

THE FLIP SIDE OF ORGANIZATIONAL ENCOUNTER: DEVELOPING AND TESTING
A MODEL OF VETERAN EMPLOYEE UNCERTAINTY AND INFORMATION
SEEKING ABOUT NEW EMPLOYEES

By

ERIN BETH GALLAGHER

A dissertation submitted in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

WASHINGTON STATE UNIVERSITY
Edward R. Murrow College of Communication

August 2010

© Copyright by ERIN BETH GALLAGHER, 2010
All Rights Reserved

© Copyright by ERIN BETH GALLAGHER, 2010
All Rights Reserved

To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of ERIN BETH GALLAGHER find it satisfactory and recommend that it be accepted.

Patricia M. Sias, Ph.D., Chair

Todd M. Norton, Ph.D.

G. Leonard Burns, Ph.D.

ACKNOWLEDGEMENT

I would like to thank Patty Sias for guiding me through my time at WSU, giving me confidence in my abilities, and for being an inspiration to me. I would also like to thank my other committee members, Todd Norton and Len Burns, for being supportive and providing important input. I thank all of you for making this a valuable and fairly painless process. You have all taught me so much. I could not have asked for a better or more helpful committee!

I would also like to thank my friends and students who assisted me with data collection. A wide array of people from my academic and equine circles worked hard to recruit participants for me. My students in Communication Studies 102 also did a fantastic job recruiting. I honestly could not have done this project without the support and assistance of so many people!

A few people outside of my academic world also deserve recognition. I would like to thank my wonderful husband, Lance, for supporting me, listening to me, and making me laugh. I would also like to thank my parents, Dee and Steve Tomson, who have always believed in me and done everything in their power to make it possible for me to reach my goals. Finally, I need to thank my animals. My cats, Turk and Sophie, provided endless hours of “help” on my dissertation as well as comic relief. My dog, Marshal, and horse, Winchester, provided me with much needed breaks and exercise that helped me keep my health and sanity. They all are my muses.

Everyone on this list deserves more acknowledgement than I can possibly give. I could not have done this project without any of you. Thank you so much.

THE FLIP SIDE OF ORGANIZATIONAL ENCOUNTER: DEVELOPING AND TESTING
A MODEL OF VETERAN EMPLOYEE UNCERTAINTY AND INFORMATION
SEEKING ABOUT NEW EMPLOYEES

Abstract

by Erin Beth Gallagher, Ph.D.
Washington State University
August 2010

Chair: Patricia M. Sias

Organizational socialization research regarding new employees is well established. However, research of this nature provides a largely one-sided view of organizational entry processes. Although newcomers experience uncertainty and the specific types of uncertainty have been established in previous research, the newcomer's entry creates uncertainty for veteran employees as well (Gallagher & Sias, 2009). The new hire changes the normal routine and flow of work activities as well as the social atmosphere of the organization.

This manuscript presents a project that was designed to develop and test a model of veteran employee uncertainty reduction regarding new hires. New instruments were developed based on previous research. The instruments were tested, revised, and developed throughout three studies using exploratory and confirmatory factor analysis. Particular attention was paid to the psychometric qualities of the instruments. The third study also tested a path model of the relationships between veteran employee uncertainty, information seeking, and task interdependence.

The results indicate that task interdependence between veteran employees predicts particular aspects of uncertainty and information seeking. Uncertainty about new hires also

predicts the use of information seeking tactics, a relationship that is supported by Uncertainty Reduction Theory. This project represents the first quantitative analysis of the veteran employee perspective of organizational encounter, which begins to provide a more holistic view of organizational socialization processes.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS.....	iii
ABSTRACT.....	iv
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
CHAPTER	
1. INTRODUCTION.....	1
Pilot Study.....	3
Literature Review.....	3
Method.....	11
Results.....	17
Discussion.....	20
2. INSTRUMENT DEVELOPMENT.....	25
Literature Review.....	25
Method.....	35
Results.....	45
Discussion.....	54
Conclusion.....	65
3. MODEL TESTING.....	67
Theoretical Development, Research Questions & Hypotheses.....	68
Method.....	74
Results.....	89

Discussion.....	103
BIBLIOGRAPHY.....	127
APPENDIX	
A. List of Survey Items by Construct.....	131
B. Correlation Matrix for Study Two.....	133

LIST OF TABLES

1. Exploratory Factor Analysis Factor Loadings.....	18
2. Exploratory Factor Analysis Factor Correlations.....	19
3. Uncertainty Exploratory Factor Analysis Factor Loadings.....	47
4. Uncertainty Exploratory Factor Analysis Factor Correlations.....	48
5. Information Seeking Exploratory Factor Analysis Factor Loadings.....	50
6. Information Seeking Exploratory Factor Analysis Factor Correlations.....	51
7. Task Interdependence Exploratory Factor Analysis Factor Loadings.....	52
8. Task Interdependence Exploratory Factor Analysis Factor Correlations.....	52
9. Uncertainty Exploratory Factor Analysis Factor Loadings.....	91
10. Uncertainty Exploratory Factor Analysis Factor Correlations.....	91
11. Information Seeking Exploratory Factor Analysis Factor Loadings.....	92
12. Information Seeking Exploratory Factor Analysis Factor Correlations.....	93
13. Task Interdependence Exploratory Factor Analysis Factor Loadings.....	94
14. Task Interdependence Exploratory Factor Analysis Factor Correlations.....	94
15. Confirmatory Factor Analysis Factor Loadings.....	96
16. Confirmatory Factor Analysis Factor Correlations.....	97
17. Hypothesis Testing.....	100
18. Additional Significant Direct and Indirect Effects.....	102

LIST OF FIGURES

1. Predicted Model.....	88
2. Final Model.....	99

CHAPTER ONE

INTRODUCTION

Employee turnover is a normal and important aspect of organizational life. Considerable research has explored the communication processes that are associated with new employees' entry into organizational settings. These processes are methods by which the employee becomes socialized into a new organizational setting by learning the expectations for the occupation, as well as the patterns of communication within that specific work environment (Jablin, 2001).

Organizational socialization research regarding new employees is well established. However, research of this nature provides a largely one-sided view of organizational entry processes. Although newcomers experience uncertainty and the specific types of uncertainty have been established in previous research, the newcomer's entry creates uncertainty for veteran employees as well (Gallagher & Sias, 2009). The new hire changes the normal routine and flow of work activities as well as the social atmosphere of the organization. Gallagher and Sias (2009) identified the types of uncertainty that veteran employees experience with regard to new hires as well as the information seeking tactics veterans use to reduce uncertainty. However, substantial holes remain in the organizational socialization literature.

The interview study conducted by Gallagher and Sias (2009) provided initial insight into how veteran employees contribute to organizational socialization processes. However, the qualitative data cannot be generalized to larger populations. In addition, other variables likely contribute to the amount and types of uncertainty that veteran employees experience, as well as the information seeking tactics they use. To date, uncertainty and information seeking are the only constructs that have been examined. Researchers need to develop a broader conceptualization of the factors that contribute to socialization processes and examine how

variables are related to gain a better overall understanding of the communication processes at work.

The goals of this dissertation were twofold. The initial goal was to extend Gallagher and Sias's (2009) veteran employee uncertainty and information seeking research by developing, testing, and validating measures of veteran employee uncertainty and information seeking about new hires. Quantitative scales needed to be developed to measure what types of uncertainty veteran employees experience with regard to new hires as well as the information seeking tactics that veterans use to reduce uncertainty. The scales will allow this topic to be examined from a broader perspective and provide a more holistic view of organizational entry processes, thus filling a void in the current literature.

The second goal of the current project was to use a path model to test the relationship between veteran employee uncertainty and information seeking behavior from an uncertainty reduction perspective. In addition to uncertainty and information seeking, task interdependence was examined as a predictor variable in the model. By examining the relationships between these variables we will begin to develop a broader conceptualization of how veteran employees experience and contribute to the process of organizational encounter.

This manuscript begins with a review of the instrument development process. The literature relevant to uncertainty at the time of organizational entry is presented, followed by research questions and hypotheses for a pilot study that tested the veteran employee uncertainty scale. The method, results, and discussion for the pilot study are then provided in order to contextualize the current project. Chapter two presents the literature review, methods, results, and discussion for study one of the dissertation project. Chapter three details theory development, further scale development, and hypothesis testing that was conducted during study

two. Chapter three also provides a more detailed discussion of the overall implications of the project.

PILOT STUDY

Literature Review

Organizational encounter, or the point at which a new employee becomes a member of an organization, has primarily been examined from the perspective of new employees.

Encounter, or entry, is considered a time of surprise, which requires that new employees make sense of their new environment (Louis, 1980). Although new employees experience uncertainty and seek information to reduce that uncertainty (Miller & Jablin, 1991) the newcomer also *creates* uncertainty for veteran members of the organization. With the exception of Gallagher and Sias (2009), however, no research has been conducted on veteran employee uncertainty.

Therefore, the literature on newcomer uncertainty provides a useful starting point.

New Employee Uncertainty

Research and models of new employee information seeking are grounded in Uncertainty Reduction Theory (Berger & Calabrese, 1975), which was one of the first original communication theories (Craig & Muller, 2007). Berger and Calabrese (1975) focused on communication during the initial interaction between strangers. Central to their theory was “the assumption that when strangers meet, their primary concern is one of uncertainty reduction, or increasing predictability about the behavior of both themselves and others in the interaction” (Berger & Calabrese, 1975, p. 327). Berger and Calabrese argued that uncertainty involved both prediction and explanation. During an initial encounter, there are a number of ways either person may behave. Therefore, each of the actors in a given situation must attempt to predict the other’s behavior. Uncertainty is also concerned with explaining the other person’s behavior after they

have displayed it. In this way, uncertainty is both a proactive and retroactive process, but the ultimate goal is to reduce uncertainty so that we have more control over communicative events. “Overall, regardless of the cause of the uncertainty, the general conceptual definitions indicate that uncertainty involves a lack of specific types of information for making decisions or predictions” (Kramer, 2004, p. 9).

Berger and Calabrese (1975) presented seven axioms and 21 theorems regarding uncertainty. Their goal was to predict and explain how uncertainty is related to a variety of other variables. For example, axiom three related uncertainty and information seeking. Berger and Calabrese (1975) stated,

Given the relatively high level of uncertainty existing at the onset of the entry phase, one would expect persons in the situation to interrogate each other in order to gain information which might be instrumental in uncertainty reduction. Thus, one might expect interactants to engage in more question asking in the initial phases of the interaction.

They also related uncertainty to variables such as the communication environment, nonverbal expressiveness, intimacy level, reciprocity rate, similarity, and liking. Berger and Calabrese (1975) intended their theorems to be used as a catalyst for future research that would be able to predict relationships between a variety of variables concerning the stages of interpersonal interaction.

Louis (1980) argued that organizational entry represents a time of surprise for all new members of an organization and that organizational newcomers have the need to make sense of their new environment. Similarly, as Miller and Jablin (1991) noted, when new employees are “faced with learning the formal and informal requirements of a new role and ‘the ropes’ of the

organization, this boundary passage event is often associated with high levels of uncertainty” (p. 92). Newcomers often seek information to reduce their uncertainty, enabling them to more easily adjust to their new surroundings (Morrison, 1993; Teboul, 1994). Research has linked uncertainty to job satisfaction, performance, and turnover rates (Teboul, 1995).

Upon entering a new organization, newcomers experience uncertainty about their task (referent uncertainty), their ability to perform the task (appraisal uncertainty), and their relationships with their coworkers (relational uncertainty) (Teboul, 1994). Typically, they also experience some degree of role ambiguity and will depend on information from supervisors and coworkers for developing role clarity (Miller & Jablin, 1991). Miller and Jablin (1991) suggested,

Entry may represent the most critical time of employees’ role learning... their heightened sense of uncertainty leads newcomers (1) to be conscious of values and behaviors to be learned and (2) to often think about what they do not know and how to obtain the information they desire, (p. 94).

Newcomers are expected to cope with numerous factors, such as formal and informal communication practices, duties and privileges associated with their new job, determining the functional and hierarchical boundaries of the organization, and negotiating their fit within both the task and social networks of the organization (Louis, 1980). Although extant research does not indicate a specific amount of time that needs to pass before an individual makes the transition from being a newcomer to being a veteran employee, Jablin (2001) indicated that many organizations arbitrarily designate the transition between three and six months. The amount of time that is necessary for an individual to be socialized to the point of becoming a veteran (or someone who is well established in the organization) is likely to vary greatly from one

organization to the next. Jablin (2001) stated, “While it is apparent that newcomers are learning over time about the people, policies, language, history, and values of their organizations, among other things, whether or not discrete points exist at which newcomers move from the organizational encounter phase to the metamorphosis phase of assimilation remains debatable” (p.759). Jablin also argued that it is unlikely that all newcomers reduce uncertainty, acquire knowledge, and develop competence at the same rate.

While uncertainty is high for newcomers to an organization, “more seasoned employees must deal with uncertainties of role ambiguity, job transfers, organizational change, and implementing innovations” (Clampitt & Williams, 2005, p. 316), which suggests that uncertainty does not necessarily go away once an individual has learned the ropes of the organization. Rather, veteran employees continue to experience varying degrees of uncertainty, but the source of that uncertainty is different than it is for newcomers. Even as they experience uncertainty themselves, new employees actually serve as a *source* of uncertainty for veteran employees (Gallagher & Sias, 2009), which is the focus of the current project.

Veteran Employee Uncertainty

The newcomer’s entry creates uncertainty for veteran members of an organization (Gallagher & Sias, 2009). When a new hire joins an organization, psychological contracts are formed between the newcomer and the organization itself (Jablin, 2001). These contracts represent the expectations for behavior and communication practices within the organization. When people’s expectations are not fulfilled, moderate levels of emotional arousal may result. Jablin (2001) suggested that the terms established in the contracts of newcomers may affect veterans as well because the creation of new contracts may alter those that already exist for veteran employees. Events that are different from what is normally expected represent an

interruption of ongoing activity and may trigger employees to engage in sense-making activities (Jablin & Kramer, 1998). As Kramer (2004) stated,

Not only as newcomers do we face uncertainty; we face uncertainty throughout our organizational lives. We change positions, receive promotions, gain and lose coworkers and supervisors. Such changes produce uncertainty, as we must adapt to new people and situations. (p. 3)

The new hire changes the normal routine and flow of work activities as well as the social atmosphere of the organization, thus creating uncertainty for veteran members. Kramer (2004) also provided the following example,

To illustrate the role of uncertainty and the interaction of socialization and individualization during transitions, consider an example of a new waitress joining a group of seasoned veterans at a local restaurant. The veterans have established patterns for work assignments (who works where and when), for doing various tasks (what procedure is used for dispensing food orders), and even for relationships (who socializes with whom during and after work). (p. 46)

The new waitress disrupts the established patterns and may cause the veteran employees to ask questions such as: What section will she be working in? Has she worked as a waitress before? What kind of personality does she have? Will she fit in with our group? These types of questions are normal for veteran employees to ask when encountering a new member. The corresponding types of uncertainty have been qualitatively established in previous research.

Gallagher and Sias (2009) conducted the first empirical study of veteran uncertainty about new hires and identified five types of uncertainty that veteran employees experience with regard to new hires. *Newcomer referent uncertainty* refers to uncertainty about what jobs the

newcomer will be performing or what position he or she is going to fill. *Newcomer appraisal uncertainty* refers to uncertainty regarding the newcomer's past work experience, skills, or ability to perform the tasks associated with the job. *Newcomer relational uncertainty* refers to uncertainty about how the new hire will interact and fit in with coworkers and supervisors. *Transformation uncertainty* refers to uncertainty about how the newcomer might change the normal work routine or affect the veteran's daily work habits. Finally, *newcomer initiative uncertainty* refers to uncertainty about the new hire's motivation and work ethic (i.e. the new employee's motivation to learn the job and willingness to work hard and perform to a high standard).

The majority of research on uncertainty assumes that individuals seek information for the purpose of *reducing* uncertainty. Recent research, however, has argued that uncertainty *management* may present a better framework for understanding the uncertainty and information seeking processes. Afifi and Weiner (2004) argued that individuals experience uncertainty in different ways and that it is not always perceived as negative. Similarly, Kramer (2004) stated that "an underlying assumption of URT is that the experience of uncertainty is always negative and must be reduced" and that in actuality "...previous research suggests that individuals may avoid seeking information to maintain uncertainty in order to avoid confronting a potentially negative reality" (p. 65). Kramer (2004) argued that URT represents a simplistic view of uncertainty and the behaviors it induces. Because uncertainty is a complex construct, it is more appropriate to consider individuals as uncertainty managers rather than uncertainty reducers (Afifi & Weiner, 2004).

Despite the recent attention to uncertainty *management*, the current project is focused on uncertainty *reduction*. The decision to focus on uncertainty reduction was justified by the goals

of the dissertation. The first goal was to establish valid measures of veteran employee uncertainty and information seeking about new hires. The second goal was to examine the extent to which task interdependence, and uncertainty about newcomers predict the use of information seeking tactics by veteran employees. The assumption behind this goal is that veteran employees proactively seek information for the purpose of reducing uncertainty about the new hire. Despite his argument for the uncertainty management model, Kramer (2004) found that uncertainty reduction “was the best predictor of people’s communication strategies,” which “emphasizes the importance of examining uncertainty reduction as a significant motive for people’s communication because it is a strong predictor of information seeking in a variety of organizational settings” (p. 168). Kramer (2004) also noted that, in addition to uncertainty, it is worthwhile to pursue other variables as predictors of information seeking behaviors. Thus, the uncertainty reduction framework, with the addition of task interdependence, is appropriate for this project. Uncertainty management will be discussed in terms of areas for future research.

The five types of uncertainty established by Gallagher & Sias (2009) provided a qualitative overview of the types of uncertainty veteran employees experience with regard to new hires. A goal of the current project, however, was to extend the qualitative data by developing a quantitative measure of veteran employee uncertainty. The following section grounds this research in the postpositivist theoretical perspective and explains the research question and rationale for the pilot study.

Theoretical Perspective and Research Question

Organizational entry may be examined from a variety of perspectives; however, the current project examines veteran employee uncertainty from a postpositivist perspective. According to Corman (2005), the postpositivist tradition emphasizes empirical methods, defining

and testing variables, and repeatability of measurement to test claims about the communication process. To be useful from a postpositivist perspective, “a theory needs to be empirically testable and the hypotheses need to be grounded in a coherent model of communicative functioning” (Craig & Muller, 2007, p. 315).

Although Gallagher and Sias (2009) identified the types of uncertainty that are relevant to veteran employees, their study was the first to examine organizational socialization from the perspective of veteran employees. A qualitative study such as theirs provides a useful starting point for developing testable hypotheses. Gallagher and Sias (2009) interviewed veteran employees in a variety of organizations, but their results cannot be generalized to a larger population. It is impossible to determine from the interview data how representative the participants in their study were of veteran employees in general. Researchers must establish a base of information that can be related to veteran employees in general if we hope to provide useful information to practitioners in terms of how to improve the effectiveness and efficiency of new employee training and socialization programs.

Veteran employee uncertainty research can be extended by developing quantitative measures. The development of measures will progress research on uncertainty and information seeking about new hires in a variety of ways. First, a quantitative measure of uncertainty will allow researchers to assess how representative each of the five categories Gallagher and Sias (2009) identified are of the average veteran employee experience. The results from the interview study provide us with evidence that veteran employees experience five types of uncertainty. However, the qualitative data need to be verified quantitatively before we can claim these constructs are valid. Consequently, the following research question was posed:

RQ: What is the underlying factor structure of veteran employee uncertainty about new hires?

Survey development is a detailed, multi-step process. The goal is to develop a psychometrically sound measure of the constructs of interest. A construct is a theoretical entity that is represented by manifest behaviors (Vogt, 2005). The construct is an abstract entity that cannot be measured directly. Rather, we infer knowledge of the construct based on observable indicators of that construct. Survey items are created to represent manifest variables, or the indicators of the construct that we can actually measure. The next sections present the method, results, and discussion for a pilot study I conducted to develop the veteran employee uncertainty scale. Initially I will describe the steps necessary to develop the instrument as well as the statistical procedures used to examine the data.

Method

Developing the Measure

There are five steps to developing a measure before one reaches the point of data collection: define the constructs, generate items, ask potential participants to evaluate the items, decide on rating anchors, and add instructions and decide on the appearance of the scale. The first step to developing a measure is to *define the constructs*. A construct is a theoretical entity, which means that it cannot be directly observed (Vogt, 2005). Consequently, when we use surveys to measure a construct, we actually measure indicators of the construct. Any given construct is extremely large in scope and can be represented by numerous different indicators. Thus, each researcher must define what he or she means by the construct because different definitions potentially require different types of indicators to assess the information one desires. In this case, the general constructs of interest are veteran employee uncertainty and information seeking about new hires. Within the general constructs there are five uncertainty subconstructs and six information seeking subconstructs, as defined by Gallagher and Sias (2009).

Kline (2005) recommended using previous research and subject matter experts to help define the constructs of interest. While subject matter experts (SMEs) may include other scholars who study the same phenomenon, they may also include “laypersons who have specific knowledge about the construct you are interested in assessing” and “interviews with these SMEs are invaluable to understand as clearly as possible what it is you want to measure” (Kline, 2005, p. 31). I previously consulted a group of SMEs when I conducted the interviews with veteran employees for the initial qualitative study (Gallagher & Sias, 2009). Therefore, the definitions of the constructs for *newcomer appraisal uncertainty*, *newcomer referent uncertainty*, *newcomer relational uncertainty*, *transformation uncertainty*, and *newcomer initiative uncertainty* were developed during the previous study. Similarly, the definitions of the constructs for *overt questions*, *observation*, *surveillance*, *disguising conversations*, *third parties*, and *evaluation of work* were also developed during the previous study.

Step two of the test development project was to *generate survey items*. The items are the variables one is able to observe and that represent manifest indicators of the underlying uncertainty and information seeking constructs. Item wording can make or break the success of an instrument, so it is important to carefully and thoughtfully generate the items. Kline (2005) suggested generating a large list of items that could potentially measure the constructs of interest. Ultimately I will retain fewer items than those included on the initial survey. However, it was important to start with more items than I actually needed so that I could evaluate which of the items most accurately measured each construct. The information gathered from the interviews with SMEs provided the starting point for item generation. I consulted the interview transcripts and used the comments made by veteran employees to generate the items. This approach was beneficial because it allowed me to word the items in the language of actual veteran employees,

which promotes readability and accessibility to the respondents. One of my colleagues who is familiar with the organizational socialization literature also critiqued the items and provided suggestions regarding wording and test organization. The initial version of the survey contained 42 items.

After I generated a list of items for each type of uncertainty, I proceeded to step three. I asked *potential participants to evaluate the items for clarity and understanding*. Potential participants were defined as employees who had worked with their organization for at least one year and had a new coworker join the organization within the three months prior to data collection. Two potential participants read the items and provided verbal feedback on each item as they worked their way through the survey. For example, they examined the wording and readability of each item to help me to determine if the language was clear and appropriate for the intended audience. Their feedback helped to ensure that the reading level was appropriate, that the items made sense from a lay perspective, and that none of the items seemed confusing or misleading. I revised the items as needed according to their suggestions.

The fourth step was to *decide on the rating anchors* for the scale. The anchors are the possible responses to the survey items. They are important to the success of the scale because, depending on what anchors you decide to use, you may or may not be able to accurately assess the constructs (Kline, 2005). It is generally agreed upon that Likert-type scales work well for assessing these types of constructs. “Since 1930, other items types have been developed to measure attitudes. Interestingly, extensive research indicates that none are clearly superior to Likert-type items, which are easy to write and easy for respondents to understand” (Patten, 2001, p. 34). The estimation procedures used for factor analysis typically assume the use of continuous variables. Consequently, a seven point Likert-type scale is generally easy to understand and

provides participants with enough choices without overwhelming them by providing too many choices. Also, research indicates that most attitude surveys using Likert-type responses have categories of approximately equal intervals (Kline, 2005). One can assume the variable is continuous, and assess it as such, if there is an equal interval between each anchor.

