, as Holton (2004) established in his model, transfer is a combination of processes, perceptions, and motivational factors that combine to produce the ability and the result of transfer. The outcome of the model indicated that expected organizational results occurred that either derived in part or wholly from the objectives of the training. Individual job performance had to change in order to be aligned with or achieve organizational results. In other words, effective transfer occurred when individual job performance changed in such a way that the intended or desired organizational results were also achieved.

Previous research explored the various factors affecting training transfer especially in determining how policies of an organization and actions of its members can directly and indirectly impact the transfer process. Researchers in the area of transfer conducted studies in a variety of field settings, and in doing so, demonstrated to varying degrees the mechanics associated with transfer and effective transfer (Baldwin & Ford 1988; Salas & Cannon-Bowers 2001; Holton 1996, 2005; Tannenbaum 1997; Yamnill & McLean 2001; Gaudine & Saks 2004; Bates & Khasawneh 2005; Hawley & Barnard 2005; Burke & Hutchins 2007). Holton developed the Learning Transfer System Model and the associated Learning Transfer System Inventory questionnaire (Holton 1996, 2005) to further explore the factors associated with the complexities of transfer and to build a constant means to evaluate transfer across various organizational settings. Building from this base, the purpose of this present study was to explore transfer in a field setting.

Through the context of a field setting, the fundamental aim of this study is to understand and examine if supervisory and hourly employees react to and transfer training differently. Different avenues were necessary to provide insight and
understanding into why these differences exist. For these reasons, the perceived experiences of supervisory employees of the acquired company were also examined. The combination of data provided further understanding into why factors are different between these two groups and the associated impact upon transfer. A final element examined if an increase in required training would lead to improved performance expectations and outcomes.

Research findings concluded that in specific areas supervisory and hourly employees perceive and react to training differently which has an associated influence on transfer. An explanation for this difference may be directly related to the difference in job responsibilities and job focus of these two employee groups. Supervisors’ job functions are more general in nature and overarching in scope while hourly employees are more task-focused on specific, routine job tasks. Each employee group has different job functions so each group reacts to training and transfer based on these job functions. Organizational leadership cannot assume that all employees will react to training in the same way even if the reason for the training is the same across all departments. Employees react differently based on their different perceptions and job needs. The final and fundamental deciding factor regarding the effectiveness of training and transfer is determined by a change in performance. In this research, OSHA recordable data substantiated the fact that change did occur. The number of accidents that occurred in the acquired organization decreased significantly in number in a period of only a few years. Interview data acknowledged that training was a contributing factor in this reduction.

5.10 Summary of Research Question 3: Training and Transfer Outcomes

The objective of the training was in direct correlation to the introduction of the safety culture. Effective transfer was achieved when the safety processes and tasks performed by employees, as expressed in individual performance, were aligned with desired and intended organizational results. The organizational goal was a reduction in safety accidents. Safety accidents were reported as OSHA recordable rate. The recordable rate was reduced following the introduction of the stronger safety culture and continued to decline in the two years following this introduction. Additionally, supervisors interviewed substantiated the increase in training and employee
accountability occurred during this time; therefore, it was reasonable to postulate that transfer occurred. As Holton's model established, a combination of factors induced transfer which was supported by the interview data. When motivational influences of increased employee accountability and a willingness by upper management to improve overall employee safety were introduced, the transfer process was likewise affected.

5.11 Limitations

This research study is limited to managers, supervisors, and hourly employees in one manufacturing organization in the United States. Findings have a limited generalizability to business entities whose workforce does not consist of a two-tier structure of hourly and supervisory/managerial employees. There are several limitations in this study that deserve mention. First, the study rested heavily upon self-report data, so it is possible that personal biases or the ability to recall information may have impacted the study results. At the direction of senior management, only supervisors were interviewed which produced some limitations into understanding factors that influenced transfer for hourly employees. Conclusively, the meaning placed on the effectiveness of transfer and improved job performance was dependent on participant self-report. No third party observation was obtained to ensure job-related behavior or performance changes occurred. Acting on good faith, the researcher reported the findings truthfully and without biasness as Creswell (2003, p. 67) observed “Other ethical issues in writing the research will involve the potential of suppressing, falsifying, or inventing findings to meet a researcher’s or an audience’s needs.” In other words, ethical consideration was not limited to data collection but extended to the writing and presentation of findings. The researcher sought to provide an honest presentation of the findings and analysis.

Second, the survey instrument for the entire sample population employed a five-scale Likert format. While the LTSI is an established tool as demonstrated in the literature and research methodology, the nature of the Likert scale limited the range of findings generated to only the particular questions within the survey. Additional instruments were not incorporated into this study to ascertain more fully the scope of participants’
behavior or cognitive abilities. The literature does indicate that employee behavior and intelligence are contributing factors in effective transfer. Finally, the meaning placed on the effectiveness of transfer and improved job performance was dependent on participant self-report. Due to the design of the study, the findings may not be generalized to other populations.