The final step in the initial scale development work was to *add instructions and decide on the appearance of the instrument*. The instructions are actually very important because they are the first thing that respondents will read. They set the scene for the remainder of the data collection process. If the instructions are vague or unclear, respondents may be confused or answer inaccurately, which will contribute to measurement error. The physical design of the instrument is important as well because it can influence participants perceptions (e.g. if it seems long or wordy, cramped, etc.). Once again, the potential participants examined the instrument for understanding and aesthetic value and I revised the instrument as needed based on their feedback.

The five steps I explained above are intended to establish good content validity of the scale. Content validity refers to the extent to which the instrument and all aspects of it are relevant to and representative of the constructs of interest. There is no way to measure content validity. Rather, it is based on the judgment of subject matter experts. That is why it is so important to consult with them and use the interview transcripts throughout the development of the instrument. Developing good content validity early in the process will help to ensure good construct validity once I reach the point of measurement. Construct validity refers to the degree of accuracy with which the instrument measures the constructs of interest. I will discuss validity in greater detail later in this chapter.

Participants

A snowball sample of veteran employees from several different types of organizations and different levels within organizations participated in the study. Research suggests newcomers require an average of six months to feel competent (Feldman, 1976). Accordingly, for the purpose of this study, a *newcomer* was defined as an individual who had been employed by his or her current organization for no longer than three months. A *veteran* employee was defined as an individual who had been employed at his or her current organization for at least one year. To fit these criteria, each participant had been employed by his or her current organization for at least one year and worked with a new employee within the three months prior to the time of data collection. 76 participants answered the questionnaire for this initial pilot study.

Of the 76 participants, 46 were women and 30 were men. Participants represented a wide range of positions within their organizations, ages, tenure at the organization and managerial levels, ranging from entry-level hourly employees to senior level administrators. Twenty-five employees had no supervisory responsibilities, 25 were first line administrators, 15 were mid level administrators, and 7 were senior level administrators. The tenure of participants in the organization ranged from one to 31 years ($M = 7.86$, $SD = 7.67$). The participants ranged from 19 to 67 years of age ($M = 39.47$, $SD = 11.72$), and represented a wide variety of industries. The organizations were located in multiple regions of the United States. When the data collection was complete I proceeded with analysis of the scale.

Procedures

The goal of this project was to develop a questionnaire to measure veteran employee uncertainty about new employees. Therefore, I worked at the item level for all of the analyses, rather than working with the total score for each participant. The first analytical step was to

examine the descriptive characteristics of the items. Specifically, I looked at the item distributions for skew and kurtosis. Estimation procedures generally assume normality of the data, so it is important to remove non-normal items before moving forward. All of the items showed distributions well within normal limits (skew < 2.99; kurtosis < 9.99) and were thus retained for analysis.

The items were then submitted to an exploratory factor analysis. The purpose of the EFA is to determine the number and nature of latent constructs that account for the correlations between the manifest indicators. As previously indicated, the construct is unobservable, but it influences a group of observable variables. The items are correlated with each other because they share a common cause, the latent factor. If the factor were partialled out, the correlations between the items would become zero. Therefore, the purpose of the EFA is to determine which indicators are associated with which factors and how the factors are associated with each other.

Based on theory and the previous qualitative study (Gallagher & Sias, 2009), I expected four or five factors to emerge from the data. The items on the scale were written to represent five distinct constructs, or types of uncertainty. The results of the EFA allowed me to select the best items to measure my constructs. The data were resubmitted to the EFA after eliminating several items that appeared to be a poor fit to the construct. The EFA results will be used to revise the items before the instrument is used for a second round of data collection.

The final step was to examine the reliability of the final set of items. Reliability can refer to a number of different things. However, reliability in this case refers to the internal consistency or stability of item scores across items. This type of reliability is primarily based on inter-item correlations (Kline, 2005). “One of the most useful features of measures of internal consistency is that they can be calculated based on a single sample with just one test administration” (Kline,

2005, p. 171). Cronbach's alpha is the commonly accepted measure of internal consistency within the field of communication, and was therefore used to determine the reliability of the final set of items on my veteran employee uncertainty scale.

Results

The descriptive characteristics of the 42 items that were included on the veteran uncertainty scale were initially examined. All of the items on the scale appeared to be unproblematic according to the descriptive statistics, as they had mean, standard deviation, skew, and kurtosis statistics that fell within normally accepted ranges. Therefore, no items were eliminated before continuing with further analyses. First the data were subjected to two rounds of exploratory factor analysis to establish how many factors were present in the data and which items loaded onto which factors. Second, items were tested for reliability using Cronbach's alpha. Finally, validity was assessed.

Exploratory Factor Analysis

The items were tested using the maximum likelihood estimation procedure included in the Mplus statistical software package. Brown (2006) suggested using maximum likelihood in exploratory factor analysis anytime one plans to move into a confirmatory factor analytic format with the data. I used several criteria to determine which items should be included in further analyses of model fit. First, items had to have a primary factor loading of .50 or higher, although .60 was preferable. Second, items had to load strongly onto only one factor. Thus, items with large cross loadings were automatically excluded. Third, factors that correlated strongly with each other (.50 or higher) were excluded, as they essentially measure the same construct. The initial exploratory factor analysis showed a clear representation of three out of five dimensions of the conceptual model (*newcomer appraisal uncertainty*, *newcomer referent uncertainty*, and

newcomer relational uncertainty). However, there was no indication of support for the other two dimensions (*transformation uncertainty* and *newcomer initiative uncertainty*). Therefore, about half of the total items on the survey were eliminated from further analyses.

After removing items based on the above criteria, the data were once again subjected to exploratory factor analysis using the maximum likelihood estimation procedure in Mplus. The empirically-derived model corresponded well to three of the dimensions from the conceptual model, $\chi^2(117, N = 76) = 142.90, p = .052, RMSEA = .054, SRMR = .046$. In this case, a non-significant chi-square is desirable because it indicates that there is not a significant difference between the predicted model and the actual data. The error of approximation and residual statistics also fell within acceptably low levels, further indicating a good global fit of the three factor model. Table 1 displays the items and promax rotated factor loadings. Table 2 provides the factor correlations.

TABLE 1
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>	<u>F3</u>
Newcomer Referent Uncertainty			
I wondered what position s/he was going to fill.	.53	.30	.28
I was unsure what jobs s/he was supposed to do.	.86	.05	-.08
I was curious to know what types of things s/he would be doing.	.75	-.14	-.25
I knew what duties s/he would be performing. (reverse coded)	.84	-.08	-.03
I understood what his/her job description was. (reverse coded)	.71	-.09	-.02
Newcomer Appraisal Uncertainty			
I was curious about his/her ability to operate equipment/technology.	.19	.59	.10
I was unsure if s/he would put a lot of effort toward the job.	-.06	.78	-.02
I was uncertain whether s/he would show a lot of initiative.	-.23	.79	-.17
I was unsure whether s/he was suited to the job.	-.04	.84	-.12
I was curious to see if s/he was willing to work hard.	-.04	.50	-.23
I questioned his/her ability to do the job.	.05	.74	-.01
I was uncertain about his/her level of competence.	.02	.82	-.04
I was confident in his/her skills. (reverse coded)	.10	.74	.03
Newcomer Relational Uncertainty			
I wondered is s/he would be easy to get along with.	.05	.22	-.60
I was apprehensive about how s/he would change the workplace atmosphere.	.23	-.15	-.67
I wondered how s/he would “fit in” with others in the organization.	.13	.15	-.71
I was uncertain about how s/he would get along with other employees.	.07	.09	-.72
I was curious about his/her ability to work well with others.	.10	.24	-.77

TABLE 2
Exploratory Factor Analysis – Factor Correlations

<u>Factor</u>	<u>1</u>	<u>2</u>	<u>3</u>
1	1.00		
2	0.20	1.00	
3	-0.33	-0.45	1.00

(1) = Newcomer Referent Uncertainty, (2) = Newcomer Appraisal Uncertainty,
(3) = Newcomer Relational Uncertainty

Reliability Analysis

The final step was to examine the reliability, or internal consistency of the items. Cronbach’s alpha is the commonly accepted measure of internal consistency within the field of communication, and was therefore used to determine the reliability of the final set of items on the veteran employee uncertainty scale. This analysis was conducted with the understanding that coefficient alpha assumes all items on a test to be Tau-equivalent (true score), meaning that each item measures the construct equally (i.e. statistically equal loadings) (Vogt, 2005). As the items are likely not Tau-equivalent, coefficient alpha may underestimate the true measure of internal consistency. However, the three subscales within the final item set show high levels of internal consistency (Newcomer Referent Uncertainty $\alpha = .85$, Newcomer Appraisal Uncertainty $\alpha = .90$, and Newcomer Relational Uncertainty $\alpha = .88$). Overall, these results suggest a reliable set of items for measuring three dimensions of veteran employee uncertainty about new hires.

Validity Analysis

The scale showed good reliability, which is necessary for validity. However, good reliability does not ensure validity of the measure (Vogt, 2005). It is difficult to assess a variety of types of validity at this time because this study presented the first data collected on the veteran uncertainty scale. Therefore, I do not have a cross comparison with another data set that would be useful in terms of establishing convergent and discriminant validity. However, the

correlations among items within a particular factor were high, which indicates good criterion validity. Criterion validity can be defined as, “The ability of a test to make accurate predictions” (Vogt, 2005, p. 69). Because the items load strongly onto their factors, I can conclude that they will also be useful in terms of predicting their respective types of uncertainty.

The test also appears to have good content validity. “Content validity is not a statistical property; it is a matter of judgment” (Vogt, 2005, p. 59). The items on the test came directly from subject matter experts that were interviewed during a previous study (Gallagher & Sias, 2009), which indicates the items represent particular types of uncertainty. The items appear to be relevant and useful in terms of assessing veteran employees’ levels of uncertainty about new hires.

Discussion

The purpose of the pilot study was to develop and test a measure of veteran employee uncertainty about new employees. Previous research (Gallagher & Sias, 2009) established five types of uncertainty that veteran employees experience with regard to new hires. However, those dimensions were established through qualitative interviews and, therefore, only provided the starting point for developing survey items to test the dimensions of veteran uncertainty. The results provided support for three out of the five dimensions, including *newcomer referent uncertainty*, *newcomer appraisal uncertainty*, and *newcomer relational uncertainty*. These results are interesting for a variety of reasons and provide the starting point for revising the measure before the next round of data collection.

Previous research (Miller & Jablin, 1991; Teboul, 1994) indicated that new employees experience uncertainty with regard to what their job responsibilities are (referent), their ability to do the job (appraisal), and how to interact with others in the organization (relational). The results

of the current study indicate that veteran employees may experience similar types of uncertainty; however in the case of veteran employees, the newcomer is the *source* of uncertainty, rather than the individual experiencing uncertainty.

The initial exploratory factor analysis indicated strong support for three factors, which represented *newcomer referent*, *newcomer appraisal*, and *newcomer relational* uncertainty. The other items on the scale either did not load onto any factor or cross loaded onto more than one factor. Those items were eliminated from further analyses, as they did not appear to represent one of the dimensions of uncertainty. It is interesting that the three types of uncertainty that garnered support from the data are the same types of uncertainty that have been previously established as pertaining to new employees. This indicates that, while new employees experience three types of uncertainty, they also create three similar types of uncertainty for the veteran employees in the organization. These results lend validity to the current three factor model of employee uncertainty because the three dimensions have been established in previous research, if from a slightly different perspective. Also, each of the three subscales produced reliability coefficients of .85 or higher, indicating a high level of consistency among the items. Therefore, the items for *newcomer referent uncertainty*, *newcomer appraisal uncertainty*, and *newcomer relational uncertainty* will be retained for subsequent data collection.

Although three types of uncertainty formed three distinct factors, two of the dimensions established by Gallagher and Sias (2009) were not supported by the data. *Transformation uncertainty* (uncertainty regarding how the newcomer will change the normal work routine for veteran employees) did not come close to emerging from the data as its own factor. One item that was intended to measure transformation uncertainty loaded with *newcomer relational*

uncertainty. The remaining items that were intended to measure transformation uncertainty did not load onto any of the factors.

Transformation uncertainty is an element worth pursuing in future research, however, because it may be a type of uncertainty that is dependent on the organizational setting. Myers (2005) indicated that context may play an essential role in how newcomers assimilate and are socialized. It is likely that these processes may vary along many dimensions and are different from organization to organization. Context is probably an important factor for veteran employees as well. For example, veteran employees who are required to work with a new boss may experience a great deal of transformation uncertainty, while those working with a new peer coworker may not experience transformation uncertainty. Similarly, members of highly interdependent work teams may experience transformation uncertainty, while veterans who do not rely heavily on their coworkers may not.

Transformation uncertainty may only be relevant in certain situations, and thus does not apply to veteran employees in general. However, it would be useful to my research to collect data on transformation uncertainty from veteran employees who are likely to experience it. I believe transformation uncertainty might emerge as a factor in particular settings. It would be informative to identify those settings and determine if transformation uncertainty is truly a type of uncertainty experienced by some veteran employees, or if it was specific to the veterans that were interviewed during Gallagher and Sias' (2009) qualitative study.

The data did not provide support for *newcomer initiative uncertainty* (uncertainty about the newcomer's work ethic and motivation) as a separate factor. The items that were intended to measure newcomer initiative uncertainty loaded cleanly onto the *newcomer appraisal uncertainty* factor, which indicates that ability to perform the job and motivation to do so are not

separate constructs. Ultimately, this result is not surprising. While ability and motivation may be qualitatively different, they both result in higher productivity. In taking a second look at the items, the initiative items and the appraisal items are actually fairly similar to one another. It is not surprising that the data indicated no quantitative difference between the two. The combination of initiative and appraisal items produced a highly reliable subscale, $\alpha = .90$, which indicates the items are consistent with one another. Therefore, in future research I will collapse *newcomer initiative* with *newcomer appraisal* and examine them as one dimension that measures uncertainty about the newcomer's ability to perform the job.

The data produced one surprising result. With the exception of three items that were retained in the final data set, the reverse coded items on the initial scale did not perform well when submitted to the factor analysis. The results of the initial factor analysis actually produced a separate factor of reverse coded items, although the items had fairly weak loadings on this factor. This "reverse" factor was a combination of all five elements that I was hoping to find and did not make conceptual sense. Therefore, I eliminated these recoded items from the final data set. It is possible that I need to reword the items on the questionnaire or include fewer reverse worded items, in the case that respondents were confused by them. This result may also be due to a method effect. Brown (2006) explained the possibility that factors that do not make conceptual sense can emerge from exploratory factor analysis due to method effects from reverse worded items. Again, these items need to be reexamined in future research.

Overall, the results of the test after the initial phase of data collection are promising. I believe the emergence of the three factor model confirms past research on new employees as well as the initial qualitative interview study with veteran employees, thus providing some degree of construct validity for *referent*, *appraisal*, and *relational uncertainty*. Although I hoped

that *newcomer initiative uncertainty* was distinct from *appraisal uncertainty*, I now feel confident that the two are not separate constructs. Rather, they should be examined as one construct in the future. Although *transformation uncertainty* was not supported by the data, it may be a useful variable to pursue in different settings.

The pilot study marks an important initial step in research that will contribute to organizational socialization literature. With the exception of Gallagher and Sias (2009), researchers have not examined organizational entry from the perspective of veteran employees. We need to understand how a newcomer's entry into the work setting affects those already employed by the organization, as well as how the new hire changes the overall atmosphere and climate of the organization. Validating a measure of veteran employee uncertainty about new hires will allow researchers to test and statistically quantify the extent to which veteran employees experience different types of uncertainty. The measure will also allow researchers to compare uncertainty to a variety of other variables that are relevant to organizational socialization processes. We need to examine and understand the specific ways in which veteran employees experience uncertainty regarding new hires so that recommendations can be made to practitioners who are responsible for socializing new employees. Ultimately, a better understanding of veteran employee uncertainty will provide scholars with a more holistic and well rounded perspective on organizational socialization processes.

In addition to the veteran employee uncertainty scale, a well rounded understanding of organizational socialization processes also requires a scale that examines veteran employee information seeking about new hires. Once the uncertainty and information seeking scales have been established as valid instruments, researchers will be able to examine the relationship between these and other variables. The next chapter details the literature, research questions, and

hypotheses that are relevant to the veteran employee information seeking scale as well as the relationships between the relevant variables.

CHAPTER TWO

INSTRUMENT DEVELOPMENT

Chapter one of this manuscript discussed the literature relevant to newcomer and veteran employee uncertainty during organizational entry. Scholars agree that “organizations are institutions characterized by ambiguity, chance, and uncertainty” (Morrison, 2002, p. 229). Organizational entry, or the point at which an employee becomes a member of the organization, represents a time of uncertainty for both new and veteran employees (Gallagher & Sias, 2009). Newcomers experience uncertainty regarding their own positions as organizational members, while concurrently creating uncertainty for veteran employees. “An important way in which employees can cope with ambiguity and uncertainty is to seek information” (Morrison, 2002, p. 229). The following section begins by reviewing the literature on new employee information seeking in order to contextualize veteran employee information seeking.

Literature Review

One of the primary tenets of Uncertainty Reduction Theory is that individuals are motivated to seek information in order to reduce uncertainty (Kramer, 1999). Consequently, uncertainty and information seeking go hand in hand. The focus of this dissertation is to examine veteran employee uncertainty and information seeking. However, with the exception of Gallagher and Sias (2009), research on organizational socialization processes has not been conducted from the perspective of veteran employees. Thus, newcomer information seeking provides a useful starting point to contextualize theoretical development on veteran employee information seeking.

New Employee Information Seeking

According to URT, information seeking is a deliberate, conscious effort to gain information (Berger & Bradac, 1982; Brown & Levinson, 1978). “A context within which employees are particularly likely to experience uncertainty, and hence a strong desire for information, is when they begin a new job in a new organization” (Morrison, 2002, p. 233). Miller and Jablin (1991) examined newcomers’ information seeking behaviors during organizational entry and proposed several information-seeking tactics newcomers use to reduce uncertainty. Information seeking tactics comprise two primary strategies employees use to actively seek information: *direct* (e.g., overt questions) and *indirect* (e.g., observation, surveillance, indirect questions, using third parties as information sources, testing limits, disguising conversations) (Ashford & Cummings, 1985; Miller & Jablin, 1991). “New information may increase perceptions of control over ambiguous situations by supplying rationales for others’ behaviors, providing alternative scripts for behavior, and generally making the “unknown” seem more manageable” (Miller, 1996, p. 3).

Newcomers make decisions regarding which information seeking tactics to use, as well as the sources from whom they seek information. Potential information sources include official, written messages from management, the task itself, and other extraorganizational sources; however, “newcomers’ information-seeking efforts are likely to be focused on their supervisors and co-workers because the other sources are usually neither equally available nor helpful to new hires” (Miller & Jablin, 1991, p. 97). Miller and Jablin (1991) indicated that choice of tactics and information source is influenced by potential social costs associated with seeking information. Individuals are generally aware of the rewards, such as acquisition of information or social approval, and possible costs, such as social rejection and harm to one’s image, associated with

particular interactions. When an individual is conscious of the costs that may be associated with seeking information from a particular source, he or she is likely to be more cautious in the choice of communication tactics that are used (Teboul, 1994). For example, directly seeking information from a supervisor may appear costly because the new employee must gain the supervisor's approval. Thus, "newcomers who believe asking questions of their superiors might be embarrassing and damage their public image may gather information in a circuitous manner" (Miller, 1996, p. 4).

Context may also play an essential role in how newcomers assimilate and are socialized (Myers, 2005). A newcomer needs to acquire knowledge about his or her task, roles, and new social environments through the organization's formal orientation and training procedures as well as through his or her own information-seeking efforts. However, it is likely that socialization and information seeking processes may vary along many dimensions and are different from organization to organization. High reliability organizations that operate under continually dangerous conditions, for example, require that new members quickly learn organizational norms and integrate with veteran employees in order to avoid catastrophic situations (Myers, 2005). Although most organizations do not operate under dangerous conditions, the context under which a new employee is hired is likely to affect the socialization process in a variety of ways, including which information seeking tactics and sources are used to deal with entry related uncertainty.

As discussed above, new employee information seeking research is well established. However, new hires are not the only employees that seek information. The uncertainty that veteran employees experience acts as a catalyst for veterans to make sense of the newcomer by

proactively seeking information that will reduce their uncertainty about the new hire (Gallagher & Sias, 2009).

Veteran Employee Information Seeking

Gallagher and Sias (2009) identified six information seeking tactics veteran employees used to reduce uncertainty regarding new hires. Four of these tactics, *observation*, *surveillance*, *disguising conversations*, and *third parties*, were indirect tactics and were used in the same manner as they are generally used by new employees. *Observation* refers to watching newcomers to acquire information about specific attitudes or behaviors and does not include a value association (i.e. judgment regarding whether the observed behavior is good or bad). *Surveillance* refers to the monitoring of general attitudes or behaviors, is based on retrospective sensemaking, and does not include a value association. *Disguising conversations* occurred when veteran employees shared information and stories in the hope that the newcomer would reciprocate. Finally, veteran employees used *third parties* when they conversed with coworkers or supervisors in an effort to receive feedback regarding other people's opinions about the newcomer.

In addition to the four indirect information seeking tactics discussed above, the veteran employees in Gallagher and Sias' (2009) study also used *evaluation of work* as an indirect information seeking tactic. *Evaluation of work* is a tactic that is specific to veteran employees, as it refers to the veteran's ability to examine the newcomer's work to assess accuracy or proficiency of tasks. Evaluation of work includes a value association, as the veteran intentionally seeks to gather information regarding how well the newcomer is performing his or her job.

Finally, veteran employees used *overt questions* in a variety of ways to directly seek information from the newcomer (Gallagher & Sias, 2009). Veteran employees asked *background*

questions to obtain information about the newcomer's general background and previous work experience. *Checking in* was a method that was used to ask general questions to find out how the newcomer was doing or feeling about the job. Veterans often presented newcomers with *hypothetical situations* to determine how a newcomer would react if a particular situation arose on the job. Finally, veterans *elicited questions* from newcomers, meaning they made a conscious effort to be available to the newcomer and provide the newcomer with the opportunity to ask questions.

One of the primary goals of this dissertation is to establish the relationship between veteran employee uncertainty and information seeking about new hires. However, other variables likely affect the relationship between uncertainty and information seeking and may serve as predictor variables in the overall model. According to Kramer (2004), "...levels of uncertainty are not necessarily a sufficient predictor of information-seeking behaviors because uncertainty is not the sole motivator of communication behaviors" (p. 151). The following section reviews the literature on employee task interdependence, which was examined as a predictor variable when testing the model in study two.

Task Interdependence

Interdependence between members of work groups is a characteristic that is desired for effective performance (Taggar & Haines, 2006). Interdependence refers to "...the manner in which and extent to which group members must exchange information and resources or actually work together to complete their jobs" (Van der Vegt, Emans, & Van de Vliert, 2000, p. 635) and has a variety of benefits. The benefits include "improved learning, achievement, cognitive complexity of thought, and interpersonal relations" (Taggar & Haines, 2006, p. 211).

Interdependence among people in organizations can derive from several sources: (1) task

inputs, such as the distribution of skills and resources and the technology that define the work (e.g., individuals on an assembly line vs. teams building whole products), (2) the processes by which members execute the work (e.g., people who make sales calls alone vs. people who sell as teams), (3) the way that goals are defined and achieved (e.g., measures of collective vs. individual performance), and (4) the way that performance is rewarded (e.g., rewards contingent on group vs. individual performance). (Wageman, 1995, p. 146)

Researchers (Taggar & Haines, 2006; Van der Vegt, Emans, & Van de Vliert, 2000; Van der Vegt & Van de Vliert, 2002; Wageman, 1995) typically break interdependence down into two primary categories based on the sources above: task and outcome interdependence. The current project focused on task interdependence, which relates specifically to the degree to which employees rely on one another to complete their tasks and achieve organizational goals. Taggar and Haines further break task interdependence down into initiated and received task interdependence. Initiated task interdependence is “the degree to which one employee feels that others rely upon him or her to accomplish their work” (Taggar & Haines, 2006, p. 214). Received task interdependence, on the other hand, is defined as the degree to which an employee relies on others to accomplish his or her own work.

Weick (1979) argued that organizations actually exist in large part because of interdependence. Organization is based on the interconnections between the members of an organization and the ways in which they interact.

Most “things” in organizations are actually relationships, variables tied together in a systematic fashion. Events, therefore, depend on the strength of these ties, the direction of

influence, the time it takes for information in the form of differences to move around circuits. (Weick, 1979, p. 88)

Weick referred to loose coupling as the concept that two systems have few variables in common, or share variables of relatively little impact. “What loose coupling means practically is that if one of the variables is disturbed, the disturbance will tend to be limited rather than to ramify” (Weick, 1979, p. 111). Tight coupling, on the other hand, refers to variables that are more highly interdependent in the sense that an event that affects one variable has a substantial impact on the other.

The concept of loose vs. tight coupling can be applied to task interdependence between organizational members. A loosely coupled group of coworkers would have relatively little task interdependence because the impact of one person’s actions on the other members would not especially hinder the completion of the task. In a tightly coupled group of coworkers, on the other hand, the actions of each individual would have a more substantial impact on the other members’ ability to complete tasks. Consequently, it is reasonable to assume that when a new employee joins a tightly coupled, interdependent workplace, the impact on veteran employees will be more substantial than it would be for a more loosely coupled group. To study task interdependence, however, one must examine the characteristics of the variable.

Task interdependence is “embedded in the jobs that the members must perform” (Van der Vegt & Van de Vliert, 2002, p. 51), and is thus conceptualized as a characteristic of the job itself that requires employees to work together to a greater or lesser extent. Although task interdependence is a function of the job, it is typically considered an individual level variable because “the degree of interdependence within work teams may vary from person to person” (Van der Vegt, Emans, & Van de Vliert, 2000, p. 635). For example, task interdependence is

often examined among members of work groups, but a group level of analysis does not require that each member of the group experience the same level of interdependence with every other member. Therefore, the level of interdependence between coworkers is largely based on individual perceptions of interdependence.

Task interdependence can result in a variety of positive effects. According to Wageman (1995), “Studies of task interdependence have demonstrated that higher levels of task interdependence result in more communication, helping, and information sharing than do individualistic tasks” (p. 149). In highly interdependent work environments, cooperative behaviors are necessary to complete tasks. Thus, task interdependence “enhances members’ expectations of help and information sharing from others” (Wageman, 1995, p. 150). Similarly, Taggar and Haines (2006) suggested that social exchange theory motivates members of interdependent work groups to assist their coworkers, particularly when received task interdependence is high.

Social exchange theory states that the parties in any given relationship want balance or fairness in that relationship (Blau, 1964). Thus, individuals who perceive being dependent on peers for help, support, and advice (received interdependence), will be motivated to reciprocate through facilitating the work of others by sharing information, helping and completing work well (i.e. initiated task interdependence). (Taggar & Haines, 2006, p. 215)

Accordingly, it is reasonable to assume that veteran employees with a high degree of received task interdependence will seek information from the newcomer, as well as provide information to that person to ease the process of becoming familiar with one another. Veteran members are motivated to reduce uncertainty about new employees in an attempt to become more comfortable

with the newcomer, but the motivation to do so is likely stronger when the veteran relies heavily on the newcomer to complete his or her own tasks. Reducing uncertainty also serves the purpose of making the newcomer more comfortable with his or her environment. A level of comfort is necessary for employees to work together effectively and complete interdependent tasks. It follows that veterans' information seeking tactics regarding new employees will differ depending on the level of received task interdependence.

Thus far this chapter has reviewed the literature on information seeking and task interdependence, as well as contextualized how both variables relate to veteran employee uncertainty. The following section frames the dissertation in the appropriate theoretical perspective and presents the research questions relevant to the first part of the project. The research questions and hypotheses that are relevant to the second part of the project are discussed later in the manuscript in order to present them in close proximity to the method that was used to test them.

Theoretical Perspective and Research Questions

Organizational entry may be examined from a variety of perspectives; however, the current project examines veteran employee uncertainty and information seeking from a postpositivist perspective. According to Corman (2005), the postpositivist tradition emphasizes empirical methods, defining and testing variables, and repeatability of measurement to test claims about the communication process. To be useful from a postpositivist perspective, "a theory needs to be empirically testable and the hypotheses need to be grounded in a coherent model of communicative functioning" (Craig & Muller, 2007, p. 315).

Although Gallagher and Sias (2009) identified the types of uncertainty and information seeking that are relevant to veteran employees, their study was the first to examine

organizational socialization from the perspective of the veteran employees in the organization. Gallagher and Sias (2009) interviewed veteran employees in a variety of organizations, which provided a useful starting point for developing testable hypotheses, but their results cannot be generalized to a larger population. Researchers must establish a base of information that can be related to veteran employees in general if we hope to provide useful information to practitioners in terms of how to improve the effectiveness and efficiency of new employee socialization.

The veteran employee uncertainty scale has undergone one round of analysis. The previous chapter in this manuscript detailed the pilot study about veteran employee uncertainty about new hires. The results of the pilot study were useful in terms of eliminating poor indicators of the uncertainty constructs as well as revising items to produce better indicators. Despite the pilot work, the underlying factor structure of the uncertainty indicators will be assessed again. The second assessment should produce results that corroborate the results of the pilot study. Consequently, the following research question was posed:

RQ1: What is the underlying factor structure of veteran employee uncertainty about new hires?

The information seeking aspect of the scale had not been previously analyzed from a quantitative perspective. However, one of the goals of this dissertation was to establish a valid quantitative measure of veteran employee information seeking about new hires. The dimensions of information seeking established by Gallagher and Sias (2009) served as the basis for developing a quantitative measure. The results from the interview study provided evidence that veteran employees used nine different information seeking tactics to deal with the uncertainty they experience with regard to new employees. However, the qualitative data needed to be verified quantitatively before the items that serve as good indicators of the information seeking constructs could be identified. Consequently, the following research question was posed:

RQ2: What is the underlying factor structure of veteran employee information seeking about new hires?

The first round of data collection served as the foundation for testing the model with a second data set. The following section details the method for developing and testing the instrument.

Method

The line of research that began with the pilot study was continued in a series of two studies. The first study was designed to develop the veteran employee uncertainty and information seeking instruments. Additionally, the task interdependence items were examined for reliability and validity. The second study tested the relationships between veteran uncertainty and information seeking, as well as task interdependence. The following sections detail the procedures for data collection and analysis that were used in study one.

Participants

Data was collected from employees who had been employed by their current organization for at least one year and had a new employee join the organization within six months prior to the time of data collection. These criteria ensured that participants were familiar enough with their organizations to be considered “veterans” and that participants had a fairly recent memory of the new employee joining the ranks.

Random sampling was impossible, as I needed to locate a specific population of interest. Therefore, I used a modified purposive sampling technique. I made contact with veteran employees who fit my criteria through personal contacts. I also used undergraduate students enrolled in a lower level communication course to assist with recruiting survey respondents. The undergraduates were given course credit to identify respondents who fit the criteria for the study, ask them to fill out the survey, and provide me with each person’s contact information. I then made direct contact with each of the potential respondents and disseminated the survey via

email. The online format facilitated distribution to veteran employees who were not necessarily local to the area. Because I made direct contact with each participant, I maintained control over who responded, thus avoiding error due to participants who did not meet the criteria of the study. When running factor analyses, samples less than 100 are considered small, 100 – 200 are considered medium sized, and samples larger than 200 are considered large (Brown, 2006). Surveys were distributed to a total of 286 participants and 173 surveys were returned. 30 sets of responses were eliminated prior to analysis because the respondents did not meet all of the criteria for the study or the survey contained substantial missing data. The final data set included a sample size of 143. The final response rate, therefore, was 50%.

The sample was overrepresented by female participants. Of the 143 participants, 99 were women (69%) and 38 (26%) were men; 6 declined to indicate their sex. Unfortunately, it can be difficult to obtain a sample that is representative of the entire population when relying on personal contacts to assist with participant recruitment. The participants represented a wide range of positions within their organizations, ages, tenure at the organization, and managerial levels. The participants' positions ranged from entry-level hourly employees to senior level administrators. 64 employees had no supervisory responsibilities, 24 were first line administrators, 21 were mid level administrators, five were senior level administrators, and 24 indicated other supervisory responsibilities (e.g. they owned their own business). 88 participants worked full time, while 51 worked part time. The tenure of participants within the organization ranged from 1 to 36 years ($M=6.17$, $SD=6.18$). Participants held their current position within the organization from one month to 24 years ($M=4.57$, $SD=5.19$). The participants' ages ranged from 18 to 63 years ($M=34.7$, $SD=13.15$). 116 employees identified as Caucasian, seven were Hispanic, four were African American, eight were Asian, one was Native American, and one

Other. The participants were individuals from the education (both university and elementary), hospitality, medical, technology, retail, banking, construction, legal, manufacturing, and small private business industries. The organizations were located in multiple cities throughout the United States.

Instruments

Data were collected using the veteran employee uncertainty scale after revisions were made according to the results from the pilot study. The veteran employee uncertainty scale initially included 42 items that were created based on the interview comments from the qualitative study (Gallagher & Sias, 2009). The EFA results from the pilot study provided insight into the underlying factor structure of veteran employee uncertainty. Based on the results, 17 items were eliminated because they were poor indicators of the constructs. The majority of the items that were retained for the *newcomer referent*, *newcomer appraisal*, and *newcomer relational* constructs performed well in the EFA, with factor loadings that were generally above .70.

As the results of the pilot study indicated, the *transformation uncertainty* construct was not represented by the items that were tested. However, the transformative aspect of uncertainty was pursued in the current dissertation project with the understanding that it is likely a contextual aspect of uncertainty. As previously discussed, the hierarchical status of the newcomer may contribute to transformation uncertainty such that a new employee with a higher position than the veterans produces it, while one with lower or equal status does not (at least not to the same degree). Transformation uncertainty, in relation to the newcomer's hierarchical status, was discussed by the participants in the interview study that spoke about a new boss joining the organization (Gallagher & Sias, 2009). Consequently, I continued to pursue transformation

uncertainty. The uncertainty items remained consistent with the seven point Likert-type scale that was used for the pilot study, with responses that ranged from strongly disagree to strongly agree.

The veteran employee information seeking items came from two sources. Approximately half of the items were adapted from Miller's (1996) Information Seeking Strategies scale. Miller's scale was used to assess the strategies that new employees used to seek information during organizational entry; however, veteran employees used many of the same tactics to reduce uncertainty about newcomers (Gallagher & Sias, 2009). Therefore, the items were adapted to assess veteran employee information seeking. Miller's original measure rated items on a seven point Likert-type scale with responses that ranged from strongly disagree to strongly agree, which is consistent with my own uncertainty scale. Miller's results revealed a five factor solution that accounted for 59% of the variance in new employee information seeking. Calculations of reliability using Cronbach's alpha revealed coefficients ranging from .69 to .80.

The second half of the veteran employee information seeking items were formulated from comments made by veteran employees during the interview study (Gallagher & Sias, 2009). This approach was beneficial because it allowed me to word the items in the language of actual veteran employees, which promotes readability and accessibility to the respondents. Kline (2005) suggested generating a large list of items that could potentially measure the constructs of interest. Ultimately I retained fewer items than those included on the initial survey. However, it was important to start with more items than I actually needed so that I was able to evaluate which of the items most accurately measures each construct.

The purpose of the instrument development study was to develop and validate the veteran employee uncertainty and information seeking measures. Once the validity of the measures is

established, the variables can be tested for direct and indirect effects using a path model. The path model tested in study two also included task interdependence as a predictor variable. Although task interdependence was not relevant to the research questions for the instrument development study, the items that were used to measure this construct needed to be validated before they were used in the path model. Consequently, task interdependence was included in the analysis for study one.

Task interdependence has been previously examined (e.g. Taggar & Haines, 2006; Van der Vegt & Van de Vliert, 2000; Van der Vegt & Van de Vliert, 2002); thus, a valid measure already exists. Taggar and Haines' original measure rated items on a seven point Likert-type scale with responses that ranged from "completely independent" to "completely dependent" (p. 218). The reliability coefficient using Cronbach's alpha was .82 for the four item initiated task interdependence measure and .79 for the four item received task interdependence measure. The task interdependence items were adapted from Taggar and Haines (2006) to be relevant to the current project. Very little rewording was required to make the items appropriate for veteran employees. For example, the original item "To what extent do your colleagues depend on you for information and advice" (Taggar & Haines, 2006, p. 217) was changed to read, "To what extent does the new employee depend on you for information and advice?" However, the original item wording was altered, thus requiring that I test the validity of the reworded items before using them in the path model. Reliability analysis was used to confirm previous research (Taggar & Haines, 2006; Van der Vegt & Van de Vliert, 2000; Van der Vegt & Van de Vliert, 2002) and establish the reliability of the two subscales after the items were reworded.

Newcomer's hierarchical status was also assessed. Hierarchical status is a nominal variable, as the levels do not have values associated with them. Accordingly, it was assessed

using two simple demographic questions. The first question asked respondents, “What is the hierarchical status of the new employee you visualized during this survey, relative to yourself?” Participants responded by indicating whether the newcomer is of higher, equal, or lower hierarchical status. The second question asked, “What is your supervisory status relative to the new employee?” Respondents indicated whether they supervise the newcomer, the newcomer supervises them, or if they are peer coworkers. Although these items are simple, they needed to be examined prior to their inclusion in the path model. The hierarchical status items were also included at this stage because of their potential relevance to *transformation uncertainty*.

As previously discussed, the results of the pilot study did not lend support to the transformation aspect of uncertainty. Theoretically, however, transformation uncertainty should be relevant to the new employee’s hierarchical status. The newcomer's status was assessed with the understanding that the sample could be split into two parts representing “the same hierarchical status” and “different hierarchical status.” Splitting the sample according to newcomer’s hierarchical status would allow me to assess whether transformation uncertainty emerges as a factor when the sample consists of respondents who have had a new supervisor join the organization. Thus, it was necessary to include the hierarchical status items on the survey at the instrument development stage.

The complete instrument, excluding demographic variables, contained 89 items. Due to the lengthy nature of the survey, three versions were used in order to control for order effects and fatigue among participants. The constructs (uncertainty, information seeking, and task interdependence) were presented in a different order on each version, as were the items within each construct.

To summarize, the instrument development study was a pretest of the constructs to establish the validity of all measures before the variables were compared using the path model. The primary concern was to establish the veteran employee uncertainty and information seeking measures, as these are both new constructs that have not been previously examined using a quantitative research design. However, all of the variables that were used to test the model were pretested so that the necessary revisions could be made before moving into the structural regression format. Consequently, task interdependence was included on the survey at the instrument development stage.

Exploratory Factor Analysis

The purpose of exploratory factor analysis is to determine the number and nature of latent constructs that account for the correlations between the manifest indicators (Brown, 2006). As previously discussed, the construct is unobservable, but it influences a group of observable variables. The items are correlated with each other because they share a common cause, the latent factor. If the factor were partialled out, the correlations between the items would become zero. Therefore, the purpose of the EFA was to determine which indicators were associated with which factors and how the factors were associated with each other. Essentially, the EFA reduced and sorted the data into a manageable and understandable pattern. EFA is thought of as a data driven procedure. That is, one does not designate any of the relationships ahead of time as the purpose is to find out what those relationships are. However, that does not mean the EFA is absent of theory. I defined my constructs according to results from the interview study and I wrote the items to correspond with each of the subconstructs. The results of the pilot study also provided an indication of how the items should perform when submitted to the EFA.

Consequently, I went into the EFA expecting that the items would load onto the appropriate factors. This theoretical knowledge was useful in the interpretation of the EFA results.

All of the analyses were run with the Mplus statistical software package. I conducted the EFA using the maximum likelihood estimation procedure with oblique factor rotation. Maximum likelihood is recommended any time one is planning to move into a confirmatory factor analytic framework (Brown, 2006). “A key advantage of the ML estimation method is that it allows for a statistical evaluation of how well the factor solution is able to reproduce the relationships among the indicators in the input data” (Brown, 2006, p. 21).

Exploratory factor analytic models with more than one factor employ factor rotation as a means of fostering interpretability of the model (Brown, 2006). “Rotation is possible because of the indeterminate nature of the common factor model – that is, for any given multiple-factor model, there exist an infinite number of equally good-fitting solutions, each represented by a different factor loading matrix” (Brown, 2006, p. 30). I used oblique rotation because the factors are assumed to correlate with each other (i.e. uncertainty and information seeking should be related to one another according to theory). Orthogonal rotation does not allow the factors to correlate, which can often lead to an inaccurate representation of the intercorrelations between factors. Oblique rotation, on the other hand, provides a more realistic representation of the relationships between factors. Furthermore, if the factors are not correlated with each other, oblique rotation will provide the same results as the orthogonal rotation would (Brown, 2006).

The appropriate number of factors from the EFA was determined by examining the Eigen values (Brown, 2006). Factors with Eigen values greater than one are considered to be unique factors because an Eigen value less than one indicates that the variance accounted for by the factor is less than the variance accounted for by a single item, making it useless. Mplus also

provides a chi-square statistic, which was used to compare the solutions. The chi-square is a goodness of fit test that indicates how close the observed model is to the predicted model. Mplus allows one to compare a one factor solution with a two factor solution with a three factor solution, etc. Therefore, the comparison of the different models using the chi-square was another way to verify the correct number of factors.

I also used the EFA to examine the quality of the individual items. The item loadings refer to the amount of variance in the item that is accounted for by the latent factor (Brown, 2006). EFA is based on the correlation matrix, which means the item loadings are completely standardized. For example, if an item loading is .85, I would interpret it as: one standard unit increase on the factor is associated with a .85 standard unit increase on the item. At this point in my research the goal was to retain items that are as strong as possible. As a general rule, I eliminated items with primary factor loadings lower than .60, as well as those items with strong cross loadings on more than one factor. However, a number of information seeking items with primary loadings lower than .60 were retained because of their strong theoretical match with the construct. The reasons for this will be addressed in the discussion section.

Multiple EFAs were conducted on both the uncertainty and information seeking scales in order to gradually eliminate bad items and assess model fit. Essentially, each EFA can be considered a revision to the previous model to determine how the fit of the model changed with the exclusion of particular variables. A total of four EFAs were conducted on the uncertainty items, while a total of five EFAs were conducted on the information seeking items. The information seeking scale required more extensive revision than the uncertainty scale because this study represented the first assessment of the items. The uncertainty items, which were assessed in the pilot study, had already undergone one substantial revision; therefore, the scale

required less revision as part of the current study. The task interdependence scale only required one EFA to validate previous research.

Upon completion of the exploratory factor analyses, it was important to assess the reliability of the instrument. Reliability refers to repeatability of measurement and “concerns the degree to which the scores are free from random measurement error” (Kline, 2005a, p. 58). The reliability coefficient refers to the amount of observed score variance that is true score variance. Cronbach’s alpha is the most common method of measuring reliability because it can be assessed on a single data set by providing the internal consistency of the items. Consequently, Cronbach's alpha was used to assess the reliability of the scales.

Finally, it is important to note that it would have been inappropriate to conduct a confirmatory factor analysis on the data at that time. Originally, I hoped to perform both EFA and CFA analyses as part of study one. According to Brown (2006), "A common sequence in scale development and construct validation is to conduct CFA as the next step after latent structure has been explored using EFA. However, the researcher frequently encounters a poor-fitting CFA solution because of the potential sources of misfit that are not present in EFA" (p. 193). Although I had a theoretical understanding of how the items should correlate in order to produce factors and I originally hoped to conduct CFA as well as EFA, the instrument required further revision. As Brown (2006) stated,

At this stage of psychometric evaluation, use of CFA is premature. Although the researcher has a firm conceptual sense of this measure (i.e. number of factors, conjectured pattern of item-factor relationships, as supported by preliminary research), the initial EFA findings are limited in their ability to fully guide CFA specification (e.g. reasonability of fixing all cross-loadings and error covariances to zero). (p. 194)

The results and discussion section describe the reasons why CFA was not an option during study one analysis.

Results

When data collection was complete, the first step was to assess the descriptive characteristics of the data. Estimation procedures generally assume normality of the data, so it is important to remove non-normal items before moving forward. According to Kline's (2005) recommendation, items with extreme skew (> 2.99) and kurtosis (> 9.99) should be eliminated before moving on to conduct an exploratory factor analysis. All of the items were well within normal levels and were thus retained for further analysis. First the data were subjected to multiple rounds of exploratory factor analysis to establish how many factors were present in the data and which items loaded onto which factors. Second, items were tested for reliability using Cronbach's alpha. Finally, validity was assessed.

Exploratory Factor Analysis

The items were tested using the maximum likelihood estimation procedure included in the Mplus statistical software package. Brown (2006) suggested using maximum likelihood in exploratory factor analysis anytime one plans to move into a confirmatory factor analytic format with the data. I used several criteria to determine which items should be included in further analyses of model fit. First, items generally needed to have a primary factor loading of .60 or higher. Second, items had to load strongly onto only one factor. As previously discussed, different degrees of analysis were required for each of the constructs. Accordingly, the following sections will discuss the results for uncertainty, information seeking, and task interdependence respectively.

Uncertainty. The initial exploratory factor analysis showed a clear representation of three out of four dimensions of the conceptual model (*newcomer appraisal uncertainty*, *newcomer referent uncertainty*, and *newcomer relational uncertainty*). However, there was no indication of support for *transformation uncertainty*. More specifically, the data provided a moderate fit of a three factor model, $\chi^2(228, N = 143) = 468.13, p = .00, CFI = .875, RMSEA = .086, SRMR = .056$, but the items for *newcomer referent* and *newcomer appraisal uncertainty* loading clearly with each other. *Newcomer relational uncertainty* was somewhat more problematic because several of the items did not correspond with the factor despite their theoretical match. In addition, two items that were written to capture *transformation uncertainty* loaded strongly with the relational factor. Based on these results, seven items were eliminated from further analyses because they had low primary factor loadings. The eliminated items included two referent, one appraisal, one relational, and three transformation items.

After removing items based on the above criteria, the data was once again subjected to exploratory factor analysis using the maximum likelihood estimation procedure in Mplus. The overall fit of the three factor model improved in comparison to the initial model, $\chi^2(102, N = 143) = 214.26, p = .00, CFI = .924, RMSEA = .088, SRMR = .043$, but still provided only a moderate global fit. Two additional transformation items were excluded at this point because they both had low primary loadings as well as cross loadings on more than one factor. One relational item was also excluded for the same reason. One appraisal item was excluded because it had a low primary loading on its factor.

The data were subjected to EFA again with the exclusion of the items listed above. Once again there was an improvement in the global fit of the model, $\chi^2(91, N = 143) = 1240.64, p = .00, CFI = .963, RMSEA = .076, SRMR = .035$; however, the chi-square and RMSEA were still

higher than ideal. Upon examining the residuals it became apparent that two of the relational items were putting localized strain on the model. Consequently, those two items were excluded and the data were submitted to EFA one last time.

The empirically-derived three factor model provided an excellent fit to the conceptual model, $\chi^2 (33, N = 143) = 30.13, p = .61, CFI = 1.00, RMSEA = .000, SRMR = .018$. In this case, a non-significant chi-square is desirable because it indicates there is not a significant difference between the predicted model and the actual data. The root mean square error of approximation and standardized root mean residual were both close to zero, further indicating an excellent global fit of the three factor model. Table 1 displays the items and promax rotated factor loadings. Table 2 provides the factor correlations.