Third, the sample was a relatively small population. This sample population consisted of 89 employees within one company. This limitation was further apparent in relation to the breakdown of hourly employees and supervisor employees. The two groups being compared were unequal in population, with hourly employees being much larger than supervisors. Supervisors consisted of 18 employees. Furthermore, the sample's demographic makeup consisted of all males and geographically located within one region of the United States. The population was derived from a heavy manufacturing facility. The workforce structure consisted of a two-tier structure of hourly and supervisory employees. Other employee groups such as executive, administrative or professional employees are not included within this study.

The research methodology, by its very nature, created limitations. This study did not include a pre- or post-analysis of the population to determine transfer beyond the one-day safety training sessions. Additionally, the supervisor interviews consisted of four semi-structured questions. While the participants were free to discuss additional information, the nature of the interviews consistently remained centered on these four questions. No follow-up observations or analysis occurred beyond this time frame. The study was confined to a two-month time period and limited to safety training in a classroom setting. The format of the training was lecture-based with video and power points. Training of a technical nature, online, or use of other instructional design modalities was not utilized as part of this study.

5.12 Recommendations for Further Research

Previous research explored the various factors affecting training transfer especially in determining how policies of an organization and actions of its members can directly and indirectly impact the transfer process. Researchers in the area of transfer
conducted studies in a variety of field settings, and in doing so, demonstrated to varying degrees the mechanics associated with transfer and effective transfer (Baldwin & Ford 1988; Salas & Cannon-Bowers 2001; Holton 1996, 2005; Tannenbaum 1997; Yamnill & McLean 2001; Gaudine & Saks 2004; Bates & Khasawneh 2005; Hawley & Barnard 2005; Burke & Hutchins 2007). Holton developed the Learning Transfer System Model and the associated Learning Transfer System Inventory (LTSI) questionnaire (Holton 1996, 2005) to further explore these factors associated with the complexities of transfer and to build a constant means to evaluate transfer across various organizational settings. Developing from this base, this study examined how supervisory and hourly employees reacted to and transferred training differently. The data provided a level of understanding into why factors were different between these two groups. Building on this research study, recommendations were made for future research.

Training was utilized as a tool by senior management to introduce stronger safety processes and to increase employee accountability to encourage and ensure employee transfer. Transfer has a causal relationship to produce intentional outcomes for the organization as this study demonstrates. Additional research into transfer differences in other organizational settings would further enhance transfer research as to its effectiveness.

Future researchers may want to employ a longitudinal design that allows for better control and observation of the learning transfer effect on employees. Replication of this study using a much larger sample, using equal groups for comparison would enhance the validity of the study. Using additional methods for measuring learning transfer among employees would provide validation of findings (e.g. other instruments, pre-test/post-test format, secondary data or organization records if obtainable).

Future research should examine these two employee groups using a larger sample population. While the number of hourly employees typically exceeds the number of supervisors in a business organization, a future area of research should be to examine these groups in a larger context. The need to address the demographic make-up should be included. A study that includes female employees as well as other minority groups
who function in supervisory and hourly roles will be beneficial. Likewise, the geographical location should be expanded to include other regions within the United States and other parts of the global community. An example would be to examine expectancy and transfer differences of supervisor and hourly employee groups within the United States and Europe. The LTSI has been validated in French, Arabic, Portuguese, Taiwanese and Mandarin Chinese. Utilizing the LTSI to conduct research in multiple countries and business settings would be beneficial.

Training was utilized as a tool by senior management to introduce stronger safety processes and to increase employee accountability to encourage and ensure employee transfer. Transfer has a causal relationship to produce intentional outcomes for the organization as this study demonstrated. Additional research into transfer differences in other organizational settings would further enhance transfer research.

The LTSI is an established tool, as demonstrated in the literature that has been used in multiple organizational types (Holton et al 2003). It had not been used to compare these particular employee groups in different types of business organizations. This study occurred in a heavy manufacturing organization. Thus, one potential area of research would be to compare transfer between supervisors and hourly employees groups in different structures and markets such as retail, hotel and tourism, technology sector, or automotive. Supervisory roles exist in other formats as exemplified by executive, administrative and professional employee groups. An understanding of how other employee groups in diverse business markets view transfer would be beneficial.

Future areas of research should include other research methodologies. The LTSI uses a Likert scale which limits the range of findings generated to only specific questions asked within the survey. Additionally, this study rested heavily upon self-reporting of each study participant in a single training setting. Expanded future research should include behavioral and cognitive instruments as well as third party observations and interviews of all study participants. This may include pre- and post-training analysis over a longer period of time. An expansion of the research methodology would provide a more detailed picture of how these transfer differences exist between these
employee groups. Moreover, an expansion would further limit intentional or unintentional researcher biasness and provide richer data for analysis and comparison.