TABLE 3
Uncertainty
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>	<u>F3</u>
Newcomer Relational Uncertainty			
I wondered how s/he would “fit in” with others in the organization.	.60	-.09	-.34
I was unsure if s/he would bring about a lot of changes to the workplace.	.61	.23	-.03
I was uncertain about how s/he would get along with other employees.	.81	-.09	-.14
I was uncertain about s/he would change workplace dynamics.	.91	.08	.13
Newcomer Referent Uncertainty			
I wondered what position s/he was going to fill.	-.02	.73	.09
I was unsure what jobs s/he was supposed to do.	.06	.87	.11
I was uncertain about the tasks s/he would be doing	.05	.71	.10
I was unsure which tasks were assigned to him/her.	-.04	.86	.03
Newcomer Appraisal Uncertainty			
I was unsure whether s/he was suited to the job.	.31	.08	-.63
I questioned his/her ability to do the job.	.03	.10	.79
I was uncertain about his/her level of competence.	.13	.16	-.61
I was confident in his/her skills. (reverse coded)	-.09	.15	-.76

TABLE 4
Uncertainty
Exploratory Factor Analysis – Factor Correlations

<u>Factor</u>	<u>1</u>	<u>2</u>	<u>3</u>
1	1.00		
2	0.36	1.00	
3	-0.49	-0.39	1.00

(1)= Newcomer Relational Uncertainty, (2) = Newcomer Referent Uncertainty,
 (3) = Newcomer Appraisal Uncertainty

To summarize, the data support the three factor model of veteran employee uncertainty that was established during the pilot study. Transformation uncertainty did not stand alone as a factor; rather, the transformation items were distributed among the other three types of uncertainty.

Information Seeking. The information seeking scale originally contained 55 items, which were written to represent nine different types of information seeking. Consequently, the initial exploratory factor analysis produced a tremendous amount of data to sort through. The data produced 11 factors with Eigen values greater than one, however only eight of those factors made the slightest theoretical sense. Additionally, factors nine through eleven only had one or two items associated with them, indicating they should not be considered as meaningful factors.

The eight factor model provided a moderate fit, $\chi^2(1120, N = 143) = 1829.81, p = .00$, CFI = .821, RMSEA = .067, SRMR = .043 to the conceptual model. Ten items were immediately eliminated, however, because they had no substantial factor loadings. There was an improvement after eliminating ten items, but the eight factor model retained only a moderate global fit, $\chi^2(695, N = 143) = 1080.95, p = .00$, CFI = .880 RMSEA = .062, SRMR = .039. An additional nine items were eliminated at that point due to low primary loadings and/or cross loading on multiple factors, which again produced an improvement in the global fit of the model that was approaching acceptable values, $\chi^2(398, N = 143) = 587.81, p = .00$, CFI = .926, RMSEA = .058,

SRMR = .032. Conceptually, the model also began to make more sense after 19 bad items were eliminated from analysis. For example, the items written to represent surveillance, third parties, and disguising conversations were clearly loading together. The items written to represent observation, evaluation of work, and the four types of explicit questions remained unclear, however. Thus, five additional items with low primary loadings and/or cross loadings on multiple factors were eliminated.

The fourth exploratory factor analysis revealed a seven factor model that made reasonable conceptual sense and provided a fairly good global fit, $\chi^2(293, N = 143) = 455.93, p = .00, CFI = .928, RMSEA = .062, SRMR = .033$. Examination of the item loadings indicated two additional items that were putting strain on the model, one of which had low cross loadings on two factors, and one of which had a high residual as well as a low primary loading. Consequently, those two items were eliminated and the EFA was conducted one last time. The final exploratory factor solution indicated that the seven factor model provided a good overall model fit, $\chi^2(246, N = 143) = 339.63, p = .00, CFI = .955, RMSEA = .052, SRMR = .030$. Several of the factors (i.e. surveillance, third parties, evaluation of work, and disguising conversations) made clear conceptual sense. Observation and the items representing the four types of explicit questions, however, provided mixed results in terms of how the items were associated with the factors and with each other. Table 5 displays the items and promax rotated factor loadings. Table 6 provides the factor correlations. Despite the lack of conceptual sense, the items for the “mixed factors” are included below for easy reference. These constructs, the reasons they were retained in the exploratory model, as well as the manner in which they were revised before study two will be discussed in detail in the discussion section.

TABLE 5
Information Seeking
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>	<u>F3</u>	<u>F4</u>	<u>F5</u>	<u>F6</u>	<u>F7</u>
Surveillance							
I found out information about the new employee by keeping my eyes and ears open to what was going on around me.	.23	.01	.19	.40	.15	.12	.01
I could tell if the new person was adjusting well by the body language s/he used around the workplace.	.01	.10	.13	.69	.10	-.03	.11
I walked around the new employee’s work space just to see “what was up.”	.16	.14	.13	.54	.02	.03	.14
I double checked to make sure s/he wasn’t making mistakes.	.09	.03	.11	.80	-.06	.03	.13
Disguising Conversations							
I used phrases like “uh-huh” during conversations with the new employee to keep him/her talking about the information I wanted.	.04	-.05	.03	-.03	.80	.01	.04
I shared experiences that I’d had on the job in the hope that s/he would share similar information with me.	.10	.04	.02	.11	.75	.03	.06
Through my behavior, I hinted to the new employee that I wanted more information about him/her.	-.06	.02	.12	.15	.66	.08	.06
Third Parties							
I checked with other people to see if they shared my opinions about the new employee.	.07	.01	.02	.01	.04	-.70	.05
I talked to other employees to find out how the new person was catching on.	.07	.02	.02	.03	.03	-.70	.10
Evaluation of Work							
I examined his/her work for mistakes.	.07	.02	-.03	.01	.02	.08	.76
I asked questions such as, “is everything going ok?”	-.06	.07	.12	.06	.32	.11	.55
I checked to see what s/he was accomplishing.	.01	.04	.16	-.01	.01	.20	.71
I made a point of asking him/her how things were going.	.09	.01	-.08	.13	.00	-.14	.54
I watched him/her in action to see how s/he handled tasks.	.03	.16	.02	.08	.08	.07	.62
Mixed Factor 1							
I learned about him/her based on things I saw around the workplace.	.54	.07	-.05	.02	.01	.09	-.08
I went about my tasks, but if any new information came my way, I paid attention to it.	.74	-.06	.38	.04	.11	.10	.01
I asked the new employee for information that I didn’t know about him/her.	-.74	.04	.26	-.02	.08	.12	.04
I looked for “answers” about the new employee in his/her behavior.	.89	.12	.14	.10	.01	.08	.04
I estimated whether or not s/he was working at a reasonable pace.	.86	.06	.12	-.04	.01	.06	.19

Mixed Factor 2

I talked informally with other people about him/her.	.19	.22	.46	.08	.08	.15	.05
I talked to the new person to see how the job was going for him/her.	.34	.05	.60	.16	.15	.06	-.04

Mixed Factor 3

I observed the way s/he interacted with others.	.18	.65	.23	.05	.01	.02	.08
I had casual conversations with the new person to learn more about his/her interests.	.05	.56	.03	.02	.11	-.05	.10
I checked his/her work to validate that it was being correctly.	.09	.64	-.01	.15	.13	.10	.02
I encouraged him/her to ask questions.	.08	.72	.05	-.03	.06	.09	.05
I paid attention to how long it took him/her to complete tasks.	-.06	.75	.00	.05	.07	.02	-.04

TABLE 6
Information Seeking
Exploratory Factor Analysis – Factor Correlations

Factor	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
1	1.00						
2	0.36	1.00					
3	-0.49	-0.39	1.00				
4	0.27	0.21	-0.03	1.00			
5	0.09	0.04	-0.03	0.23	1.00		
6	-0.05	-0.09	-0.08	-.013	-0.18	1.00	
7	-0.16	-0.16	-0.05	0.05	0.32	-0.18	1.00

(1) = Mix 1, (2) = Mix 2, (3) = Mix 3, (4) = Surveillance, (5) = Disguising Conversations, (6) = Third Parties, (7) = Evaluation of Work

Task Interdependence. The task interdependence scale was adapted from previous research (Taggar & Haines, 2006) and was intended to assess initiated and received task interdependence. Exploratory factor analysis revealed a well-fitting two factor solution that corroborated previous research findings, $\chi^2(13, N = 143) = 25.24, p = .02, CFI = .976, RMSEA = .081, SRMR = .035$. The eight interdependence items loaded cleanly onto two factors, which represented initiated and received task interdependence. Table 7 displays the items and promax rotated factor loadings. Table 8 provides the factor correlations.

TABLE 7
Task Interdependence
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>
Initiated Task Interdependence		
To what extent does the new employee depend on you for information and advice?	.85	-.06
To what extent does the new employee depend on you for materials, means, and other things they need?	.86	.02
To what extent does the new employee depend on your presence, help, and support?	.87	.06
To what extent does the new employee depend on you for doing his/her work well?	.68	.13
Received Task Interdependence		
To what extent do you depend on the new employee for information and advice?	.05	.73
To what extent do you depend on the new employee for materials, means, and other things they need?	-.02	.73
To what extent do you depend on the presence, help, and support of the new employee?	.12	.70
To what extent do you depend on the new employee for doing your work well?	-.05	.69

TABLE 8
Task Interdependence
Exploratory Factor Analysis – Factor Correlations

<u>Factor</u>	<u>1</u>	<u>2</u>
1	1.00	
2	0.47	1.00

(1) = Initiated Task Interdependence, (2) = Received Task Interdependence

Reliability Analysis

The final step was to examine the reliability, or internal consistency of the items. Cronbach's alpha is the commonly accepted measure of internal consistency within the field of communication, and was therefore used to determine the reliability of the sets of items on the veteran employee uncertainty and information seeking, as well as task interdependence scales. This analysis was conducted with the understanding that coefficient alpha assumes all items on a test to be Tau-equivalent (true score), meaning that each item measures the construct equally (i.e. statistically equal loadings) (Vogt, 2005). As the items are not Tau-equivalent, coefficient alpha

may underestimate the true measure of internal consistency. However, the three subscales within the final set of uncertainty items showed high levels of internal consistency (Newcomer Referent Uncertainty $\alpha = .87$, Newcomer Appraisal Uncertainty $\alpha = .85$, and Newcomer Relational Uncertainty $\alpha = .86$). The two task interdependence subscales also showed good reliability (Initiated Task Interdependence $\alpha = .89$ and Received Task Interdependence $\alpha = .80$). Overall, these results suggest a reliable set of items for measuring three dimensions of veteran employee uncertainty about new hires as well as two dimensions of task interdependence.

As previously discussed, four of the information seeking factors were clearly represented in the exploratory factor analytic model. These four factors approached good reliability, but will likely improve after revisions are made to the scale (Surveillance $\alpha = .61$, Third Parties $\alpha = .69$, Disguising Conversations $\alpha = .59$, Evaluation of Work $\alpha = .81$). The three mixed factors, unsurprisingly, showed low reliability (Mixed Factor 1 $\alpha = .68$, Mixed Factor 2 $\alpha = .54$, Mixed Factor 3 $\alpha = .40$).

Validity Analysis

The uncertainty and task interdependence scales showed good reliability, which is necessary for validity. However, good reliability does not ensure validity of the measure (Vogt, 2005). The results of this study corroborate the results from the pilot study. The three-factor model of veteran employee uncertainty emerged from two different sets of data, suggesting that *Newcomer Referent*, *Newcomer Appraisal*, and *Newcomer Relational Uncertainty* represent the three primary types of uncertainty that are relevant to veteran uncertainty about newcomers. In addition, *Transformation Uncertainty* did not emerge as an independent factor. This result also corroborates the findings from the pilot study.

The uncertainty scale appears to have good content validity. “Content validity is not a statistical property; it is a matter of judgment” (Vogt, 2005, p. 59). The items on the test came directly from subject matter experts that were interviewed during a previous study (Gallagher & Sias, 2009), which indicates the items represent particular types of uncertainty. The items appear to be relevant and useful in terms of assessing veteran employees’ uncertainty about new hires.

The task interdependence scale also shows good validity. The items were slightly reworded from their original form (as developed by Taggar and Haines, 2006), but the results of the exploratory factor analysis corroborate the two factor model that represents *Initiated* and *Received Task Interdependence*.

It was inappropriate to assess the validity of the information seeking scale at this time. The items require revision and further testing before they will be reliable enough to assume that validity can also be assessed.

Discussion

The purpose of study one was threefold. The first purpose was to test the veteran employee uncertainty scale after revisions were made according to the results of the pilot study. The second purpose was to run an initial test of the veteran employee information seeking scale with items that were 1) written according to statements made by the veteran employees in Gallagher and Sias’s (2009) interview study and 2) adapted from Miller’s (1996) Information Seeking Strategy Scale. The third purpose was to examine Taggar and Haines’s (2006) task interdependence scale in the context of the relationship between veteran and new organizational members. Each aspect of the study will be discussed in turn in the following sections.

Uncertainty

Previous research (Gallagher & Sias, 2009) established five types of uncertainty that veteran employees experience with regard to new hires. However, those dimensions were established through qualitative interviews and, therefore, only provided the starting point for developing survey items to test the dimensions of veteran uncertainty. The results of the pilot study presented earlier in this manuscript suggested support for three out of the five dimensions, including *newcomer referent uncertainty*, *newcomer appraisal uncertainty*, and *newcomer relational uncertainty*. The first research question of the current study addressed the underlying factor structure of veteran employee uncertainty about new employees in order to further examine the construct from a quantitative perspective and attempt to corroborate the results of the initial pilot study. Results of the current study further support the three factor model of veteran employee uncertainty about new employees.

Previous research (Miller & Jablin, 1991; Teboul, 1994) indicated that new employees experience uncertainty with regard to what their job responsibilities are (referent), their ability to do the job (appraisal), and how to interact with others in the organization (relational). The results of the current study indicate that veteran employees experience similar types of uncertainty; however in the case of veteran employees, the newcomer is the *source* of uncertainty, rather than the individual experiencing uncertainty. The exploratory factor analysis indicated strong support for three factors, which represented *newcomer referent*, *newcomer appraisal*, and *newcomer relational* uncertainty. In other words, veteran employees are uncertain about the tasks or job roles the newcomer is going to take on, the newcomer's ability to perform the tasks associated with the job, and how the newcomer will interact with other members of the organization. These results lend validity to the current three factor model of employee uncertainty because the

indicators of each type of uncertainty performed the same with the data set from study one as they did with the data set from the pilot study. Additionally, each of the three subscales had reliability coefficients of .85 or higher, suggesting that the set of items continue to perform as reliable indicators of three types of uncertainty.

Despite the continued support for referent, appraisal, and relational uncertainty, *transformation uncertainty* once again lacked support from the data. Transformation uncertainty was pursued in the current study with the assumption that it is a contextual aspect of uncertainty. Veteran employees that were interviewed in the original study (Gallagher & Sias, 2009) suggested that hierarchical status of the newcomer was relevant to transformation uncertainty. For example, a new boss potentially creates more uncertainty than a new coworker because the boss is in a position of power relative to other members of the organization. Thus, veteran employees would be uncertain about the changes the new boss will make, how they will be implemented, and what effect they will have on veteran members. The data, however, did not support transformation uncertainty as a relevant factor.

Descriptive data regarding the hierarchical status of the newcomer was collected in the hope that the sample could be split (according to higher vs. the same/lower organizational status) and compared to assess differences in the types of uncertainty that emerged, depending on the hierarchical and supervisory status of the newcomer. However, the sample contained only four participants who had a newcomer join the organization at a higher hierarchical status than the veteran him or herself. Consequently, I was unable to split the sample and compare for differences.

Despite the overall lack of support for transformation uncertainty, there were some interesting findings relevant to this construct. Two items that were written to represent

transformation uncertainty loaded strongly onto the *relational* uncertainty factor. The items were as follows: 1) I was unsure if s/he would bring about a lot of changes to the workplace and 2) I was uncertain if s/he would change workplace dynamics. The other relational uncertainty items that were retained in the model included the following: 1) I wondered how s/he would "fit in" with others in the organization, 2) I was uncertain how s/he would get along with other employees, and 3) I was uncertain if s/he would work well with others. When examining these items as a group, it becomes apparent that the two transformation items clearly coincide with relational uncertainty in a conceptual sense. In other words, phrases such as "changes to the workplace" and "change workplace dynamics" make sense in terms of *relational* uncertainty. Accordingly, those two items appear to assess transformation uncertainty in the context of the relationships between coworkers.

Another item that was written to represent transformation uncertainty loaded with the *appraisal* factor. The item was worded, I wondered whether I would have to "pick up the slack" until s/he was fully trained. "Picking up the slack" makes sense in terms of appraisal uncertainty because it relates to the new employee's motivation level. In other words, veterans are likely have to pick up the slack or take on extra job responsibilities to a greater extent if the newcomer is unmotivated to learn quickly. Conversely, a highly motivated newcomer may not change the veterans' job responsibilities as much because of a desire to quickly learn and become self-sufficient rather than rely on more experienced employees to complete tasks. Therefore, that item appears to assess transformation uncertainty in the context of the newcomer's ability and motivation level to do the job (i.e. will the veteran's workload change according to how well or quickly the newcomer is able to complete job tasks?).

The findings discussed above provide insight regarding transformation uncertainty. Rather than existing as a construct separate from the other three types of uncertainty, transformation may be the underlying dimension that is relevant to *all* aspects of uncertainty regarding a new employee. Previous research (e.g. Jablin, 2001; Louis, 1980; Miller & Jablin, 1991) indicated that the new employee's entry to a workplace represents a time of surprise, uncertainty, and sense making. Gallagher and Sias (2009) found that a new employee's entry also represents a time of surprise, uncertainty, and sense making for veteran employees. It follows that *change* is relevant any time a new member joins an organization. Although veteran employees may not always explicitly think about the potential changes associated with a newcomer's entry, the assumption that there is potential for change underlies any incident of surprise and uncertainty. Consequently, it may be more relevant to examine transformation in terms of how it breaks down according to the other three types of uncertainty.

The assumption that transformation is the underlying aspect of uncertainty regarding a newcomer's entry is theoretical at this point, based on the lack of support for transformation uncertainty as a separate construct and the tendency of the items to load with the other, established types of uncertainty. This new theoretical development regarding transformation needs to be tested in order to establish its validity; consequently, the scale was altered slightly to represent the potential dimensions of transformation within the other three established factors (referent, appraisal, and relational uncertainty). As previously discussed, two items that were originally written to assess transformation uncertainty loaded strongly with the relational uncertainty items. Those two items were not changed, but will be considered part of the relational uncertainty construct when moving into study two. Similarly, the item that loaded with appraisal uncertainty was retained as it was written, but will be considered part of the appraisal

construct from this point forward. One new item was written to represent the referent aspect of transformation: "I was uncertain how job roles would change with the addition of the new employee." The new perspective on transformation uncertainty was considered during study two data analysis procedures.

The revised uncertainty scale contained five items per factor, for a total of 15 items. The new referent (transformation) item as well as the item that was added to the appraisal construct need to be tested to determine how well they represent the construct and correlate with the other items for their respective sub constructs. However, the other 13 items have already established themselves as good indicators of veteran employee uncertainty about new hires. Study two added further support to the validity of the scale.

Although the uncertainty scale has developed well so far, information seeking has proven to be a more difficult construct to assess. The following section presents a discussion of the information seeking results, to include several limitations of the study that likely contributed to the difficulty in assessing the information seeking construct.

Information Seeking

The second purpose of study one was to run an initial test of the veteran employee information seeking scale with items that were 1) written according to statements made by the veteran employees in Gallagher and Sias's (2009) interview study and 2) adapted from Miller's (1996) Information Seeking Strategy Scale. Thus, the second research question was designed to determine the underlying factor structure of veteran employee information seeking. The scale was written to assess nine sub constructs, which represented the nine distinct information seeking tactics that were established during the interview study (Gallagher & Sias, 2009).

Of the nine theoretical constructs, only the following four were represented in the data: *surveillance*, *third parties*, *disguising conversations*, and *evaluation of work*. These four aspects of information seeking were represented by items that were intended to measure them. Of the total items that were retained after multiple rounds of exploratory factor analysis, six were adapted from Miller's (1996) scale. Three of those items assessed surveillance and two of them assessed disguising conversations. The remaining item represented *observation*, however observation did not emerge as a clear factor with this data set.

The fact that multiple items from Miller's scale performed well among veteran employees suggests there is some consistency of information seeking tactics between new and veteran organizational members, just as there is consistency in types of uncertainty. It should be noted, however, that Miller's original findings did not support surveillance or disguising conversations as distinct factors. Rather, surveillance was paired with observation to produce a factor he called "observe" while disguising conversations was paired with indirect questions to produce a factor he called "indirect." Third parties was a distinct factor in Miller's study, however (Miller, 1996). Essentially, there appear to be some consistencies as well as inconsistencies between the current findings and those of previous research regarding newcomers (Miller, 1996).

One information seeking tactic, *evaluation of work*, is distinct to veteran employees. This tactic "involved veterans examining the newcomer's work to reduce concerns and uncertainty about the newcomer's abilities to perform necessary tasks (i.e. appraisal uncertainty). Evaluation of work differs from observation in that the veterans emphasized *assigning value* to the work" (Gallagher & Sias, 2009, p. 37, italics in original). Evaluation of work was quantitatively supported as a factor by the data in the current study. This information seeking tactic is unique to

veteran employees because their ability to *evaluate* depends on their experience with job tasks and understanding organizational norms.

Although four of the constructs were clearly supported by the data, six of the theoretical constructs did not emerge as factors. Previous research (Gallagher & Sias, 2009; Miller, 1996) has suggested that observation should be a salient information seeking tactic any time a new employee joins an organization and there is support for the use of observation by both newcomers and veteran employees. Veteran employees indicated that observation was a common method for obtaining "information about specific attitudes or behaviors" and that they "often observed procedural aspects of the job to gauge the newcomer's proficiency level" (Gallagher & Sias, 2009, p. 35). Miller (1996) also found strong support for observation as a popular information seeking method among new employees. Regarding the current study, several items that were written to represent *observation* showed factor loadings over .60; however, those items were scattered among a variety of factors instead of loading together to form one distinct factor representing the observation construct.

The lack of support for observation was surprising, considering the support it garnered among the interview participants in the original study (Gallagher & Sias, 2009). The lack of support for observation is also surprising when we consider that *surveillance* was supported as a distinct factor. Although observation and surveillance are different in the way that meaning is assigned to the information - surveillance is based on retrospective sense making, whereas observation is more purposeful - they are both indirect forms of "watching" behavior. Theoretically, it would make sense that veteran employees who use surveillance also engage in observation. Miller (1996) found that observation and surveillance merged together as one factor that represented a tactic used by new employees.

The lack of support for observation in study one was likely due to aspects of the instrument rather than the construct itself. In hindsight, the survey was much too long, as it contained 89 items (excluding demographics) and 15 constructs (including uncertainty, information seeking, and hierarchical status). Despite using multiple versions of the survey to prevent order effects, I believe the participants suffered from fatigue while completing the survey. In addition, many of the items could have been worded more clearly to create a better distinction between the constructs, which I will discuss in more detail in the following paragraphs. Accordingly, observation was pursued as a relevant information seeking tactic in study two.

The four types of *overt questions* also failed to gain support from the data. Interviews revealed the use of *background questions*, *eliciting questions*, *hypothetical situations*, and *checking in* among veteran employees (Gallagher & Sias, 2009). While qualitatively different, it may be difficult to assess a quantitative difference between these constructs because the distinctions between them are minute. Once again, I believe the nature of the instrument made it difficult for participants to distinguish between the different types of questioning tactics. The result was several "mixed factors" that contained items from a variety of theoretical constructs. All four of these tactics fall under the umbrella of *overt questions*, thus it may be more appropriate to assess them as one construct that encompasses a variety of question types. Therefore, the instrument was revised to include six items that are intended to assess overt questions in general. The six items represent background questions, checking in, and eliciting questions because those three elements showed some support from the data. Assessing overt questions as one construct substantially reduced the length of the survey and decreased the extent to which participants were required to distinguish between similar items when responding to the

survey. Hypothetical situations was excluded from this point forward because it did not show any support from the data.

The wording of some of the information seeking items represents another limitation in the instrument itself. In trying to assess multiple aspects of overt questions, some of the individual items became too lengthy, as I was attempting to word the same concept in a different manner. The revisions to the instrument included rewording or shortening some of the items to make them more concise. For example, the original item "I asked the new employee specific, straight to the point questions about his /her life" was reduced to "I asked him or her questions." The shortened item is simpler and represents the overt questions aspect of information seeking. By excluding the four specific types of overt questions, the lengthy and somewhat confusing items can be excluded.