A final area for future research would be to include other forms of training and instructional design modalities. Further research should include other forms of training content and delivery. Technical training, online delivery, and training over longer periods of time should also be examined. An example of a possible study would be to provide online training on issues of diversity and investigate transfer differences between supervisors and hourly employees. Given the findings of this study, investigation of different avenues of transfer differences in other field settings and forms of training design will give researchers additional approaches for collecting data.

5.13 Conclusion

The rapidly-changing and competitive global workplace requires business organizations to become more effective in the recruitment and development of a skilled and efficient workforce. For this workforce to reach, maintain, and even expand organizational objectives, many organizations utilize employee training as a means toward achieving this goal. To ascertain the effectiveness of training, however, requires that training be viewed as not only the transmission of information and knowledge to the employee, but also to determine how this knowledge is transferred into effective changes in employee job performance.

The purpose of this study was to examine the training transfer process in a field setting to determine if differences in transfer existed between two distinct employee groups. This study strengthened the body of training transfer research for practitioners in the disciplines of Training and Development and Human Resource Management. The investment in training for many organizations is significant and the need to ensure a return on this investment is critical in achieving success for the organization. By understanding the transfer differences between employee groups, organizational leaders can ascertain the external factors of transfer design and work environment and their impact on the quality of transfer.
The rapidly-changing and competitive global workplace requires business organizations to become more effective in the recruitment and development of a skilled and efficient workforce. For this workforce to reach, maintain, and even expand organizational objectives, many organizations utilize employee training as a means toward achieving this goal. To ascertain the effectiveness of training, however, requires that training be viewed as not only the transmission of information and knowledge to the employee but also to determine how this knowledge is transferred into effective changes in employee job performance. By investigating transfer in a specific area of training using a survey process as well as examining, by means of the interview process, the lived experiences of managers as they seek to learn and transfer are identified in the transfer.

These differences appear related to each employee group’s job focus and level of responsibilities to some degree. However, the added process of acquisition produced a significant impact on training and transfer. A level of confusion and fear was experienced by both supervisors and hourly employees as new processes and methods were integrated into the acquired organization. This confusion and fear was a significant factor with the introduction of increased employee accountability. Employee accountability was the driver that encouraged transfer and ultimately job performance change. For leaders of organizations undergoing similar changes, these findings provide insight into how an organization can emphasize the role of transfer in the process to achieve the desired job performance change.

The present study found statistically significant differences between supervisors and hourly employees in training transfer Personal Factors of Positive personal outcomes and Performance-outcomes expectations, as well as in Work Environment training transfer factors of Supervisor support and Supervisor sanctions. Supervisor interviews highlighted changes in the motivation to transfer training and incident data revealed that OSHA safety incidents dropped to less than one-quarter of the rate prior to training. Combined, these results demonstrate the key role of motivation to transfer in training outcome and highlight the importance of training transfer motivation in management.
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Appendices

Appendix A - Learning Transfer System Inventory Questionnaire

Please circle to indicate if you are the following employee classification:

Salaried management    Unionized employee

Please circle to indicate your years of service:

0-5 yrs.  
6-10 yrs.  
11-15 yrs.  
16-20 yrs.  
21-25 yrs.  
26-30 yrs.  
31 + yrs.

This survey is completely voluntary and you are not required to take this survey if you choose to.
If you choose to take this survey please answer each question based on your perception. All results will remain confidential.
Please do not place your name on the survey.

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Learning Transfer System Inventory

Please circle the number (1, 2, 3, 4 or 5) to the right of each item that most closely reflects your opinion about training.

1 - Strongly disagree 2 - Disagree 3 - Neither agree nor disagree
4 - Agree 5 - Strongly agree

For the following items, please think about THIS SPECIFIC TRAINING PROGRAM:

1. Prior to the training, I knew how the program was supposed to affect my performance.
2. Training will increase personal productivity.
3. When I leave training, I can’t wait to get back to work to try what I learned.
4. I believe the training will help me do my current job better.
5. I get excited when I think about trying to use my new learning on my job.
6. If I successfully use my training, I will receive a salary increase.
7. If I use this training I am more likely to be rewarded.
8. I am likely to receive some ‘perks’ if I use my newly learned skills on the job.
9. Before the training, I had a good understanding of how it would fit my job-related development.
10. I knew what to expect from the training before it began.
11. I don’t have time to try to use this training.
12. Trying to use this training will take too much energy away from my other work.
13. The expected outcomes of this training were clear at the beginning of the training.
14. Employees in this organization are penalized for not using what they have learned in training.

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For the following items, please think about THIS SPECIFIC TRAINING PROGRAM:

15. If I use what I learn in training, it will help me get higher performance ratings.
   1 2 3 4 5

16. Employees in this organization receive various ‘perks’ when they utilize newly learned skills on the job.
   1 2 3 4 5

17. If I do not use my training I am unlikely to get a raise.
   1 2 3 4 5

18. I am more likely to be recognized for my work if I use this training.
   1 2 3 4 5

19. My workload allows me time to try the new things I have learned.
   1 2 3 4 5

20. There is too much happening at work right now for me to try to use this training.
    1 2 3 4 5

21. If I do not use new techniques taught in training I will be reprimanded.
    1 2 3 4 5

22. Successfully using this training will help me get a salary increase.
    1 2 3 4 5

23. If I do not utilize my training I will be cautioned about it.
    1 2 3 4 5

24. When employees in this organization do not use their training it gets noticed.
    1 2 3 4 5

25. I have time in my schedule to change the way I do things to fit my new learning.
    1 2 3 4 5

26. Someone will have to change my priorities before I will be able to apply my new learning.
    1 2 3 4 5

27. I wish I had time to do things the way I know they should be done.
    1 2 3 4 5

28. My colleagues appreciate my using new skills I have learned in training.
    1 2 3 4 5

29. My colleagues encourage me to use the skills I have learned in training.
    1 2 3 4 5

30. At work, my colleagues expect me to use what I learn in training.
    1 2 3 4 5

31. My colleagues are patient with me when I try out new skills or techniques at work.
    1 2 3 4 5

32. My supervisor meets with me regularly to work on problems I may be having in trying to use my training.
    1 2 3 4 5

33. My supervisor meets with me to discuss ways to apply training on the job.
    1 2 3 4 5

34. My supervisor will object if I try to use this training on the job.
    1 2 3 4 5

35. My supervisor will oppose the use of techniques I learned in this training.
    1 2 3 4 5

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For the following items, please think about THIS SPECIFIC TRAINING PROGRAM:

36. My supervisor thinks I am being less effective when I use the techniques taught in this training.
37. My supervisor shows interest in what I learn in training.
38. My supervisor opposes the use of the techniques I learned in training.
39. My supervisor sets goals for me that encourage me to apply my training on the job.
40. My supervisor lets me know I am doing a good job when I use my training.
41. My supervisor will not like it if I do things the way I learned in this training.
42. My supervisor doesn’t think this training will help my work.
43. My supervisor helps me set realistic goals for job performance based on my training.
44. My supervisor would use different techniques than those I would be using if I use my training.
45. My supervisor thinks I am being ineffective when I use the techniques taught in training.
46. My supervisor will probably criticize this training when I get back to the job.
47. The instructional aids (equipment, illustrations, etc.) used in training are very similar to real things I use on the job.
48. The methods used in training are very similar to how we do it on the job.
49. I like the way training seems so much like my job.
50. I will have the things I need to be able to use this training.
51. I will be able to try out this training on my job.
52. The activities and exercises the trainers used helped me know how to apply my learning on the job.
1 - Strongly disagree 2 - Disagree 3 - Neither agree nor disagree
4 - Agree 5 - Strongly agree

For the following items, please think about THIS SPECIFIC TRAINING PROGRAM:

53. It is clear to me that the people conducting the training understand how I will use what I learn.
54. The trainer(s) used lots of examples that showed me how I could use my learning on the job.
55. The way the trainer(s) taught the material made me feel more confident I could apply it.
56. The resources I need to use what I learned will be available to me after training.
57. I will get opportunities to use this training on my job.
58. What is taught in training closely matches my job requirements.
59. The situations used in training are very similar to those I encounter on my job.
60. There are enough human resources available to allow me to use skills acquired in training.
61. At work, budget limitations will prevent me from using skills acquired in training.
62. Our current staffing level is adequate for me to use this training.
63. It will be hard to get materials and supplies I need to use the skills and knowledge learned in training.
For the following items, please THINK ABOUT TRAINING IN GENERAL in your organization.

64. The organization does not really value my performance.

65. My job performance improves when I use new things that I have learned.

66. The harder I work at learning, the better I do my job.

67. For the most part, the people who get rewarded around here are the ones that do something to deserve it.

68. When I do things to improve my performance, good things happen to me.

69. Training usually helps me increase my productivity.

70. People around here notice when you do something well.

71. The more training I apply on my job, the better I do my job.

72. My job is ideal for someone who likes to get rewarded when they do something really good.

73. People in my group generally prefer to use existing methods, rather than try new methods learned in training.

74. Experienced employees in my group ridicule others when they use techniques they learn in training.

75. People in my group are open to changing the way they do things.

76. People in my group are not willing to put in the effort to change the way things are done.

77. My workgroup is reluctant to try new ways of doing things.

78. My workgroup is open to change if it will improve our job performance.

79. After training, I get feedback from people on how well I am applying what I learn.

80. People often make suggestions about how I can improve my job performance.

81. I get a lot of advice from others about how to do my job better.

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For the following items, please THINK ABOUT TRAINING IN GENERAL in your organization.