Information seeking is a behavioral, action based construct. Analysis of the items reveals instances in which items with similar wording loaded together, despite being written to belong to different theoretical constructs. "Mixed factor 2" for example, is made up of the two following items: "I talked informally with other people about him/her" and "I talked to the new person to see how the job was going for him/her." The first item was written to represent *disguising conversations* while the second was written to represent the *checking in* aspect of overt questions. These are entirely different information seeking tactics, as one focuses on communication with employees other than the newcomer, while the other focuses on communication with the newcomer him or herself. However, these items loaded together to form a factor. I believe the reason for the correlation between the items is the verb in each sentence - talked. Both items used the same action word, even though the remaining content of the items and the information seeking tactic they were designed to assess were different. This example, as

well as other similar examples, led me to believe that the action word in the item likely cues the participant in to the meaning of the item. If this is the case, one needs to be careful with item wording so that all of the items designed to represent one information seeking tactic share very similar action words. Consequently, a few items were reworded to fit better with the other items in their subconstruct. "I examined his/her work for mistakes" for example, was changed to "I checked his/her work for mistakes" because the other *evaluation of work* items used "checked" or simple synonyms of it.

The third and final part of study one was to assess the validity of the task interdependence scale.

Task Interdependence

The third purpose of study one was to examine Taggar and Haines's (2006) task interdependence scale in the context of the relationship between veteran and new organizational members. The original items were slightly reworded to fit the veteran employee perspective on interdependence with the newcomer. Initiated task interdependence is "the degree to which one employee feels that others rely upon him or her to accomplish their work" (Taggar & Haines, 2006, p. 214). Received task interdependence, on the other hand, is defined as the degree to which an employee relies on others to accomplish his or her own work. Both the *initiated task interdependence* and *received task interdependence* scales performed well by producing the same two factor solution that Taggar and Haines (2006) found in their original research. Therefore, the scale appears to be valid for use among veteran employees specifically.

Task interdependence can result in a variety of positive effects. According to Wageman (1995), "Studies of task interdependence have demonstrated that higher levels of task interdependence result in more communication, helping, and information sharing than do

individualistic tasks” (p. 149). Task interdependence “enhances members’ expectations of help and information sharing from others” (Wageman, 1995, p. 150) and highly interdependent work environments necessitate cooperation between employees. Taggar and Haines (2006) also suggested that social exchange theory motivates members of interdependent work groups to assist their coworkers, particularly when received task interdependence is high. Therefore, task interdependence should be a relevant variable to socialization processes and to veteran employee uncertainty and information seeking in particular. Study one, however, was not designed to assess these relationships. Rather, study two tested the relationship between task interdependence, uncertainty, and information seeking behaviors among veteran employees.

Conclusion

Study one produced several useful insights. The task interdependence items performed well and the results validate the existing scale (Tagger & Haines, 2006). Thus, initiated and received task interdependence were carried forward to study two without any further revisions to the survey items.

Analysis of the uncertainty scale revealed the same three factor solution that emerged in the pilot study. The results lend further support to *referent*, *appraisal*, and *relational* uncertainty as the three relevant types of uncertainty, regardless of one's position in the organization. Further validation of three primary types of uncertainty is an important theoretical development because it begins to fill the gap in the existing knowledge regarding organizational socialization processes. Past research has provided us with a plethora of information regarding the newcomer's experience with organizational encounter. The current project provided insight from the perspective of veteran employees and the results indicate that, while newcomers experience three types of uncertainty upon beginning a new job, they also create the same three types of

uncertainty for veteran members of the organization. The theoretical and practical implications of the overall project will be discussed in more detail in the discussion section of study two.

Despite the success of the uncertainty and task interdependence scales, the information seeking aspect of the project proved to be more difficult than originally anticipated. Consequently, there are several limitations to the study that are largely associated with the information seeking portion. The survey was too long and asked the participants to make minute distinctions between similar information seeking tactics. In addition, some of the items were not worded as clearly or concisely as they could have been, which likely caused some confusion among participants. Although not ideal, these findings are necessary to the scale development process. According to Brown (2006), multiple rounds of data collection and revision are required to establish a psychometrically sound measure of any construct. Beginning with information from subject matter experts (i.e. the interview participants) aided the item construction process; however that process is never simple or easy.

The trouble is that measured variables inevitably represent the idea construct imperfectly.

These imperfections come in two types: deficiency and contamination. A variable is deficient to the extent that the domain of interest is not covered. Contamination of a construct by a measured variable is when the measure contains information that should not be part of the construct. (Kline, 2005a, p. 26)

The limitations of the measure likely represent a form of contamination. As previously discussed, the items were not as clear as they could have been and the distinction between constructs was blurred. However, the results provided useful information in terms of how the instrument needed to be revised to better measure veteran employee information seeking. A

complex, multi-faceted construct requires substantial revisions and development of theoretical understanding before one can hope to measure it successfully.

The revised version of the instrument contained 15 uncertainty items, 27 information seeking items, and eight task interdependence items, for an even total of 50. The test development work in the pilot study and study one of the dissertation project were geared toward preparing the instrument for use in study two. The goal of study two was to assess the relationships between the variables. A discussion of relevant theory and literature, hypotheses, method, results, and discussion follow in chapter three.

CHAPTER THREE

MODEL TESTING

The primary goal of study three was to test the relationships between task interdependence, veteran employee uncertainty, and information seeking about new hires. The previous psychometric work in exploratory factor analysis was important because it laid the foundation for testing these relationships. Although the main goal of this study was to test hypotheses, the psychometric properties of the instruments first needed to be assessed again. Thus, the first step was to further establish the reliability and validity of the instruments to ensure they were appropriate for use in hypothesis testing. Scale development is a lengthy and ongoing process that requires multiple rounds of revision before the manifest variables represent stable measures of the constructs of interest. Consequently, the pilot study and study one focused on exploratory factor analysis in order to make appropriate revisions to the instrument. Study two, however, utilized both exploratory and confirmatory factor analysis, as well as path analysis. “The technique of CFA estimates only unanalyzed associations among factors, not direct causal

effects” (Kline, 2005a, p. 75). Path analysis, however, allows the researcher to propose a model to account for the relationships between variables.

Study two began with EFA in order to examine the factor structure with the new data set. The EFA results were used to specify the CFA model. After confirming the factor structure with CFA, the hypotheses were tested using path analysis. This chapter provides a discussion of the theoretical development, research questions, and hypotheses, followed by the methods, results, and discussion of the research findings. The following section details the hypotheses regarding the relationships between the variables of interest.

Theory Development, Research Questions & Hypotheses

Research indicates that uncertainty and information seeking are related concepts. Previous research indicates that organizational entry is a time of uncertainty for new employees (i.e. Jablin, 2001; Miller & Jablin, 1991; Miller, 1996; Teboul, 1994) as well as veteran employees (Gallagher & Sias, 2009). “Uncertainty exists to the degree to which we are unable to render the environment predictable...” and thus “is related to the inability to predict or explain” (Kramer, 2004, p. 8). According to Uncertainty Reduction Theory (Berger & Calabrese, 1975), individuals work to diminish the level of uncertainty they experience in order to have greater levels of predictive control over their environments. The third axiom of URT suggests that high levels of uncertainty predict increases in information seeking behavior.

Organizational socialization scholars have long agreed that uncertainty is a primary catalyst for information seeking behavior among members of organizations (i.e. Jablin, 2001; Miller & Jablin, 1991; Teboul, 1995). However, the relationship between uncertainty and information seeking has yet to be examined from the perspective of veteran members with regard to new hires. Gallagher and Sias (2009) provided qualitative data that suggest a relationship

between veteran uncertainty and information seeking; however, we cannot make claims about the relationship between these variables until we test them empirically. Accordingly, the following general research question and hypothesis were posed to examine the relationship between veteran employee uncertainty and information seeking about new hires:

RQ1: What is the relationship between veteran employee uncertainty and information seeking about new employees?

It would be useful to determine the basic relationship between uncertainty and information seeking; however it was of greater interest to determine the relationships between the specific types of uncertainty and information seeking because both are multifaceted constructs. Newcomer referent uncertainty refers to uncertainty about the tasks the new employee will be performing. Logically, veteran employees would not evaluate the newcomer's work, elicit questions, ask background questions or present him or her with hypothetical situations because these tactics would not provide information regarding the job duties the newcomer is taking over. It would make more sense to use observation, surveillance, disguising conversations, and third parties to seek information regarding tasks and duties. Consequently, the following hypotheses were posed:

H1: Newcomer referent uncertainty predicts the use of observation.

H2: Newcomer referent uncertainty predicts the use of disguising conversations.

H3: Newcomer referent uncertainty predicts the use of third parties.

Newcomer appraisal uncertainty refers to uncertainty about the newcomer's past work experience, skills, ability and/or motivation to perform the job. Every aspect of both direct and indirect information seeking methods should provide relevant information regarding appraisal uncertainty. For example, one could glean insight regarding ability or motivation by observing

what the newcomer is doing and reflecting on observed actions later (surveillance). Talking with coworkers or other third parties would be a method of finding out how other people perceive the newcomer's skill and ability level. Disguising conversations with the newcomer could provide insight regarding how experienced or motivated the newcomer might be. Finally, overt questions have the potential to provide information regarding skills, ability and motivation. For example, asking the newcomer about his or her work background could provide the veteran with knowledge of the newcomer's level of experience, which contributes to his or her ability to perform the tasks of the new job. Thus, the following hypotheses were posed:

H4: Newcomer appraisal uncertainty predicts the use of observation.

H5: Newcomer appraisal uncertainty predicts the use of disguising conversations.

H6: Newcomer appraisal uncertainty predicts the use of third parties.

H7: Newcomer appraisal uncertainty predicts the use of evaluation of work.

H8: Newcomer appraisal uncertainty predicts the use of overt questions.

Newcomer relational uncertainty refers to uncertainty about how the newcomer will interact and fit in with others in the organization. Evaluation of work would not be relevant to relational uncertainty because the newcomer's output relates specifically to ability level rather than relationships. However, observation and surveillance, disguising conversations, third parties, and overt questions all have the potential to provide relational information. For example, veterans can watch how the newcomer interacts with coworkers, as well as retrospectively reflect on cues they notice. Disguising conversations and overt questions are methods of interacting with the newcomer that could provide insight into how the newcomer communicates. Finally, veterans can use third parties to compare their own perceptions of the newcomer with those of their coworkers. Thus, the following hypotheses were posed:

H9: Newcomer relational uncertainty predicts the use of observation.

H10: Newcomer relational uncertainty predicts the use of disguising conversations.

H11: Newcomer relational uncertainty predicts the use of third parties.

H12: Newcomer relational uncertainty predicts the use of overt questions.

Although uncertainty is considered to be a direct catalyst of information seeking behavior, other variables likely contribute to information seeking as well. For example, the level of task interdependence between the veteran and the newcomer that is required to complete tasks likely plays a role in the veteran's level of uncertainty. Employees with a high degree of interdependence rely heavily on each other, while those with lower interdependence can complete tasks without relying on other employees (Taggar & Haines, 2006). Research has shown that high task interdependence contributes to more communication and information sharing between employees (Taggar & Haines, 2006; Wageman, 1995). It follows that higher levels of employee interdependence would be associated with higher levels of uncertainty, but the specifics of this relationship are currently unknown. Thus, the follow general research question was posed:

RQ2: How is task interdependence related to veteran employee uncertainty and information seeking about new hires?

Task interdependence can be separated into two specific subconstructs: received and initiated task interdependence (Taggar & Haines, 2006). Received task interdependence refers to the degree to which an employee relies on other people to do his or her job. A veteran with a high degree of received task interdependence (in relation to the new employee) must rely heavily on the newcomer to complete job tasks. It logically follows that received task interdependence creates appraisal and relational uncertainty because the newcomer's ability, as well as his or her

communication style could drastically affect the veteran's ability to complete tasks. Conversely, if a veteran employee is aware that he or she will be relying on a newcomer, s/he will probably already have an understanding about what the newcomer's tasks will be prior to the newcomer's entry and thus have little uncertainty regarding what duties the newcomer will be performing.

The following hypothesis regarding received task interdependence was posed:

H13: Received task interdependence predicts newcomer relational uncertainty.

H14: Received task interdependence predicts newcomer appraisal uncertainty.

On the contrary, initiated task interdependence refers to the degree to which other people rely on an individual to complete their tasks. The knowledge that the newcomer will be relying on the veteran to succeed is not likely to incite the same degree of uncertainty that received task interdependence will. In an initiated task interdependence scenario, the veteran employee has more control over the situation because s/he is the person in charge of helping the newcomer, rather than the other way around. Therefore, appraisal uncertainty should not be particularly relevant. Veterans may experience some degree of relational uncertainty simply because they will be required to work with the newcomer and it is natural to wonder about his or her personality. The following hypothesis relevant to initiated task interdependence was posed:

H15: Initiated task interdependence predicts newcomer relational uncertainty.

In addition to predicting uncertainty among veteran employees, task interdependence may directly predict the use of information seeking tactics as well. According to Taggar and Haines (2006) and Wageman (1995), high task interdependence contributes to more communication and information sharing between employees. Thus, higher levels of interdependence may elicit information seeking directly and, in essence, bypass uncertainty. A veteran employee may not feel particularly uncertain about the newcomer, but if he or she is

required to work closely with that person, the veteran will likely need to gather information that is necessary to complete the job and build a working relationship. Specifically, veteran employees in higher task interdependence situations may try to gather information about the newcomer by observing them work and interact with others, asking them questions in either an overt or disguised way, and using third parties to gather other employees' opinions. These information seeking tactics would provide the veteran with information that could be useful in terms of learning how the newcomer approaches tasks, as well as his or her communication style - factors that would be less relevant in a low task interdependence situation. Whether the newcomer and veteran are engaged in a received or initiated task interdependence scenario is likely less important when uncertainty is not a mediating variable because either way, the newcomer and veteran will be working closely together, which promotes the need for information sharing. Thus, the following hypotheses were posed:

H16: Received task interdependence predicts observation.

H17: Received task interdependence predicts overt questions.

H18: Received task interdependence predicts third parties.

H19: Received task interdependence predicts disguising conversations.

H20: Initiated task interdependence predicts observation.

H21: Initiated task interdependence predicts overt questions.

H22: Initiated task interdependence predicts third parties.

H23: Initiated task interdependence predicts disguising conversations.

Although there may be direct paths between task interdependence and information seeking, there may be indirect effects in the model as well. It is logical to assume that if task interdependence predicts uncertainty and uncertainty predicts information seeking, task

interdependence may also predict information seeking through uncertainty as a mediating variable. Path analysis allows one to assess both the direct and indirect paths between the observed variables and thus enables conclusions about mediation models. The following research question relevant to uncertainty as a mediating variable was posed:

RQ4: How does uncertainty function as a mediating variable between task interdependence and information seeking about new hires?

Results for the research questions and hypotheses discussed above will allow researchers to explain veteran employee uncertainty and information seeking to a greater extent. Better explanatory power can lead to the ability to predict behavior and provide information that is relevant to practitioners in terms of improving the overall effectiveness and efficiency of their socialization practices. The next sections detail the methods that were used to test the hypotheses discussed above.

Method

Participants

Data were collected from employees who had been employed by their current organization for at least one year and had a new employee join the organization within six months prior to the time of data collection. These criteria ensured that participants were familiar enough with their organizations to be considered “veterans” and that participants had a fairly recent memory of the new employee joining the ranks.

Random sampling was impossible, as I needed to locate a specific population of interest. Therefore, I used a modified purposive sampling technique. I made contact with veteran employees who fit my criteria through personal contacts. I also asked undergraduate students enrolled in a lower level communication course to assist with recruiting survey respondents. The

undergraduates were given course credit to identify respondents who fit the criteria for the study, ask them to fill out the survey, and provide me with each person's contact information. I then made direct contact with each of the potential respondents and disseminated the survey via email. The online format facilitated distribution to veteran employees who were not necessarily local to the area. Because I made direct contact with each participant, I maintained control over who responded, thus avoiding error due to participants who did not meet the criteria of the study.

When running factor analyses, samples less than 100 are considered small, 100 – 200 are considered medium sized, and samples larger than 200 are considered large (Brown, 2006). Surveys were distributed to a total of 224 participants and 160 surveys were returned. 7 sets of responses were excluded prior to analysis because the respondents did not meet all of the criteria for the study or the survey contained substantial missing data. The final data set included a sample size of 153. The final response rate, therefore, was 68%.

Of the 153 participants, 86 were women (56%) and 66 were men (43%); 1 declined to indicate his or her sex. The participants represented a wide range of positions within their organizations, ages, tenure at the organization, and managerial levels. The participants' positions ranged from entry-level hourly employees to senior level administrators. 54 employees had no supervisory responsibilities, 32 were first line administrators, 19 were mid level administrators, 21 were senior level administrators, and 24 indicated other supervisory responsibilities (e.g. they owned their own business). 113 participants worked full time, while 40 worked part time. The tenure of participants within the organization ranged from 1 to 35 years ($M=7.16$, $SD=7.10$). Participants held their current position within the organization from six months to 30 years ($M=5.29$, $SD=4.30$). The participants' ages ranged from 18 to 60 years ($M=36.00$, $SD=13.89$). 126 employees identified as Caucasian, four were Hispanic, five were African American, 15

were Asian, and three Other. The participants were individuals from the education (both university and elementary), hospitality, medical, technology, retail, construction, manufacturing, athletic, veterinary, financial, non-profit, and small private business industries. The organizations were located in multiple cities throughout the United States.

Instruments

The uncertainty and information seeking items were revised as necessary based on the results of the exploratory factor analyses conducted in study one. The eight task interdependence items that represented two types of task interdependence were not changed prior to data collection for study two. The uncertainty scale was reduced to 15 items, which represented three types of uncertainty. The information seeking scale was condensed to 27 items, representing five information seeking tactics. A total of 50 items were retained for use in study two. Three versions of the survey were used, such that the order of the constructs (i.e. uncertainty, information seeking, and task interdependence), as well as the order of the items within the constructs, were changed in order to control for order effects.

Procedures

The procedures included a step-by-step progression of analyses on the data. First, the descriptive characteristics of the items were examined to make sure the data met the normality requirement of the estimation procedures (i.e. skew < 2.99 and kurtosis < 9.99). Then the data underwent EFA to corroborate the EFA results from study two and determine how to specify the CFA model. Third, the data were submitted to CFA to confirm the factor structure and establish the ability to test hypotheses. Fourth, the reliability of the scales was assessed. Finally, the data were submitted to path analysis to assess the pattern of relationships among the variables.

Exploratory Factor Analysis. The purpose of exploratory factor analysis is to determine the number and nature of latent constructs that account for the correlations between the manifest indicators (Brown, 2006). The factor structure of the uncertainty and task interdependence items was well established during study one. However, it was necessary to corroborate that factor structure on a separate data set. The factor structure of the information seeking items was less clear, as I discussed relevant to the results of study one. Thus, the EFA was used to further establish the factor structure of the information seeking construct.

The same estimation procedures and model assessment criteria for the EFA results were used in study two that were used in study one. Maximum likelihood estimation is recommended any time one is planning to move into a confirmatory analytic framework (Brown, 2006). Additionally, robust maximum likelihood is recommended for non-normal data. Although the data set was fairly normal (all skew and kurtosis values fell within acceptable limits), there were a few moderately skewed items as well as minimal patterns of missing data. The MLR estimation procedure in the Mplus statistical software package, which provides corrected standard errors, was used for all analyses.

The appropriate number of factors was established by examining the Eigen values and global fit statistics, to include Chi-square, CFI, SRMR, and RMSEA. The specific parameter estimates were also examined, in addition to the overall model fit, to verify which items loaded onto which factors. Because the EFA was used in study two to corroborate the results of study one, the analysis was substantially theory driven rather than primarily data driven. Specifically, the items had been written and revised to represent specific aspects of uncertainty, information seeking, and task interdependence and the EFA was used to verify that the theorized factor structure was stable with a new data set before moving into a confirmatory framework.

Confirmatory Factor Analysis

Testing the measure using CFA required six steps that are discussed in detail in the sections below: model specification, model identification, data preparation, model estimation, and model testing (Kline, 2005a). The first step in conducting a CFA study is to *specify the model*, which includes actually drawing a picture of the model. Specification was done prior to data collection to ensure that the predicted model had enough degrees of freedom to run a CFA with the intended variables. CFA differs from EFA in that all of the relationships are specified a priori. I specified which indicators were associated with which factors, according to the earlier EFA analyses. Drawing the model provided a visual representation of these relationships and allowed me to specify which parameters were free (needed to be estimated) and which parameters were fixed (to zero or 1). Drawing the model is also important and relevant to the second step.

The second step, *model identification*, included two parts. “In order to conduct a CFA, every latent variable must have its scale identified. By nature, latent variables are unobserved and thus have no defined metrics (units of measurement). Thus, these units of measurement must be set by the researcher” (Brown, 2006, p. 62). The metric of each factor was set by *scaling*. The best approach to scaling is to take the best item and set the metric of the factor according to the item. The “best” item for each factor was the one with the highest primary loading and lowest cross loading. The variance of that item was transferred to the factor, so the factor variance became the item variance. This process was accomplished by fixing that particular parameter (the relationship between the chosen item and the factor) to 1, which means that parameter was not estimated.

The second aspect of model identification was *statistical identification*. A CFA model can only be estimated if the number of parameters to be estimated is less than or equal to the number of unique bits of data in the variance/covariance matrix (Brown, 2006). Unique bits of data = $p(p + 1)/2$ where p = the number of variables (indicators). For example, 9 variables yield 45 unique bits of data (9 variances and 36 covariances) in the data matrix. The number of unique bits of data minus the number of parameters to be estimated equals the degrees of freedom. Only an over identified model, or one in which there are more unique bits of data than parameters to be estimated, will run successfully when submitted to the CFA.

The third step was to *prepare the data*. The maximum likelihood estimation procedure I used assumes normality of the data, so data preparation is an important step to ensure that none of the items contained extreme skew or kurtosis (Brown, 2006). However, the data were prepared prior to conducting the EFA, which rendered this step unnecessary for the CFA.

The next step was to *estimate the model*. Estimation simply refers to running the CFA in Mplus. The purpose of estimation in general is to estimate a data matrix that reproduces the observed data matrix with the least amount of residual (Brown, 2006). In other words, the actual data matrix should match the predicted model as closely as possible. Maximum likelihood, in particular, also maximizes the likelihood that the model would perform the same if the data were gathered from the same population again. Robust maximum likelihood was used to account for the minor non-normality in the data. Initially, each scale (i.e. uncertainty, information seeking, and task interdependence) were submitted individually to CFA. It was appropriate to estimate each model separately because each represents a different instrument, rather than subsets of the same instrument. The specific types of uncertainty, information seeking, and task interdependence represent the different subconstructs within each instrument.

After each model was estimated individually, all three scales were submitted to CFA simultaneously. This approach was necessary to make sure the entire measurement model withheld its integrity prior to hypothesis testing. It is important to note that confirming the measurement model in its entirety would be extremely important had I planned to conduct structural regression, although confirmation is still desirable when conducting the path analysis. The overall complexity of the model required that some parameters be cut in order to achieve identification of the model with the inclusion of all ten constructs (three uncertainty, five information seeking, and two task interdependence) being tested simultaneously. Therefore, the strongest two items for each factor were chosen to represent the factors in the CFA. The simplified model included 20 independent manifest variables and 10 latent factors. Additionally, the strongest items (those with the highest primary loading and lowest cross loading) were chosen to set the metric of the factor.

Once the model had been estimated I *tested the model* by examining the output. Testing the model required that I examine the global fit, the specific parameter estimates, and localized area of strain. I will explain each of these procedures in the following sections.