82. I am confident in my ability to use new skills at work. 1 2 3 4 5
83. I never doubt my ability to use newly learned skills on the job. 1 2 3 4 5
84. I am sure I can overcome obstacles on the job that hinder my use of new skills or knowledge. 1 2 3 4 5
85. At work, I feel very confident using what I learned in training even in the face of difficult or taxing situations. 1 2 3 4 5
86. People often tell me things to help me improve my job performance. 1 2 3 4 5
87. When I try new things I have learned, I know who will help me. 1 2 3 4 5
88. If my performance is not what it should be, people will help me improve. 1 2 3 4 5
89. I regularly have conversations with people about how to improve my performance. 1 2 3 4 5
Appendix B - Permission to Use the LTSI Questionnaire

Learning Transfer Systems Inventory Research Agreement

Permission is hereby granted to use the Learning Transfer Systems Inventory (LTSI), an organizational assessment instrument, owned by Elwood F. Holton III and Reid A. Bates. Permission is granted to the following people for the timeframe, payment and purposes specified below:

| Permission granted to: (Name, company, address, phone number, e-mail, etc.) | Jason Edwards  
1611 Valley Brook Lane  
Longview, Texas 75605 |
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<td>Purpose</td>
<td>PhD based study in the effectiveness of training in a union environment. I am studying the perceived value and emphasis toward training between union employees and management employees to explore if their perspective shapes how training is received and implemented in a manufacturing organization.</td>
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<td>Time Period</td>
<td>Dec 2009 to Jan 2010</td>
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<tr>
<td>Other Conditions</td>
<td>None that I am aware of and I fully agree with the conditions as stated in the agreement. This study is only in accordance with my goal of thesis completion as stated for my graduate program.</td>
</tr>
<tr>
<td>Payment</td>
<td>Waived on the condition that the instrument is used for research purposes only and not for any service for which the user receives a salary or other monetary compensation. Otherwise the LTSI will be provided at a cost of U.S. $6.00 per copy.</td>
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It is understood that, by agreeing to use the Learning Transfer Systems Inventory, you are accepting the following conditions:

1. Any use other than that specified above is prohibited without prior written authorization by
the authors (E. F. Holton III & R. A. Bates).

2. No changes whatsoever can be made to the LTSI without prior written consent of the authors.

3. The authors retain full copyright authority for the LTSI and any translations that are
developed as a result of granting this permission. Therefore, the LTSI cannot be copied or
reproduced in any fashion without the authors’ prior written consent. Every copy must carry
the following copyright notice

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4. Discussion and presentation of the LTSI will accurately reflect the composition of the
instrument and will use only original scale names, scale definitions, and item groupings.

5. If the LTSI is to be translated into a new language as part of this project, the authors of the
LTSI must be included in the translation process as per their supplemental instructions.

6. A copy of all data collected with the instrument must be given to the authors free of charge
and in a timely manner. This data will only be used for research purposes and will not be
reported in such a manner that would identify individual organizations, without written
permission of the organization.

7. Unless otherwise acceded, the authors will share in the authorship of any publications that
result from the use of the instrument or the data collected with the LTSI.

8. The authors reserve the right to withdraw the LTSI from use at any time if any terms or
conditions of this agreement are violated.

9. Any reports published or presented resulting from data collected using the LTSI shall clearly
indicate that instrument authors did not participate in preparing the reports.

10. By signing this agreement, LTSI users acknowledge that the scoring algorithms will be
retained by the authors and that the data collected with the LTSI must be submitted to the
authors for scoring.

TWO COPIES of this Permission Agreement should be signed and returned to indicate your
agreement with the above restrictions and conditions. A fully executed copy will be returned to
you for your records. Upon receipt of the signed agreement and payment of any applicable
royalty/license fee you will be sent a copy of the LTSI that you may reproduce.

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Elwood F. Holton III or Reid A. Bates, LTSI authors

Date

Thanks!
Appendix C - Informed Consent for Participation in Research Activities

Participant name:

Principal Investigator: Jason Edwards, doctoral candidate, Southern Cross University, Lismore, New South Wales, AU.

Title of Research Project: A Study of Factors Affecting Training Transfer between Supervisors and Unionized Employees in a Manufacturing Organization.

1. I, ____________________, agree to participate in the research study being conducted by Jason Edwards under the direction of Jerry Clover, Ph.D.

2. The overall purpose of this research study is: To understand the lived experiences of managers and employees as managers seek to facilitate training transfer of the acquiring organization’s safety based culture and what is the perception of the managers and employees regarding training in general for the organization.

3. My participation will involve the following: I will participate in a face-to-face interview with the principal investigator lasting an hour. During the interview my response to questions about my experiences as an employee.

4. My participation will not extend beyond an hour. The interview will be conducted at a mutually agreed upon location and time.

5. I understand that the possible benefits to my organization or society from this research are:

   This study will provide insight into the role managers and supervisors affect training transfer during an organizational merger and acquisition. This will provide greater understanding into how organizational change impacts the manager / supervisor and the employee. With increase knowledge training
professionals and organizational leaders will have the ability to leverage training to ensure intended results.

6. I understand that there are certain risks and discomfort associated with this research including providing personal opinions or identifiable information therefore I understand my participation is voluntary and I may refuse and withdrawn my consent at any time.

7. I understand that the investigator will take all reasonable measures to protect the confidentially of my records and my identity will not be revealed within this publication or any publications that result from this study.

8. I understand that the investigator will answer any inquiries I may have regarding this research study.

9. I understand that I will be informed of any significant new findings that develop during the course of my participation in this study that may also have a bearing on my willingness to continue participation in this study.

10. I understand to my satisfaction the information regarding my participation in this research study. All questions that pertain to this study have been answered to my satisfaction and I hereby consent to participate in the research described above.

Participant’s Signature                                      Date

Investigator’s Signature                                      Date
Appendix D – Semi-structured Interview Questions & Interviews

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?

2. What aspects were introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?

3. What motivational changes were introduced by the new organization and how did managers and employees react to them?

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?
Interview Participant A

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?
Increase in training and safety awareness. It impacted everyone with safety. 100% different approach from company B. Company B did not have a safety program. Safety was just not a priority but it is with Company A. I do agree with the intent but sometimes they send the wrong message. Employees aggress with the intent but do not care for the discipline. Discipline helped. Impact us as a whole but employees were afraid. The use of scarce tactics to get point across but it was necessary for it was the only way to get point across. It was the best way to really work because it was the only way to break past 50 years of lacking safety emphasis and the only way to introduce accountability.

2. What aspects where introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?
Both positive and negative is the use of scare tactics. Right choice to flood safety into everything and not just polices. Discipline was extreme somewhere too extreme. Did change job performance safety was increase in the job.

Q. How did employees relate to safety when they did not in the past? What was different? Time. Content improved, involvement of hourly employees including adding hour into pretask planning. More time on crane safety. Hard focus on safety of EOT cranes.

3. What motivational changes where introduced by the new organization and how did managers and employees react to them?
Reaction to scare tactics. This did not bother me but only thing we could do was but in and accept it. Introduce it and hold people accountable. Not me but my supervisor had a hard time. They worked with some employees for years and hated to disciple. They couldn’t look the other way,

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?
Introduction to safety, pre-task inspections, weekly and monthly safety meetings. Look at industry as a whole and within company. More information to department had a good impact on some employees. I would say 10% don’t care but majority have good intention. Supervisors needed support needed additional training on how to ID hazards, relate that hazard to employees. Supervisors scared to make a call for fear that incident could introduce disciple to manager. It was a hard transition for everybody because you where use to doing it another way. I did notice that the mid-level employees those who have been here 10-15 years had a harder time making the transition then the 30 year employee. It was harder on the younger employees since the older employees where use to making changes like this for we did it before at least twice in our past. These employees where use to that and could adapt. Initially product emphasis decreased but now 2 ½ years later productivity is increasing.
Interview Participant B

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?
   Company B talked but did not walk the walk, Training itself did not occur even when it was requested and it was requested for years. Everything was OJT but did not mean it was good training. Company A was more involved and up front with employees. Issues of honestly with employees were important and also the little things like dropping a joint (50’ length of pipe) was to be reported.

2. What aspects where introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?
   Safety contacts, review of incidents, safety meetings held daily. Before pressure did not occur unless you screwed up really bad but now if you screw up you are sent home for discipline reasons. All this did impact performance. Employees made to question actions before taking them. Safety performance did change to some degree. Some incidents that did get reported did not make sense. Small issues still required a report. You had to log it even if it did not impact performance and no one got hurt. Did not know why this was a big deal?
   Big difference between Company A & B approach safety. Safety first really is a core value. They will shut it down to take care of it if it is a safety issues. Upper management is heavy on support. Day 1 they did talk it but doubts did occur but over time saw changes really did occur. VPP (old safety program with Company B) did not happen due to lack of management support. If upper management does not support it then it doesn’t happen.