The global fit of each model was examined according to four fit indices. The chi-square, which is a goodness of fit test, is a measure of absolute fit (Brown, 2006). A non-significant chi-square is actually desirable because it indicates there is not a significant difference between the observed model and the predicted model. However, the chi-square is sensitive to sample size, so it will nearly always be significant in large samples. Consequently, “while χ^2 is routinely reported in CFA research, other fit indices are usually relied on more heavily in the evaluation of model fit” (Brown, 2006, p. 81). Thus the model fit was assessed using the standardized root mean square residual, which is also a measure of absolute model fit. “Conceptually, the SRMR

can be viewed as the average discrepancy between the *correlations* observed in the input matrix and the correlations predicted by the model” (Brown, 2006, p. 82). The SRMR can range from 0.0 to 1.0, with 0.0 indicating a perfect fit. Thus, an SRMR value of .05 or lower is ideal.

The root mean square error of approximation, also known as RMSEA, was also used to assess global model fit. The RMSEA is a measure of absolute fit with a parsimony correction (Brown, 2006), meaning that it penalizes models with more parameters. It is also based on a non-central chi-square, which means it examines absolute fit when the model is not perfect. “The RMSEA is an “error of approximation” because it assesses the extent to which a model fits *reasonably* well in the population” (Brown, 2006, p. 83). The non-central chi-square distribution was also used to determine confidence intervals, which indicated the precision of the RMSEA point estimate. An RMSEA of .06 or less is considered ideal.

Finally, the comparative fit index, also known as CFI, was used as a measure of relative fit. CFI compares the observed model to the predicted model (Brown, 2006). It ranges from 0 – 1 with numbers closer to 1 being better because that indicates a closer fit of the two models. A CFI of .90 or .95 indicates good fit of the model. Together, these four fit indices provided a picture of global fit of the model. However, it was also important to examine the specific parameter estimates.

The parameter estimates refer to the factor loadings. The loadings in CFA are based on the variance/covariance matrix and represent the amount of variance in the item that is accounted for by the factor (Brown, 2006). The CFA output provides statistical significance tests of each of the loadings. Thus, I examined the loadings for significance, but I also made sure they made theoretical sense (i.e. the items loaded with the appropriate factors according to what I expected after conducting the EFA). I also checked for areas of localized strain (ill fit) in the model, which

was accomplished by examining the residuals. The residuals refer to error and are calculated as the predicted correlation minus the observed correlation. The residual matrix “reflects the difference between the sample and model-implied matrices” and “provides specific information about how well each variance and covariance was reproduced by the model’s parameter estimates” (Brown, 2006, p. 115). The output provided statistical significance tests of the residuals as well, so I was able to examine them for areas of strain on the model. Finally, I examined the modification indices. The modification indices provide information regarding parameters that, if added to the model, would improve the overall fit. Specifically, the modification index refers to the amount the chi-square will decrease (improve) if that parameter is added to the model.

Modification indices bring me to the final step in testing the model, *model modification*. Modifications are only made as necessary and should only be included if modification provides a significant improvement in fit *and* it makes theoretical sense to do so (Brown, 2006). For example, I would not allow an item to cross load if it did not make theoretical sense for that item to be related to more than one factor. The CFA models for the current study did not require modification to provide good fit to the data. After examining the modification indices produced by the CFA, assessing scale reliability was the final step before testing the path model.

Reliability Analysis

Cronbach's alpha is typically used in communication research and is thus the norm for calculating reliability in our field. Alpha has been shown to produce inaccurate measures of reliability under some circumstances. For example, “if the measure contains correlated measurement errors, α can either underestimate *or* overestimate scale reliability, depending on the underlying measurement parameters” (Brown, 2006, p. 338). However, the factor structure

among the constructs in this study was quite clean (this will be discussed in detail in the results section). Therefore, Cronbach's alpha was used to assess reliability of each subscale.

Reliability is necessary, but insufficient for validity. In other words, a reliable scale may or may not be valid, but an unreliable scale cannot be valid (Kline, 2005a). Validity generally means that the instrument measures what it is supposed to measure, but also does *not* measure what is not supposed to measure. Construct validity refers to the degree of accuracy with which the instrument measures the construct of interest. There is no single measure of construct validity. Rather, it is established over time and a series of studies, which was the purpose of conducting the pilot study and revising the scale through EFA work in studies one and two before moving into the CFA framework.

Convergent and divergent validity both include internal comparisons of the measure rather than comparing it to an external source (Kline, 2005a). Basically, when items correlate with other items associated with the same factor, they show convergent validity because they are similar to the things they are supposed to be similar to. Similarly, when items have low cross loadings, it indicates divergent validity because they are not measuring something else that they are not supposed to be related to. Thus, convergent and divergent validity were assessed by examining the primary and cross-factor loadings. Once the CFA model confirmed the factor structure, indicated a good fit to the data, and showed good reliability among the subscales, I moved on to hypothesis testing.

Path Analysis

"The technique of PA involves the estimation of presumed causal relations among observed variables" (Kline, 2005a, p. 93). Path analysis is based on correlations between variables and it is often presumed that correlation does not imply causation. However, the

specification of a path model is based in theory regarding the relationships between the variables of interest. The researcher presumes that X causes Y (and not the other way around) for a particular reason that is derived from theoretical understanding of the constructs. Additionally, time precedence (X precedes Y in time) strengthens the inference of causality. However,

When the variables are concurrently measured, it is not possible to demonstrate time precedence. Therefore, the researcher needs a very clear, substantive rationale for specifying that X causes Y instead of the reverse or that X and Y mutually influence each other when all variables are measure at the same time. It is only from a solid base of knowledge about theory and research that one can even begin to address these requirements for inferring causation from correlation. (Kline, 2005a, p. 95)

The theoretical base for specifying a particular path model is clearly important. For example, Uncertainty Reduction Theory posits that uncertainty acts as a catalyst for information seeking (Berger & Calabrese, 1975). Thus, the model put forth in the current study assumes the correlation between uncertainty and information seeking is causal in nature, with uncertainty acting as a predictor of information seeking behavior. Additionally, task interdependence is assumed to be a predictor of both uncertainty and information seeking. Logically this makes sense because task interdependence is a factor that is determined by the nature of the job and tasks that are performed by employees. Experiencing uncertainty could not *cause* two employees to be interdependent upon one another to complete tasks, nor could the use of information seeking tactics. The reverse however, could easily be true - working interdependently with another person can create uncertainty about that person's work ethic, ability, and communication style. Working interdependently also requires that employees gather information about one another that will assist them in completing tasks. Therefore, the path model presented in this

study assumes causality in the following direction:

Task Interdependence → **Uncertainty** → **Information Seeking**

Although presumed causal effects can be specified and tested in PA, "this technique analyzes observed variables, not latent variables that correspond to hypothetical constructs" (Kline, 2005a, p. 75). Path analysis is thus simpler than structural regression analysis, as it deals with manifest variables only. The consequence of not accounting for latent variables is that the exogenous variables are measured without error. However, that does not mean the exogenous variables are actually error free; path analysis simply does not have a way to account for error in the independent variables. This is often considered a weakness of path analysis. The alternative is to use "an analytic approach that combines features of both CFA and PA. It is possible in SEM to specify an SR model that has a structural component (like a path model) and a measurement component (like a factor model)" (Kline, 2005a, p. 75). Structural regression analysis, consequently, accounts for both manifest and latent variables.

Although structural regression is the more desirable type of analysis, the sample size of the current study did not allow for stable SR results. Although the sample was medium sized at 153 participants, model complexity must also be taken into consideration. "More complex models - those with more parameters - require larger samples than more parsimonious models in order for the estimates to be comparably stable. Thus, a sample size of 200 or even much larger may be necessary" (Kline, 2005a, p. 110) for complex models. A larger sample would have been desirable considering the complexity of the model being tested in the current study; however, the difficulties of locating enough participants who met the specific sample requirements prevented me from obtaining a larger sample. Consequently, path analysis was used to assess the pattern of relationships between the variables rather than structural regression.

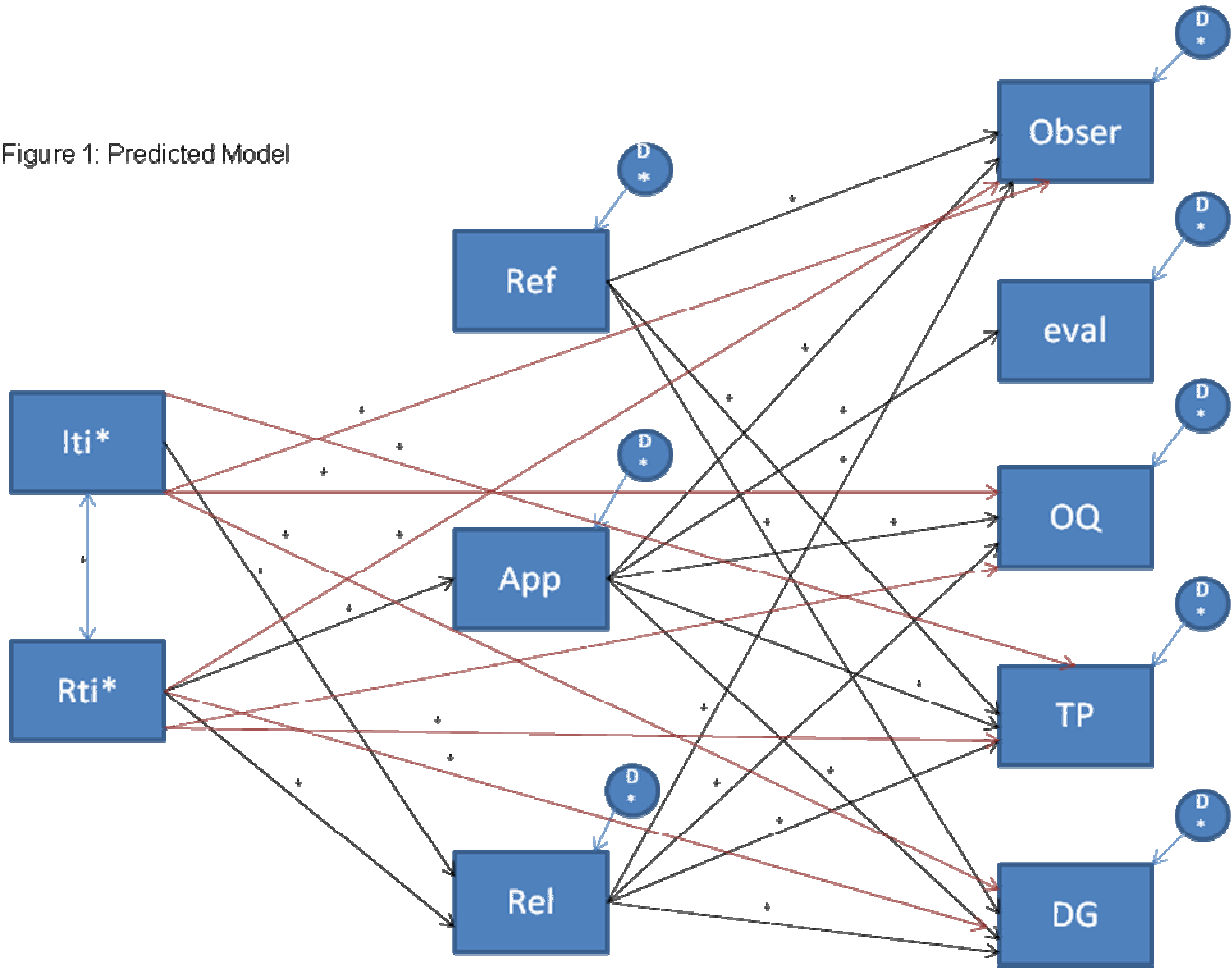
The path analysis was carried out in a step-by-step manner. Initially I determined whether the model was identified and thus had enough degrees of freedom to be successfully estimated. Once the structural aspect was identified, I proceeded with testing the model. Kline (2005a) discussed two approaches to comparing hierarchical models. “Two path models are hierarchical – also known as nested – if one is a subset of the other. For example, if a path is dropped from model A to form model B, the two models are hierarchically related (i.e., model B is nested under model A)” (Kline, 2005a, p. 145). The models I compared were hierarchical models, thus either model trimming or building would have been appropriate methods for model testing. Model trimming begins with a just-identified model that includes all of the possible paths (relations between variables). The model is then simplified by eliminating the paths that are insignificant or do not make theoretical sense. Model building, on the other hand, begins as an overidentified model in which the majority of paths are fixed to zero. The researcher then adds paths to the model by specifying particular paths as free parameters.

As a model is trimmed, its overall fit to the data typically becomes worse (e.g., χ^2_M increases). Likewise, model fit generally improves as paths are added (e.g., χ^2_M decreases). However, the goal of both trimming and building is to find a parsimonious model that still fits the data reasonably well. (Kline, 2005a, pp. 145-146)

Models can be trimmed or built based on either empirical or theoretical standards (Kline, 2005a). Empirical model testing adds or eliminates parameters based solely on statistical significance. Kline (2005a) does not recommend relying strictly on empirical testing because non-significant paths may in fact be relevant aspects of the overall model. Likewise, one runs the risk of capitalizing on chance (i.e. a path can be significant due to chance variation rather than an actual effect). Consequently, Kline (2005a) recommends model testing based on theoretical

standards. Theoretical respecification is based on specific a priori hypotheses that are laid out by the researcher. In terms of the current study, for example, hypothesis one stated that newcomer referent uncertainty predicts the use of observation, disguising conversations, and third parties as information seeking tactics. Thus, I allowed the direct paths from referent uncertainty to observation, disguising conversations, and third parties to be freely estimated in the model because I would expect to find a significant relationship between the two variables. The following figure (Figure 1) represents the predicted model, which provides a visual representation of the predicted relationships between all variables. The constructs are abbreviated as follows: Iti refers to *initiated task interdependence*; Rti refers to *received task interdependence*; Ref refers to *newcomer referent uncertainty*; App refers to *newcomer appraisal uncertainty*; Rel refers to *newcomer relational uncertainty*; Obser refers to *observation*; Eval refers to *evaluation of work*; OQ refers to *overt questions*; TP refers to *third parties*; and DG refers to *disguising conversations*. Black lines depict direct paths from task interdependence to uncertainty, as well as direct paths from uncertainty to information seeking. Crimson lines depict direct paths from task interdependence to information seeking.

Figure 1: Predicted Model



The variables I am interested in are veteran employee uncertainty and information seeking. At the most basic level, uncertainty should predict information seeking. This assumption is based on long standing theory regarding organizational socialization research. However, as discussed in the literature review, task interdependence likely serves as a predictor variable as well. Despite the hypotheses, I began with a completely saturated model that included all possible paths and had zero degrees of freedom. Although the saturated model provides a perfect fit because it is just identified, it is useful to begin with the saturated model because the trimmed models are nested, which allows for a comparison between the different versions (Kline, 2005a). The saturated model was estimated using robust maximum likelihood in Mplus.

The model was then trimmed using the model trimming procedure to eliminate non-significant paths. The result of model trimming was a more parsimonious model that explains the direct and indirect relationships between initiated and received task interdependence, uncertainty, and information seeking. The following section describes the results of the EFA and CFA as well as the hypothesis testing that was conducted with path analysis.

Results

When data collection was complete, the first step was to assess the descriptive characteristics of the data. Estimation procedures generally assume normality of the data, so it is important to remove non-normal items before moving forward. According to Kline's (2005) recommendation, items with extreme skew (> 2.99) and kurtosis (> 9.99) should be eliminated before moving on to conduct an exploratory factor analysis. All of the items were within normal levels, although some items were minimally skewed (e.g. values close to 2.0). Consequently, all further analyses were tested using the robust maximum likelihood estimation procedure included in the Mplus statistical software package.

Exploratory Factor Analysis

The purpose of conducting EFA was to ensure that the factor structure from study one was recreated on a new data set, which lends support to the validity of the measure. Consequently, EFA was conducted on the uncertainty, information seeking, and task interdependence subscales. The interpretation criteria remained the same as it was for study one: items needed to show strong primary loadings as well as low cross loadings. Typically a primary loading of .60 or higher is considered ideal. Additionally, the global fit of the model was assessed. The initial analysis of the uncertainty scale showed only a moderate global fit of the three factor model that was previously established through pilot work and study one. On

examination of the individual factor loadings, it became apparent that three of the five items representing *newcomer relational uncertainty* were not functioning well. Those three items had low primary loadings (averaging near .30) and relatively high cross loadings on other factors (also nearing .30), which indicated they were not good measures of the relational uncertainty construct. Two of the poorly performing items were intended to represent the *transformation* aspect of relational uncertainty. The transformation aspect of uncertainty, however, continues to remain elusive, as there was no support for any of the items in study two.

The other two relational items were ultimately kept so that newcomer relational uncertainty could be included in the CFA and PA analyses, however one item still had a relatively low primary loading of .40. The remaining item loaded strongly at .90. Although it was not ideal to keep only two items to assess the construct, one must often make judgment calls when working with human subjects. The remaining two constructs, *newcomer appraisal uncertainty* and *newcomer referent uncertainty*, each contained four strong indicators that were retained for further analyses. Kline (2005b) indicated that four items per construct is typically considered ideal. Thus, one item was dropped from *appraisal uncertainty* and one item was dropped from *referent uncertainty* because they were slightly weaker than the other indicators (with lower primary loadings) and were not needed to conduct CFA. The data were then submitted to EFA again to examine the model fit and parameter estimates with the exclusion of the items described above.

The empirically-derived three factor model provided an excellent fit, $\chi^2(18, N = 153) = 26.67, p = .09, CFI = .99, RMSEA = .056, SRMR = .021$. In this case, a non-significant chi-square is desirable because it indicates that there is not a significant difference between the predicted model and the actual data. The root mean square error or approximation and

standardized root mean residual were both close to zero, further indicating an excellent global fit of the three factor model. Additionally, the items loaded cleanly onto their respective factors. See table eight for the factor loadings and table 10 for the factor correlations.

TABLE 9
Uncertainty
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>	<u>F3</u>
Newcomer Relational Uncertainty			
I wondered how s/he would “fit in” with others in the organization.	.90	.00	-.02
I was curious about his/her ability to work well with others.	.45	.24	.11
Newcomer Referent Uncertainty			
I wondered what position s/he was going to fill.	.10	.08	.76
I was unsure what jobs s/he was supposed to do.	.08	.02	.84
I was uncertain about the tasks s/he would be doing	-.06	.04	.81
I was unsure which tasks were assigned to him/her.	.06	-.03	.76
Newcomer Appraisal Uncertainty			
I was unsure whether s/he was suited to the job.	.23	.69	.11
I questioned his/her ability to do the job.	-.09	.92	.03
I was uncertain about his/her level of competence.	-.08	.66	-.18
I was confident in his/her skills. (reverse coded)	-.09	.77	.02

TABLE 10
Uncertainty
Exploratory Factor Analysis – Factor Correlations

<u>Factor</u>	<u>1</u>	<u>2</u>	<u>3</u>
1	1.00		
2	0.43	1.00	
3	0.26	0.35	1.00

(1) = Newcomer Relational Uncertainty, (2) = Newcomer Appraisal Uncertainty,
(3) = Newcomer Referent Uncertainty

The initial EFA on the information seeking subscale showed support for a five factor model. Although observation and surveillance each contained their own set of items, it was apparent that they were loading together as one construct, as the items from both loaded onto the same factor. This result is not surprising as both observation and surveillance are “watching” behaviors in that they involve assigning meaning to things one sees around the workplace. Despite the support for a five factor model of information seeking, the global fit of the model

was relatively poor. However, the scale had been designed to allow the exclusion of several items that did not function as strong indicators of the construct. Therefore, the parameter estimates were examined in order to determine which items could be dropped. A total of seven items were dropped from further analyses because they had low primary loadings or cross loaded on multiple factors, which left 20 items that represented five different aspects of information seeking (four items per subconstruct). The second EFA with seven items excluded showed a strong global fit, $\chi^2(100, N = 153) = 143.34, p = .003, CFI = .97, RMSEA = .053, SRMR = .032$.

Of the 20 information seeking items that were used, only one loaded on a factor that it was not written to correspond to. The following *surveillance* item loaded strongly with the *disguising conversations* factor: I walked around the new employee’s work space just to see “what was up.” In retrospect, the wording of this item is similar to the items that represent disguising conversations (e.g. “Through my behavior, I hinted...” and “I used phrases like “uh-huh” in conversation...”). Each of these examples suggests a form of implicit or hidden interaction with the new employee. Therefore, the *surveillance* item listed above was kept as part of the *disguising conversations* factor for all further analyses.

TABLE 11
Information Seeking
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>	<u>F3</u>	<u>F4</u>	<u>F5</u>
Observation					
I looked for "answers" about the newcomer in his/her behavior.	.65	-.14	-.03	.01	-.01
I went about my tasks, but if any new information came my way, I paid attention to it.	.68	.06	.01	.00	.01
I found out information about the new employee by keeping my eyes and ears open to what was going on around me.	.41	-.11	.17	.26	.27
I watched his/her behavior around the workplace.	.47	.08	.15	.07	.06
Evaluation of Work					
I checked his/her work to validate that it was being done correctly.	.07	-.91	-.02	-.06	-.03
I estimated whether s/he was working at a reasonable pace.	.14	-.63	.10	.10	.03
I checked his/her work for mistakes.	-.07	-.83	-.05	.12	.03

I checked to see what s/he was accomplishing.	.03	-.76	.10	.01	.12
Overt Questions					
I made a point of asking him/her how things were going.	.03	.04	.84	.01	-.11
I asked him/her questions.	.21	-.10	.41	-.02	.04
I encouraged him/her to ask questions.	-.06	-.13	.56	-.12	.18
I asked about his/her past work experience.	-.08	-.05	.50	.06	.15
Third Parties					
I talked informally with other people about him/her.	.11	-.07	-.08	.50	-.05
I checked with other people to see if they shared my opinions about the new employee.	.10	-.10	-.08	.79	-.04
I talked to other employees to find out how the new person was catching on.	-.03	-.23	.24	.50	.11
I "compared notes" with other employees to see how they felt about the new person.	-.06	-.07	.04	.77	.06
Disguising Conversations					
I used phrases like "uh-huh" during conversation with the new employee to keep him/her talking about the information I wanted.	.31	.14	-.09	.11	.43
I shared experiences that I'd had on the job in the hope that s/he would share similar information with me.	.13	-.09	.07	-.01	.54
I walked around the new employee's work space just to see "what was up."	-.01	-.14	-.04	-.04	.76
Through my behavior, I hinted to the new employee that I wanted more information about him/her.	-.06	.03	-.02	.24	.50

TABLE 12
Information Seeking
Exploratory Factor Analysis – Factor Correlations

<u>Factor</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1	1.00				
2	-0.45	1.00			
3	0.17	-0.23	1.00		
4	0.43	-0.37	0.16	1.00	
5	0.33	-0.50	0.22	0.42	1.00

(1) = Observation, (2) = Evaluation of Work, (3) = Overt Questions,
(4) = Disguising Conversations, (5) = Third Parties

The EFA for task interdependence showed a clear representation of the two factor model that was previously established in study one. The items loaded cleanly onto their respective factors (i.e. initiated and received task interdependence) with high primary loadings and cross loadings that were close to zero. The overall model fit relatively well, with the exception of a

slightly high RMSEA value, $\chi^2(13, N = 153) = 50.70, p = .00, CFI = .94, RMSEA = .138,$
 SRMR = .033.

TABLE 13
Task Interdependence
Exploratory Factor Analysis – Factor Loadings

<u>Dimension</u>	<u>F1</u>	<u>F2</u>
Initiated Task Interdependence		
To what extent does the new employee depend on you for information and advice?	.85	-.05
To what extent does the new employee depend on you for materials, means, and other things they need?	.78	.01
To what extent does the new employee depend on your presence, help, and support?	.85	.01
To what extent does the new employee depend on you for doing his/her work well?	.68	.09
Received Task Interdependence		
To what extent do you depend on the new employee for information and advice?	-.03	.81
To what extent do you depend on the new employee for materials, means, and other things they need?	-.11	.83
To what extent do you depend on the presence, help, and support of the new employee?	.06	.79
To what extent do you depend on the new employee for doing your work well?	.11	.78

TABLE 14
Task Interdependence
Exploratory Factor Analysis – Factor Correlations

<u>Factor</u>	<u>1</u>	<u>2</u>
1	1.00	
2	0.24	1.00

(1) = Initiated Task Interdependence, (2) = Received Task Interdependence

The EFA results for uncertainty and task interdependence corroborated the results from study one, thus adding validity to the three factor model of uncertainty and the two factor model of task interdependence. The EFA results for the information seeking subscale indicated that the revised version of the instrument functioned much better than the version that was used in study one. Specifically, the items loaded to created factors that corresponded with the constructs they

were written to represent (with the one exception of the *surveillance* item that became part of the *disguising conversations* construct). Each of the factors in the five factor model of information seeking was clearly represented by the primary loadings and absence of cross loadings of the items. The results of the EFA were used to specify the CFA model and continue with further analyses.