3. What motivational changes where introduced by the new organization and how did managers and employees react to them?
   Had we been doing things right originally we could have made the change easier. Still hard but overall it was easier. Transition was not hard since you saw what you wanted in the Company A program. Employees feel the same as managers about safety. After VPP did handouts but Company A backed it up. It was taken
seriously. Most changes where at production and not material handling. They did not have a pipe yard so they were new to them therefore less involvement. They did a few loading aspects that changed but we adapted well. They would load a few trucks a month while we would load a few hundred a day. All their loading was by rail while we loaded both rail and trucks. It was a different process of them so they adapted to us and we adapted to them. Big changes were in using fall protection to load trucks. Also you could not get on racks at all and the truck driver had to be out of the cap for loading.

No real transition issues but I did confront employees who expressed negatively about the change. One employee did make a comment that why did we need to change? I told him it was because the new owners wanted it this way but he had three choices – quit, buy the company, or change. It decided to change. Now he agrees with why we needed to be “safer” just hard to break old habits and this was frustrating for him but he still changed. Overall employees did not really question the changes for they knew that it was for their safety and they did not want to get hurt. Employee safety performance has improved we have over 400 days without a lost time accident.

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?

The employees just accepted the change but these employees are different then production employees and their processes are different in material handing then in production. The employees had few negative comments we just told them what we wanted and they did it. They needed the job and so it was that simple. Do what we ask and you keep your job but they were not really afraid of losing their jobs either. The employees here work with the attitude of tell me what you want and I will do it so the change was easier then other areas. We are more relaxed in the yard then in the mill and the employees are easier going.
Interview Participant C

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?

   Change occurred and training and retraining to current Company A polices took place. We had an increase in training but training did not occur until several months later into the acquisition process. Some department went first in production then other departments followed and this took time. Biggest thing is that all incidents are preventable and zero accidents are a big paradigm shift from Company B. It was an eye opener especially the aspect of fear because of the people being sent home mostly management for violation of safety.

2. What aspects where introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?

   There was a lot of fear but this was necessary. We had to move beyond the favor of the month and to do so require we introduce consequences and we had to then follow through with them. Before it was encouraged but no preventative action such as the introduction of cardinal rules or the enforcement of those rules. We had all the same rules as Company A but not the enforcement. I lived by them for my safety but I was not held accountable for them like I do now. Personally responsible has always been with me but now I see it out in the organization. Hard part how did I protect you or other employees if I do not know what you really do. A see a welder and I assume he is doing it right. Now I am tasked to engage the employee and make sure they are safe at doing their job. That was hard. Also if you did screw up with something they wanted to find out why and so something about it. Overall training did help and it was necessary to introduce the change

3. What motivational changes where introduced by the new organization and how did managers and employees react to them?

   There was a mix reaction among people. The fear and wondering if I am breaking a rule and not understanding the consequences. It was positive with regard to a decrease in injuries with people impressed at the high rate of change. Training and other factors introduced higher awareness to prevent an injury. It was just an
acceptance of this just happens under the old system but now we understand the focus and how it produced a difference.

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?
A lot of us did not go to other mills to see what they were doing and to see examples. Only a small number did get to go and this made it hard. Supervisors trying to make change happen did not understand and they had a lot of employees wanting to know what to do. No one said here is an example to see how to do it. None of us really knew what they wanted and they wanted it now! How to understand what they wanted and so the supervisor was caught in the middle and this has left many issues with managers. Managers are in fear of doing something wrong so they do nothing or go to an extreme trying to avoid a mistake.
Interview Participant D

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?

100% change – Reason why? It was a real value for employees. Not spoken of only but had real meat to it. After 33 years the safety training was always consent of PPE. Early years we did not have safety meetings but in the 80’s we had more info to employees about safety. Not really enforced for example ear plugs was not a big deal but they started to change during the 80’s but still not a real strong enforcement. Production and safety was first. People got hurt alt it we were better than the 80’s by the time Company a bought us but we will not at their level. Big increase in safety and training. Main difference you had management backing and you need management to back it if it’s going to work. When we started training some confusion since you had different thoughts on how to do things and this was massive at first. Rules being learned by supervisors who did not fully understand. We were constantly just getting there and it was hard on supervisors to learn and then pass to employees. Saw all around and took about 1 ½ years to get through confusion still not there but better. We use to ask for ear plugs and did not always get them but now you need something for safety you go it. Work is second to safety and Company A is really into safety.

2. What aspects where introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?

The fear was high. You have to have the element to stop the old ways of doing things but you cannot continue in fear. I was not afraid to ask but we all were afraid until we got to the point we were comfortable about how to work. Down fall of Company B was union employees felt you can’t fire me and at times that happened but now you will be fired for breaking a safety rule. However you do need a level of fear to maintain control.

3. What motivational changes where introduced by the new organization and how did managers and employees react to them?
We all kept going in the same direction but they did not adapt to us we adapted to them. We saw their passion to make change happen and leadership was determined to keep safety as a core value. I got sent home a few days for discipline and now I see how accountable is needed and is what it is to make change happen.

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?

Occasionally backslid but now with time I don’t. Now that the rules are different I found greater value for the training. Found young guys follow direction well. Employees that are middle range of 5-15 years will screw up more than the older guys. Older guys get the safety changes better then the middle range guys. Younger guys more tech savvy then older guys and can pick up things easier like that. However 5, 10, 15 year guys find a short cut and use it. Older guys tried all that and got hurt or saw someone get hurt so they don’t use short cuts. We (Company B) gave away stuff to promote safety and that did not get us there. Company A gave out stuff but got results because of discipline. Discipline has to be there for it to be credible and change.
Interview Participant E

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?

Company B was lack compared to Company A. Punishment was lacks but Company A believes in punishment for employees. 5 days off, 30 days off using time off without pay does not equal a positive way. The negative impact was shift managers afraid to make decisions. They would defer to next manager up. Decisions further up it gets away from the source it’s too far away to understand the problem.

More decisions not made by people in the department daily. A culture is fear based driven by plant manager trying to get safety into why we do these things and way to get attention. Can’t support that if you have one on one safety conversations with one employee to correct a safety concern but discipline another employee instead of given a safety conversations to correct the behavior then employees see this happen. Therefore fear is the motivator. Add reattribution makes it possible to abuse the intention of the safety program. I have seen upper management violate LOTO but if I did that I would find myself unemployed.

2. What aspects where introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?

Fear was the factor that made changes stick but what happens after that is a change in the work environment. Good employees suffer and work scared then they get to the point that fear is de-motivating them. Did notice older employees use to more changes and they have seen a lot of these types of changes and adjusted to them okay. They knew the intention was good to so they did make these changes stick. I can think of two employees that would be alive today if we had this emphasis on safety back then.

3. What motivational changes where introduced by the new organization and how did managers and employees react to them?

Created more anger in the work place. More distrust in the work place. People don’t understand why it is happening. They understood why it was important but
not why it was not consistent. Older employees understood importance for safety then younger employees but fault level of punishment. The middle range of employees had the most difficult time in changing. This group had the most arbitration and many felt discipline was too harsh. Younger group accepted change more open to it since they lack the experience. The senior group changed easier then other groups. They were use to it. I think you could have the change without the fear. Could have been strong on discipline without the fear. Notice that certain persons used this to fear to beat down other employees told them they were stupid in how they did things as Company B.

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees? Supervisors’ job has changed. The fear gets you fired if you don’t work and union know that supervisors are scared and are trying to use that to their advantage. They (Company A) needs to remember that we inherited a poorly ran mill with a lot of problems that we can’t address due to cost controls. I think the fear has impacted how we learn. While fear has helped employees to learn to be safe I think it has also prevented supervisors from making further decisions. Training has helloed and training was positive and gave value to the employees but change also must be given in the right way. Value driven and not driven by fear. Value in safety drives actions not fear. Thought at first this change was overall going to be positive but that changed when fear was driving the change.
Interview Participant F

1. What impact if any did the organizational shift of a merger and acquisition have upon training transfer as it relates to safety training?

Big difference. Company B thought we worked well at safety with little or no focus. Company A does put a lot on safety and backs it up with money spent on safety.

2. What aspects where introduced that either positively or negatively affect training transfer by employees and how did this relate to job performance changes?

Heavy education and lots of training. The more training we had the more we improved. More focus on equipment, safety railings, remove old parts, use of locks are some examples. Employee engagement to bring issues to you and funds to make changes was a big difference.

3. What motivational changes where introduced by the new organization and how did managers and employees react to them?

Positive reaction to make the change for safety sake and see focus on safety. After 2 years starting to take root. At first high level of fear but I think there is more fear now then at first and this is making it hard for supervisors and employees to make decisions. Managers have accepted consequences and some have been sent home on discipline.

4. What additional influences outside of training impact either positively or negatively the training transfer process for managers and employees?

Older employees had an easier time making changes then the middle range employees. The older employees have seen things. They have seen the deaths and injured and have learned from them. The 10-15 year employees had a hard time since they had more experience then younger employees but not the same as the older employees. The experience I think will get easier as time moves on and we get use to it. I do think there is more tension between management and union but this is because Company A has increase accountability and the union does not stand for the level of discipline. I don’t see change issues with the older guys as I
do with the younger ones. I think the relationship with strong accountable is one reason for the tension but that is to be expected anyway.