Confirmatory Factor Analysis

The purpose of confirmatory factor analysis was to test the factor dimensions that were established in the EFA. The CFA models were specified based on the EFA results. Initially, each scale (i.e. uncertainty, information seeking, and task interdependence) was submitted individually to CFA. Each of the three models provided acceptable fit to the data: *uncertainty*, $\chi^2(31, N = 153) = 48.11, p < .05, CFI = .97, RMSEA = .060, SRMR = .051$; *information seeking*, $\chi^2(158, N = 153) = 237.99, p < .00, CFI = .92, RMSEA = .058, SRMR = .073$; and *task interdependence*, $\chi^2(19, N = 153) = 58.16, p < .00, CFI = .92, RMSEA = .116, SRMR = .053$. Although non-significant chi-square values and slightly lower RMSEA values would be ideal, each of the three models supported simple structure (i.e. there were no cross-loadings indicated in the model), which can be difficult to achieve in applied research (Kline, 2005a).

After each model was tested individually, all three scales were submitted to CFA simultaneously. This approach was necessary to make sure the entire measurement model withheld its integrity prior to hypothesis testing. The overall complexity of the model required that some parameters be cut in order to achieve identification of the model with the inclusion of all ten constructs (three uncertainty, five information seeking, and two task interdependence) being tested simultaneously. Therefore, the strongest two items for each factor were chosen to represent the factors in the CFA. The simplified model included 20 independent manifest

variables and 10 latent factors. Additionally, the strongest items (those with the highest primary loading and lowest cross loading) were chosen to set the metric of the factor.

Robust maximum likelihood estimation procedure was used to empirically test the hypothesized model. The standardized loadings of the items onto their corresponding factors were generally high, indicating support for the empirically derived model. The model provided an excellent fit to the data, $\chi^2(125, N = 153) = 130.60, p < .35, CFI = .99, RMSEA = .017, SRMR = .037$. The non-significant chi-square indicates there was not a significant difference between the hypothesized model and the actual data. Moreover, the CFI, RMSEA, and SRMR all indicate a good global fit. The model did not require any modification to achieve a good fit to the data.

Table 15
Confirmatory Factor Analysis - Factor Loadings

<u>Dimension</u>	<u>Loading</u>
Newcomer Relational Uncertainty	
I wondered how s/he would "fit in" with others in the organization.	.64
I was curious about his/her ability to work well with others.	.82
Newcomer Appraisal Uncertainty	
I questioned his/her ability to do the job.	.84
I was uncertain about his/her level of competence.	.85
Newcomer Referent Uncertainty	
I was uncertain about the tasks s/he would be doing.	.97
I was unsure which tasks were assigned to him/her.	.71
Observation	
I looked for "answers" about the new employee in his/her behavior.	.77
I went about my tasks, but if any new information about the new employee came my way, I paid attention to it.	.70
Evaluation of Work	
I checked his/her work to validate that it was being done correctly.	.90
I checked his/her work for mistakes.	.86
Overt Questions	
I made a point of asking him/her how things were going.	.61
I encouraged him/her to ask questions.	.95
Third Parties	
I checked with other people to see if they shared my opinions about the new employee.	.90
I "compared notes" with other employees to see how they felt about the new person.	.68

Disguising Conversations

I shared experiences that I'd had on the job in the hope that s/he would share similar information with me.	.70
I walked around the new employee's work space just to see "what was up."	.75

Initiated Task Interdependence

To what extent does the new employee depend on you for information and advice?	.80
To what extent does the new employee depend on your presence, help, and support?	.88

Received Task Interdependence

To what extent do you depend on the new employee for information and advice?	.89
To what extent do you depend on the new employee for materials, means, and other things you need?	.83

Table 16
Confirmatory Factor Analysis - Factor Loadings

Factor	1	2	3	4	5	6	7	8	9	10
1	1.00									
2	0.65	1.00								
3	0.27	0.35	1.00							
4	0.26	0.28	0.06	1.00						
5	0.13	0.23	-0.10	0.56	1.00					
6	-0.03	-0.28	-0.13	0.12	0.30	1.00				
7	0.49	0.38	0.16	0.49	0.43	0.08	1.00			
8	0.13	0.06	0.09	0.43	0.63	0.33	0.44	1.00		
9	0.16	0.32	0.22	0.32	0.42	0.13	0.17	0.28	1.00	
10	-0.09	-0.02	0.14	0.19	0.28	0.16	0.03	0.24	0.15	1.00

(1) = Newcomer Relational Uncertainty, (2) = Newcomer Appraisal Uncertainty, (3) = Newcomer Referent Uncertainty, (4) = Observation, (5) = Evaluation of Work, (6) = Overt Questions, (7) = Third Parties, (8) = Disguising Conversations, (9) = Initiated Task Interdependence, (10) = Received Task Interdependence

Reliability Analysis

Cronbach's alpha was used to examine the internal consistency of each subscale. Two of the three subscales within the final set of uncertainty items showed high levels of internal consistency (Newcomer Referent Uncertainty $\alpha = .87$, Newcomer Appraisal Uncertainty $\alpha = .85$). These reliability coefficients match those that were estimated in study one, which indicates that the scale maintains reliability on different data sets. As previously discussed, only two items from the Newcomer Relational Uncertainty subscale were deemed appropriate indicators of the construct. The reliability for the two remaining items nearly met the threshold of $.70$ ($\alpha = .69$), which indicates acceptable reliability (Vogt, 2005).

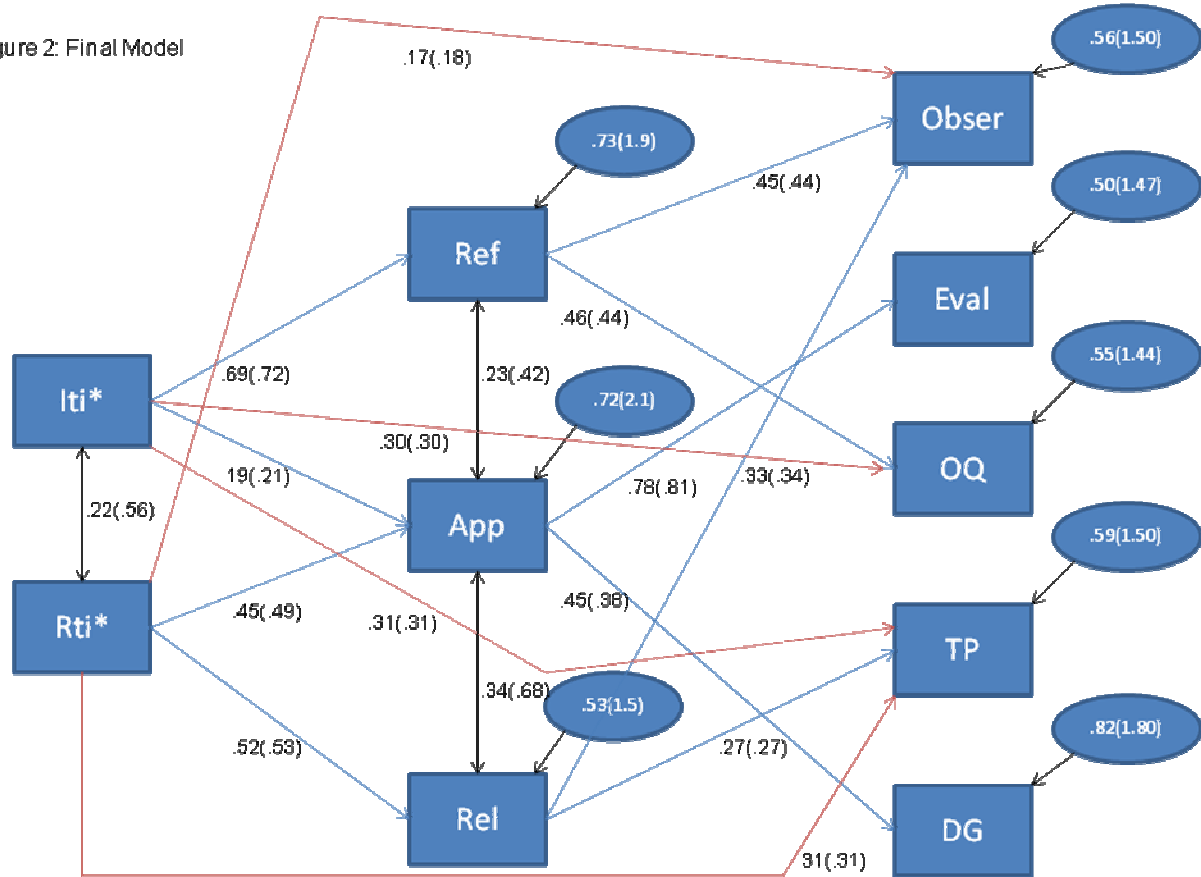
The five dimensions of information seeking also show acceptable reliability (Observation $\alpha = .75$, Evaluation of Work $\alpha = .91$, Overt Questions $\alpha = .69$, Third Parties $\alpha = .78$, and Disguising Conversations $\alpha = .71$). Reliability for the overt questions dimension was slightly low. However, reliability on all aspects of information seeking improved in comparison to the results of study one.

The two task interdependence subscales also showed good reliability (Initiated Task Interdependence $\alpha = .87$ and Received Task Interdependence $\alpha = .86$). These reliability coefficients match those that were estimated in study one, indicating that the interdependence scale also maintains reliability on different data sets. Overall, these results suggest a reliable set of items for measuring three dimensions of veteran employee uncertainty about new hires, five types of information seeking, and two dimensions of task interdependence.

Path Analysis

The purpose of the step-by-step revisions throughout the pilot study, study one, and study two was to establish the psychometric value of the instruments. Based on the findings of the EFA, CFA, and reliability analysis, it was concluded that the instruments show good reliability and validity. The next step, therefore, was to test the hypothesized path model. Based on the MLR estimation procedure in Mplus, the trimmed model provided an excellent global fit to the data, $(16, N = 153) = 15.99, p < .45, CFI = 1.00, RMSEA = .00, SRMR = .04$. The final model is presented below in figure 2. The disturbances (depicted as ovals) "represent all causes of an endogenous variable that are omitted from the structural model" (Kline, 2005a, p. 69). For example, a standardized disturbance value of .50 indicates that 50% of the variance in the observed endogenous variable is caused by something that is absent from the current model.

Figure 2: Final Model



$\chi^2(16, N = 153) = 15.99, p < .45, CFI = 1.00, RMSEA = .00, SRMR = .04$
 Effects are presented in standardized and (unstandardized) coefficients.

Additionally, approximately half of the hypotheses (11 of 23) were supported by their specific regression coefficients and significance values. An overview of the hypotheses is presented in the following paragraphs. See table 17 for the complete list of coefficients, standard errors, and significance values of all hypothesized paths.

Hypotheses one through 12 predicted relationships between the different types of uncertainty and specific information seeking tactics. Newcomer referent uncertainty was a moderate predictor of observation (H1, $\beta = .45, p < .001$). Newcomer appraisal uncertainty showed two significant relationships, as it was a moderate predictor of disguising conversations (H5, $\beta = .45, p < .001$), and a strong predictor of evaluation of work (H7, $\beta = .78, p < .001$). Newcomer relational uncertainty also showed two significant relationships as a moderate

predictor of observation (H9, $\beta = .33, p < .001$), and third parties (H11, $\beta = .27, p < .01$).

Consequently, hypotheses one, five, seven, nine, and eleven were supported by the data.

Hypothesis two stated that Newcomer referent uncertainty would predict disguising conversations. Although this relationship was significant, it was negative (and relatively small at $-.15$), which does not make theoretical sense. Thus, hypothesis two was unsupported by the data.

The data showed no significant relationships between newcomer referent uncertainty and third parties (H3), newcomer appraisal uncertainty and observation (H4), third parties (H6), or overt questions (H8). Neither did the data show any significant relationships between newcomer relational uncertainty and disguising conversations (H10) or overt questions (H12).

Table 17
Hypothesis Testing

<i>Hypothesis</i>	<i>Standardized Coefficient</i>	<i>S.E.</i>
(H1) Referent Uncertainty → Observation	.45***	.060
(H2) Referent Uncertainty → Disguising Conversations	-.15*	.073
(H3) Referent Uncertainty → Third Parties	-.15	.103
(H4) Appraisal Uncertainty → Observation	.08	.091
(H5) Appraisal Uncertainty → Disguising Conversations	.45***	.078
(H6) Appraisal Uncertainty → Third Parties	.19	.089
(H7) Appraisal Uncertainty → Evaluation of Work	.78***	.043
(H8) Appraisal Uncertainty → Overt Questions	-.01	.067
(H9) Relational Uncertainty → Observation	.33***	.072
(H10) Relational Uncertainty → Disguising Conversations	-.10	.095
(H11) Relational Uncertainty → Third Parties	.27**	.081
(H12) Relational Uncertainty → Overt Questions	.11	.078
(H13) Received Task Interdependence → Appraisal Uncertainty	.45***	.073
(H14) Received Task Interdependence → Relational Uncertainty	.52***	.071
(H15) Initiated Task Interdependence → Relational Uncertainty	.01	.070
(H16) Received Task Interdependence → Observation	.17*	.171
(H17) Received Task Interdependence → Overt Questions	.04	.067
(H18) Received Task Interdependence → Third Parties	.31**	.099
(H19) Received Task Interdependence → Disguising Conversations	.07	.090
(H20) Initiated Task Interdependence → Observation	.08	.081
(H21) Initiated Task Interdependence → Overt Questions	.27*	.110
(H22) Initiated Task Interdependence → Third Parties	.31***	.084
(H23) Initiated Task Interdependence → Disguising Conversations	.07	.090

* $p < .05$
** $p < .01$
*** $p < .001$

Hypotheses 13 through 15 predicted relationships between task interdependence and uncertainty. Received task interdependence was a moderate predictor of both newcomer appraisal uncertainty (H13, $\beta = .45, p < .001$) and newcomer relational uncertainty (H9, $\beta = .52, p < .001$). Therefore, hypotheses 13 and 14 were supported by the data. Hypothesis 15 was not supported, as initiated task interdependence showed no relationship to newcomer relational uncertainty.

Hypotheses 16 through 23 predicted relationships between the two types of task interdependence and specific information seeking tactics. Received task interdependence showed a relatively small effect on observation (H16, $\beta = .17, p < .01$) and a moderate effect on third parties (H18, $\beta = .31, p < .01$). Initiated task interdependence was a moderate predictor of both overt questions (H21, $\beta = .27, p < .05$) and third parties (H22, $\beta = .33, p < .001$). Thus, hypotheses 16, 18, 21 and 22 were supported. However, received task interdependence did not show a relationship with overt questions or disguising conversations. Nor did initiated task interdependence show a relationship with observation or disguising conversations. Thus, hypotheses 17, 19, 20 and 23 were not supported.

The path model suggested three significant relationships that were not hypothesized a priori. Initiated task interdependence was a strong predictor of newcomer referent uncertainty ($\beta = .69, p < .001$) and a weak predictor of newcomer appraisal uncertainty ($\beta = .19, p < .01$). Newcomer referent uncertainty was a moderate predictor of overt questions ($\beta = .46, p < .001$).

Research question four asked how uncertainty would function as a mediating variable between task interdependence and information seeking. The model did reveal four indirect effects from task interdependence through uncertainty to information seeking. Specifically, received task interdependence showed an indirect relationship to both observation ($\beta = .17, p <$

.001) and third parties ($\beta = .14, p < .001$) through newcomer relational uncertainty. Received task interdependence also showed an indirect relationship to disguising conversations through newcomer appraisal uncertainty ($\beta = .20, p < .001$). Finally, initiated task interdependence showed an indirect relationship with overt questions through newcomer referent uncertainty ($\beta = .31, p < .001$). Although these effects are significant, they do not indicate that uncertainty acts as a mediating variable between task interdependence and information seeking in the current model because the direct effects from task interdependence to information seeking are also significant. Thus, the indirect effect is simply obtained by multiplying the coefficients for the two direct effects in each path. If the direct paths were insignificant and only the indirect effects were significant, there would be evidence of a mediation effect. However, that was not the case in this model. Table 18 includes the complete list of paths, coefficients, and standard errors for the additional direct effects as well as the indirect effects in the model.

Table 18
Additional Significant Direct and Indirect Effects

<i>Path</i>	<i>Std. Coefficient</i>	<i>S.E.</i>
Initiated Task Interdependence → Referent Uncertainty	.69***	.058
Initiated Task Interdependence → Appraisal Uncertainty	.19**	.070
Referent Uncertainty → Overt Questions	.46***	.110
Received Task Interdependence → Relational Uncertainty → Observation	.17***	.048
Initiated Task Interdependence → Referent Uncertainty → Overt Question	.31***	.075
Received Task Interdependence → Relational Uncertainty → Third Party	.14**	.049
Received Task Interdependence → Appraisal Uncertainty → Disg Conv	.20***	.050

* $p < .05$
 ** $p < .01$
 *** $p < .001$

To summarize, the path model indicated support for approximately half of the hypotheses that were tested. An additional three significant direct relationships were identified that had not been hypothesized. Four indirect effects were also identified, but there was no support for a

mediation effect within the model. The model as a whole provided an excellent global fit, suggesting that the hypothesized model is a close representation of reality with this data set.

Discussion

The veteran employee perspective on organizational encounter was established from a substantial body of literature regarding newcomer's experiences with joining a new organization. Organizational entry represents a time of surprise (Louis, 1980) and uncertainty for new employees as they attempt to learn the ropes and become established members of a new organization (Jablin, 2001; Miller & Jablin, 1991; Morrison, 1993). Previous research (Teboul, 1994) indicated that new employees experience uncertainty with regard to what their job responsibilities are (referent), their ability to do the job (appraisal), and how to interact with others in the organization (relational). Organizational socialization research is based in Uncertainty Reduction Theory (Berger & Calabrese, 1975). The primary tenet of the theory is that strangers experience uncertainty upon meeting each other. In the case of organizational entry, a new employee meets multiple "strangers" when he or she joins an organization, which creates uncertainty. Axiom three of the theory states that, "High levels of uncertainty cause increases in information seeking behavior. As uncertainty levels decline, information seeking decreases" (Berger & Calabrese, 2007, p. 329). Uncertainty created by organizational entry, therefore, acts as a catalyst for information seeking behaviors, as new employees attempt to reduce or manage the uncertainty about the organization, its members, and their own role (Kramer, 1991; 2004; Miller & Jablin, 1991; Morrison, 1993; Morrison, 2002).

Despite the well established body of literature regarding new employee's organizational socialization processes, veteran employees have received very little attention to date. However, researchers (i.e. Jablin, Kramer, Miller) have long argued that new employees act as a source of

uncertainty for veteran members of organizations. When a new hire joins an organization, psychological contracts are formed between the newcomer and the organization itself (Jablin, 2001). These contracts represent the expectations for behavior and communication practices within the organization. When people's expectations are not fulfilled, moderate levels of emotional arousal may result. Jablin (2001) suggested that the terms established in the contracts of newcomers may affect veterans as well because the creation of new contracts may alter those that already exist for veteran employees. Events that are different from what is normally expected represent an interruption of ongoing activity and may trigger employees to engage in sense-making activities (Jablin & Kramer, 1998). As Kramer (2004) stated,

Not only as newcomers do we face uncertainty; we face uncertainty throughout our organizational lives. We change positions, receive promotions, gain and lose coworkers and supervisors. Such changes produce uncertainty, as we must adapt to new people and situations. (p. 3)

When examining organizational entry from the perspective of veteran employees, the *newcomer* is the stranger in the situation. He or she raises a plentitude of questions for veteran members of the organization. Gallagher and Sias (2009) found that veteran employees experienced five types of uncertainty regarding new hires. Veteran employees in the study also used nine different information seeking tactics to reduce the uncertainty they experienced. Their original interview study laid the foundation and began the line of research that was continued in this dissertation project. The overall goal of the project was to fill a gap in organizational socialization literature by examining veteran employee perspectives of uncertainty and information seeking with regard to new employees. Specifically, a quantitative scale development project was undertaken with the goal to develop measures of veteran employee uncertainty and information seeking and then

use those measure to test the relationships between these variables. Study two contributed to the overall project in two ways.

The first goal of study two, which was a necessary step in achieving the primary goal, was to further establish the reliability and validity of the veteran employee uncertainty and information seeking instruments because without good psychometric properties, the instruments would be useless for hypothesis testing. The primary goal was to test the relationships between task interdependence, veteran employee uncertainty about new hires, and information seeking tactics. Each aspect of the study will be discussed in turn in the following sections.

Psychometric Qualities of the Instruments

Exploratory and confirmatory factor analysis were used to examine the psychometric properties of the veteran employee uncertainty and information seeking instruments. Both scales were created based on Gallagher and Sias's (2009) interview study with veteran employees and underwent substantial revision prior to data collection for study two. EFA reconfirmed the three factor model of uncertainty that was established in both the pilot study and study one. Newcomer appraisal and newcomer referent uncertainty both held up well in the EFA and produced results nearly identical to those of study two. The items loaded strongly onto the factors they were designed to measure and the overall model fit was very good. Scale reliability was also good at .85 (appraisal) and .87 (referent). The items representing newcomer relational uncertainty, however, did not perform as well as expected. Only two of the items designed to represent the construct proved to be adequate predictors; the remaining items were originally written to represent aspects of *transformation* uncertainty, which remains elusive. Although transformation uncertainty may be an avenue for further study, it has yet to withstand quantitative testing. Thus, the construct was measured using only two items. Although it is not ideal to use only two

manifest indicators, the scale reliability for the two items was high enough (.69) to be considered adequate. The newcomer relational uncertainty dimension of veteran employee uncertainty needs to be reexamined before future research is conducted. Revision of the items might produce a clearer representation of the construct.

The information seeking scale performed much better than it did in study one. The revisions that were made prior to data collection included substantially shortening the instrument and streamlining the number of constructs. Specifically, observation and surveillance became one construct (entitled observation) and the four facets of asking questions were merged to create the overt questions construct. EFA indicated a good fit of the five factor model, with the exclusion of a handful of items. The only item that loaded on a factor that it was not written to represent was one of the surveillance items. However, on inspection of the item wording, it matches the disguising conversations factor better than it does the surveillance factor. Thus, this item will be slightly revised for future research, but will be maintained as a representative of disguising conversations.

The task interdependence scale performed well once again. The EFA clearly showed a two factor solution that represented initiated and received task interdependence. The global fit of the model was adequate and the items loaded cleanly and strongly with their corresponding factors. The original eight items were retained for further analyses.

The EFA results were used to specify the CFA models. First, a CFA was conducted on each scale individually in order to test the relationships between the items and factors with the inclusion of all items that were retained after the EFA. All three scales showed strong CFA results, which confirmed the factor structure that was established in the EFA. The next step was to test the three scales in conjunction with one another to confirm that the model would hold

together. Although the model itself was overidentified, the number of parameters that needed to be estimated exceeded the total sample size of the study. Consequently, the model was unstable. As a solution to this problem, the strongest two indicators of each factor were chosen to represent the factor in the final CFA. Because the items that were chosen all had very high factors loadings (e.g. .80 or higher), they served as good indicators of the latent constructs and the model was a good fit to the data, as it showed strong fit indices, specific parameter estimates, and very little localized strain.

Based on the consistency of item loadings, model fit, and reliability on a different data set, the instruments appear to have good construct validity. Construct validity refers to "whether the scores measure the hypothetical construct the researcher believes they do" (Kline, 2005a, p. 60) and typically cannot be assessed in a single study. Developing good construct validity speaks to the importance of establishing the instruments through multiple rounds of revision and testing. "A facet of construct validity is **content validity**, which concerns whether test items are representative of the domain they are supposed to measure. Expert opinion is the basis for establishing whether item content is representative" (Kline, 2005a, p. 60, bold in original). The instruments have performed similarly in EFA on two different data sets. They also withstood CFA, which can be difficult to achieve. Brown (2005) stated,

A common sequence in scale development and construct validation is to conduct CFA as the next step after latent structure has been explored using EFA. However, the researcher frequently encounters a poor-fitting CFA solution because of the potential sources of misfit that are not present in EFA. (p. 193)

Although conducting an EFA in a CFA format is a nice middle ground, the E/CFA was not necessary in this study. The modification indices produced by Mplus for the EFA provided

information regarding parameters that would improve model fit if added during the CFA. There were parameters that would have improved the overall fit if they had been added to the model, but it did not make theoretical sense to do so. Thus, the model was not modified.

The items for all facets of uncertainty and information seeking were originally written according to the words of subject matter experts (i.e. the veteran employees in Gallagher and Sias's (2009) study). Kline (2005b) defined SMEs as "laypersons who have specific knowledge about the construct you are interested in assessing" and further states that "interviews with these SMEs are invaluable to understand as clearly as possible what it is you want to measure" (p. 31). Writing the survey items based on comments in the interview transcripts helped to establish construct validity early in the scale development process. The addition of multiple rounds of testing and revision further strengthened the validity of the instruments and helped to ensure good fitting CFA solutions in the current study. Thus, I can conclude that the items measure the hypothetical constructs they were designed to represent and have good content validity. The fact that simple structure was maintained and modification was not necessary to establish a good CFA model fit indicates that each subconstruct is well defined. There is convergent validity among the factors because each item only measures one construct. Moreover, the scales show discriminant validity because the items are not measuring what that are not supposed to measure (i.e. simple structure was maintained with no cross loadings in the CFA model). The one exception is newcomer relational uncertainty; however two of the items did perform well and were satisfactory indicators of the construct. With further revision, newcomer relational uncertainty will be as strong as the other constructs. In totality, the instruments have shown themselves to be reliable and valid across multiple studies. Therefore, it was appropriate to use them to test the hypotheses.

Hypothesis Testing

Returning once again to Uncertainty Reduction Theory, the basic assumption of this project was that a) veteran employees experience uncertainty when a new employee joins the organization and b) uncertainty acts as a catalyst for information seeking behavior. Thus, one would expect a causal relationship between uncertainty and information seeking. Other variables likely influence uncertainty and information seeking, however. Task interdependence, for example, contributes to the amount of information that is shared between employees (Taggar & Haines, 2006; Wageman, 1995). I also theorized that task interdependence contributes to one's experience of uncertainty. When a veteran employee must work closely with a newcomer to complete tasks, he or she is likely to have more uncertainty about the newcomer's past work experience that will contribute to the current position, ability and motivation level, as well as communication style. Thus, task interdependence was added to the model as a predictor variable. Task interdependence, uncertainty, and information seeking are all multifaceted constructs, which required that hypotheses be put forth to explain the specific causal paths between each of the subconstructs within the model. The following sections will discuss uncertainty and task interdependence as predictor variables, respectively.

Uncertainty. The results indicated that each of the three types of uncertainty had direct effects on some of the information seeking tactics. Newcomer referent uncertainty, which refers to a veteran's uncertainty regarding the job tasks the newcomer is responsible for (Gallagher & Sias, 2009), had an effect on observation and overt questions. It makes sense that veteran employees would observe the newcomer in action in an attempt to determine what his or her specific job responsibilities were. Although the relationship between newcomer referent uncertainty and overt questions was not predicted a priori, this path makes sense as well. If a

veteran employee was uncertain about specific job responsibilities, the quickest and easiest way to obtain that information would be to simply ask the newcomer. The hypotheses predicted relationships between newcomer referent uncertainty and third parties and disguising conversations as well, however, those predictions were not supported by the data.

Newcomer appraisal uncertainty, which refers to uncertainty about the new employee's ability and motivation level (Gallagher & Sias, 2009), was a significant predictor of disguising conversations and evaluation of work. Engaging in covert conversations with the newcomer to assess his or her motivation and/or ability level is a way for veteran employees to gather information in a non-obvious manner. This choice of tactic is probably preferred because it would seem rather rude to directly ask the newcomer for this type of information. Therefore, veteran employees may use this tactic out of respect and politeness for the newcomer so as not to make him or her uncomfortable. Veteran employees likely remember what it was like to be the newcomer and are thus motivated to help the new employee feel comfortable. Gallagher and Sias (2009) stated that veterans tend to be sensitive to the needs of newcomers, which suggests that veterans are "somewhat concerned with the newcomer's image" (p. 39). A more detailed discussion of the implications of this finding will be provided in the next section in conjunction with the discussion of task interdependence.

The connection between newcomer appraisal uncertainty and evaluation of work is an obvious one. The most effective way for a veteran employee to obtain information regarding the newcomer's ability level is to examine the work s/he produces. Gallagher and Sias (2009) identified a connection between newcomer appraisal uncertainty and evaluation of work and stated that veterans use this tactic to "reduce concerns and uncertainty about the newcomer's abilities to perform necessary tasks (i.e. appraisal uncertainty)" (p. 37). The direct effect of

newcomer appraisal uncertainty on evaluation of work was .78, which is quite strong. Thus, the relationship that was identified in the qualitative study withstood quantitative testing.

Newcomer relational uncertainty, which refers to uncertainty about how the new employee will interact and communicate with other members of the organization (Gallagher & Sias, 2009), had a direct effect on observation and third parties. These information seeking tactics are the most logical choices when it comes to reducing relational uncertainty because they allow veterans to a) observe how the newcomer interacts with others and make judgments based on those observations and b) compare notes with other employees to determine if other people share their opinions of the newcomer. Neither one of these tactics requires direct interaction with the newcomer. The indirect route to gathering relational information makes more sense than overt methods (such as overt questions) because it is the type of information that develops over time as one continues to interact with someone. Veterans cannot obtain a quick answer to how the newcomer interacts with others, whereas questions regarding job responsibilities (referent uncertainty) can be easily answered with overt questions.

Task Interdependence. Initiated and received task interdependence were both significant predictors of multiple outcome variables. Received task interdependence refers to the degree to which an employee relies on other people to do his or her job (Tagger & Haines, 2006). A veteran with a high degree of received task interdependence (in relation to the new employee) must rely heavily on the newcomer to complete job tasks. The results showed significant direct effects from received task interdependence to newcomer appraisal and newcomer relational uncertainty. These effects make theoretical sense because the newcomer's ability, as well as his or her communication style could drastically affect the veteran's ability to complete tasks. It also makes sense that received task interdependence would *not* have an effect on newcomer referent

uncertainty (a path that was not hypothesized) because the veteran likely already knows what the newcomer's job responsibilities are if s/he must rely on the newcomer's help to complete his or her own tasks.

Received task interdependence also had a direct effect on two information seeking tactics, namely observation and third parties. Both of these effects were hypothesized in the model and continue to make theoretical sense because veterans should be able to gather information regarding the newcomer's work and communication style through observation that can be beneficial when one is required to work with another person. In essence, veterans try to gauge what they have to work with and how that might affect their own ability to complete tasks. As we know from the interview study (Gallagher & Sias, 2009), veterans toss around ideas and "compare notes" with other employees to try and get a sense of who the newcomer is. It is also important to note that the effect of received task interdependence on observation and third parties need not be influenced by uncertainty. Regardless of whether veterans experience uncertainty about the newcomer, they still need information about him or her when they are required to work closely with one another in a received task interdependence situation.

Initiated task interdependence refers to the degree to which other people rely on an individual to complete their tasks (Tagger & Haines, 2006). From a veteran employee perspective, this means the newcomer relies on the veteran. I theorized that the knowledge that the newcomer will be relying on the veteran to succeed is not likely to incite the same degree of uncertainty that received task interdependence would. In an initiated task interdependence scenario, the veteran employee theoretically has more control over the situation because s/he is the person in charge of helping the newcomer, rather than the other way around. However, the results showed direct effects from initiated task interdependence to newcomer referent and

newcomer appraisal uncertainty. Neither relationship was predicted by one of the hypotheses, but both relationships make sense in retrospect. If the newcomer relies on the veteran to complete tasks, the veteran must be responsible to some degree for making sure the newcomer actually follows through with said tasks. Picture a scenario in which the veteran employee is responsible for training the newcomer, teaching them "the ropes," and possibly serving as a mentor. If the newcomer succeeds (i.e. learns quickly and performs well for the organization), it reflects positively on the veteran who trained him or her. Conversely, if the newcomer fails (i.e. does not learn quickly, does not adjust well, or performs poorly) it may reflect negatively on the veteran who trained him or her.

The scenario described above introduces the concept of "face" as a possible mediating variable. Considerable research has been conducted on face and facework. Goffman (1967) defined face as "the positive social value a person effectively claims for himself or herself by the line others assume he or she has taken during a participant contact" (Goffman, 1967, p.5). Goffman also indicated that face can be lost, saved, or protected. When a person's face is threatened, he or she will engage in counteractions to protect him or herself against those face threats.

Politeness theory, developed by Brown and Levinson (1978), is one of the most influential approaches for examining facework and extended Goffman's concept of face by distinguishing between the aspects of positive and negative face. Brown and Levinson defined negative face as "the want of every competent adult member that his actions be unimpeded by others" while positive face was defined as "the want of every member that his wants be desirable to at least some others" (1978, p.67). Similarly, Oetzel et al. (2000) defined positive face as "the claim over self-image to be appreciated and approved by others, whereas negative face is the

claim over self-image for autonomy or to not be imposed on by others,” (p. 237). Lim and Bowers (1991) extended Brown and Levinson’s theory by distinguishing between two dimensions of positive face. Fellowship face is the desire to be included, while competence face is the desire that your abilities be respected. Autonomy, or negative face, is the need not to be imposed on (Lim & Bowers, 1991).

Thus far I have theorized that veteran employees experience uncertainty in an initiated task interdependence scenario because they are worried about how their reputation will be affected by the newcomer's work output. Concern over reputation is related to veteran employees' competence (or how they perceive their competence may be judged by others), which provides a clear example of competence face as described by Lim and Bowers (1991). Competence face is a dimension of positive face, or the need for others' approval, which has been acknowledged as a factor that is relevant to new employee's socialization experiences (Miller & Jablin, 1991). New employees are often hesitant to ask too many questions or seek information from particular targets too many times because of the fear that they will look incompetent in front of other members of the organization. Thus, newcomers make an effort to maintain positive face under situations of uncertainty brought on by organizational entry.

The results from this project have shown that some aspects of organizational entry are similar for veteran employees as they are for newcomers, though experienced from a slightly different vantage point. Specifically, the pilot study, study one, and study two have confirmed that veteran employees experience the same basic types of uncertainty as new employees (referent, appraisal, and relational). The source of uncertainty is different, but the basic constructs remain stable. Veteran employees also use the same information seeking tactics that have been well established in previous research (Miller & Jablin, 1991) as those used by new

employees. Therefore, it is logical to assume that other aspects of the overall socialization process are relevant to veterans as well as newcomers. Because face concerns are relevant to newcomers, they are likely relevant to veterans as well.

Everyone has a basic need to meet the approval of others (Brown & Levinson, 1978), but this need may be especially relevant in a work situation where others' approval has an impact on one's success with the organization. In addition, past research (Gallagher & Sias, 2009) indicated that veteran employees are "also concerned with protecting the "face" of new hires and disguise their information-seeking attempts in a sensitive and face-saving manner" (p. 39). Oetzel et al. (2000) summarized the basic aspects of face-negotiation by indicating that people across all cultures attempt to negotiate face across communication situations and that the concept of face becomes important in situations with a great deal of uncertainty. Face-negotiation also emphasizes the locus of face, which is the difference between self face (concern for one's own image), other face (concern for another's image), and mutual face (concern for the image of both parties or the relationship) (Oetzel et al. 2000). If veteran employees are cognizant of the face concerns of the *newcomer*, it logically follows that they are cognizant of their own face concerns as well and will attempt to maintain both self and other face during interactions with the newcomer. Consequently, we can make the connection between initiated task interdependence and veteran employee uncertainty about the "raw material" the veteran has to work with when s/he is responsible for training or working with a new employee. That raw material may have an impact on the veteran's reputation, depending on how successful the newcomer is.

Initiated task interdependence also had direct effects on two information seeking strategies: overt questions and third parties. Both of these relationships were hypothesized and showed significant moderate relationships. Continuing with the scenario described above, it

makes sense that veteran employees would ask questions of the newcomer to gauge his or her level of experience, motivation level, and work ethic, as well as his or her specific job duties. Talking with coworkers (i.e. third parties) would also be a good way for the veteran to gather information about the newcomer that could prove to be useful when having to help him or her complete tasks.

If the concept of face is relevant to uncertainty, *facework* may be more relevant to information seeking processes. Facework “refers to the communicative strategies one uses to enact self-face and to uphold, support, or challenge another person’s face,” (Oetzel et al. 2000, p. 398). The distinction between face and facework primarily lies in the action-based, observable nature of facework (i.e. it can be directly observed in communication, whereas face is an abstract concept). Information seeking is also centered in behavior, as it focuses on the specific communication strategies that employees use to gather information. If employees are mindful of face concerns, it makes sense to consider information seeking strategies as a mode of enacting facework. According to Gallagher and Sias (2009), “Future research should examine these issues to obtain understanding of why individuals choose particular tactics to obtain information about new hires” (p. 39). Although the questions regarding the relevance of face and facework to veterans' experience of uncertainty and choice of information seeking tactics remain unanswered, the results of this study provide some indication that face may indeed have an important role in the overall process.

In addition to face concerns, the direct effects from initiated task interdependence to uncertainty and information seeking are likely connected to social cost. In addition to face, social costs have also been identified as relevant aspects of newcomers' information seeking processes (Miller & Jablin, 1991), so it may be a concept that is relevant to veterans as well. Additionally,

a connection between social costs and task interdependence has been identified. Taggar and Haines (2006) suggested that social exchange theory motivates members of interdependent work groups to assist their coworkers, particularly when received task interdependence is high.

Social exchange theory states that the parties in any given relationship want balance or fairness in that relationship (Blau, 1964). Thus, individuals who perceive being dependent on peers for help, support, and advice (received interdependence), will be motivated to reciprocate through facilitating the work of others by sharing information, helping and completing work well (i.e. initiated task interdependence). (Taggar & Haines, 2006, p. 215)

Taggar and Haines's explanation suggests that employees want to maintain balance in their work relationship so that neither party is doing more than his or her share. Social exchange is thus more relevant in received interdependence scenarios because the employee wants to help as well as be helped. While that is a valid argument, it is also quite possible that veteran employees in an *initiated* interdependence scenario experience uncertainty and are motivated to seek information for a more selfish purpose.

As stated above, the newcomer's success or failure may also reflect on veteran employees. According to social exchange theory, costs are associated with all interpersonal communication. Roloff (1981) defined social exchange as the “voluntary transference of some object or activity from one person to another in return for other objects or activities” (p. 21). Individuals are generally aware of the rewards, such as acquisition of information or social approval, and possible costs, such as social rejection, associated with particular interactions. An interaction is considered to be costly when it produces the opposite of the desired reward (Roloff, 1981). A veteran employee who trains a newcomer that succeeds in the organization may

experience rewards in the form of reputation or praise from other employees. If the newcomer is simply a member of the veteran's work group (rather than a trainee), a good performance from the newcomer helps the entire group succeed, which is a form of reward as well. At the very least, no costs will be incurred, so nothing is lost. On the contrary, the costs associated with a poorly performing newcomer include damage to the veteran's reputation or potential reprimand if the group is unproductive or makes mistakes.

When considering uncertainty and initiated task interdependence from a social exchange perspective, it makes sense that veteran employees would feel uncertain about the newcomer's ability and motivation level because both have the ability to incur either rewards or costs for the veteran. Additionally, veterans might feel referent uncertainty if they were unclear regarding the newcomer's specific job requirements. One cannot help someone else complete tasks if s/he is unaware of what those tasks are.

A veteran who does not experience uncertainty regarding the newcomer may still be motivated to seek information, whether or not social cost is a factor. Employees who are responsible for working together require information regarding the specific tasks the other person is responsible for, as well as his or her ability and motivation level. The need for information, regardless of uncertainty, explains the direct paths from initiated task interdependence to overt questions and third parties. Both of those relationships were predicted hypotheses that were supported by the data.

To summarize, the assumed relationship between uncertainty and information seeking withstood quantitative testing. In general, uncertainty about the newcomer does predict the use of information seeking tactics. However, the type of uncertainty makes a difference as to which specific information seeking tactics are used. Initiated and received task interdependence are

both predictors of uncertainty as well as information seeking. Once again, the specific dimension of task interdependence contributes to the type of uncertainty that is experienced, as well as the specific information seeking tactics that are used. The concepts of face/facework and social cost have been reintroduced as variables that may be relevant to the uncertainty reduction process. It is important to note that, although the results indicated multiple significant relationships in the path model, the disturbance values range from 50 - 82%. Therefore, a substantial portion of the variance in every endogenous variable remains unaccounted for. Face and social cost may account for some of the unexplained variance in the model; however, those relationships will need to be tested in future research. The following section summarizes the implications and limitations of the study and provides specific directions for future studies.

Implications and limitations

The results of study two produced several interesting findings that contribute to the existing body of knowledge on organizational socialization processes. To date, researchers have given little attention to how veteran employees are affected when new employees join an organization. Although new employees experience uncertainty when they join an organization, they also serve as a source of uncertainty for veteran members. Prior to this project, we did not have instruments that could be used to measure veteran employee uncertainty or its relationship to information seeking behaviors. The absence of quantitative measures represented a gap in the extant literature because we were unable to fully conceptualize organizational socialization processes from the perspective of veteran employees. The results of this study, therefore, have begun to provide a more holistic perspective on socialization because they bring understanding of the socialization process from the perspective of veteran employees. The broader

conceptualization of how these constructs fit into the organizational socialization process has both theoretical and practical implications.

From a theoretical perspective, the combination of methods and step-by-step progression of construct development represents a rigorous approach to research. The original interview study (Gallagher & Sias, 2009) provided the foundation for developing quantitative measures. The instruments were then developed, tested, and revised multiple times throughout a three-study sequence (pilot study, study one, and study two) in order to establish the reliability and validity of the measures. The results of each study built upon and corroborated the results of the previous study, which serves to strengthen the theoretical underpinnings of the project. Namely, organizational entry is a time of uncertainty for all employees, employees experience three types of uncertainty, and uncertainty acts as a catalyst for information seeking behaviors. It is important to note that both new and veteran employees experience the same three types of uncertainty (referent, appraisal, and relational), but the source of uncertainty is different, depending on one's vantage point. We know that new employees experience uncertainty upon joining an organization (Miller & Jablin, 1991; Teboul, 1994); however, they also *create* it for veteran employees. The results of this study confirm previous findings (e.g. Gallagher & Sias, 2009) and strengthen the concept that organizational entry is a process that involves a dynamic, ongoing negotiation between new and veteran members of an organization.

This study introduced task interdependence as a variable that is relevant to the veteran perspective of organizational encounter. Other researchers (Taggar & Haines, 2006; Wageman, 1995) have indicated that highly interdependent work groups engage in more communication and information sharing. The results of the current study provide evidence that task interdependence contributes to information seeking, as well as uncertainty, among veteran employees. The path

model revealed multiple relationships between the constructs that help to explain how the uncertainty reduction process works for veteran employees. Consequently, a veteran employee uncertainty reduction model has been developed. The development of a model that has been empirically tested represents a substantial contribution to the existing body of knowledge. Hypothesis testing would not have been possible without reliable and valid instruments, but now that the quantitative measures have been developed, they can be used in conjunction with other scales to test a variety of possible relationships that may contribute to our knowledge of socialization processes. Thus, the model that was developed throughout this project can be used as the starting point for future research.

Based on the connections of social cost and face to information seeking behaviors among new employees, I am extending theory to suggest that social cost and face are relevant contributors to the veteran employee uncertainty reduction model as well. However, these variables have not been empirically examined in relation to uncertainty and information seeking among veteran employees. Future researcher needs to add social cost and face to the model to determine if and how these variables are related and may contribute to our understanding of socialization processes.

From a practical perspective, better explanatory power can lead to the ability to provide information that is relevant to practitioners in terms of improving the overall effectiveness and efficiency of their socialization practices. For example, if a new employee will be working interdependently with veteran employees, it would be useful for practitioners to know that the level of interdependence contributes to veteran uncertainty and the means by which information is sought. A veteran employee in charge of training the newcomer could preempt a substantial amount of uncertainty by providing information about the newcomer to the other members of the

work group. Once the model is more well developed, researchers can use it to assess different organizational contexts and determine how the uncertainty reduction process changes according to particular organizational dynamics. For example, Myers (2005) found that members of high-reliability organizations that normally operate under conditions of high danger (e.g. fire fighters) are socialized in different and specific ways because of the nature of the job.

Future research needs to address veteran employees in a variety of different contexts to determine if aspects of the model remain stable or are contingent upon the situation. Structural equation modeling can be used to test the invariance of the constructs across contexts as well as time. For the time being, the results of this project could have a practical impact on organizational socialization by making practitioners more aware of the communication dynamics that are at work when a new employee joins the organization. As the model continues to be developed, the new insights can also be provided to practitioners.

Despite the theoretical and practical benefits of the project, it is also important to note the limitations of the study. First, the single method research design was limiting because the data only included the perceptions of the respondents. The data rely on retrospective self-reports from the participants. Respondents were asked to recall information that occurred up to six months prior to the time of data collection, which could mean that some responses were skewed due to inaccurate memories. Future research should incorporate multi-method research designs that include other modes of data collection such as interviews, focus groups, and nonparticipant observation.

Regarding participant criteria, the original goal was to collect data from veteran employees who had worked with a new employee within three months prior to the time of data collection. However, the specific nature of the participant criteria made it difficult to locate a

large enough sample. Thus, the criteria was expanded to six months in order to broaden the search a bit and locate more participants who were qualified to answer the survey. Furthermore, the current economic climate is such that very few organizations have actually hired new employees recently. After expanding the participant criteria, it was still very difficult to locate a large sample of people who qualified and the sample size was smaller than ideal for the intended hypothesis testing. The original research design included a structural regression model. In comparison to path models, however, SR models have substantially more parameters that need to be estimated because they include the measure (CFA) portion of the model in addition to the structural aspect. More free parameters require a larger sample in order for the model to have any stability (Kline, 2005a). Consequently, I was unable to run the SR model and had to rely on the path model instead. SR models are preferable because they operate under the assumption that the latent constructs are measured without error. They are not "error free" but the manifest indicators account for the error in the model and make for less contaminated relationships between the latent constructs. Future research needs to collect larger samples so the variables can be tested using a structural regression approach.

The model I developed is also limited to examining uncertainty reduction rather than uncertainty management. Kramer (2004) argued that uncertainty management represents a better approach to understanding the processes surrounding organizational entry because uncertainty is never really *reduced*, it simply changes form as employees become veteran members of their organizations. The model explains the relationships between veteran employee uncertainty and information seeking at the new employee's point of organizational encounter. Based on uncertainty reduction theory (Berger & Calabrese, 1975), we can assume that employees are motivated to seek information in an attempt to reduce uncertainty and the results of the current

study suggest that to be true. Whether or not the attempts at uncertainty reduction are successful is an entirely different question and one that could not be addressed by the current research design. Future research should incorporate longitudinal studies to address the relative success of different information seeking tactics and how they relate to uncertainty management over time.

Adopting a focus on uncertainty management in addition to multi-method research designs will allow researchers to establish a better understanding of the dynamic nature of organizational socialization processes. Longitudinal studies will also contribute to our understanding of how uncertainty is *managed* over time, rather than simply reduced. With that being said, longitudinal studies may suggest a different model than the one that was developed in this study. The current model is recursive, meaning that "all causal effects are unidirectional" (Kline, 2005a, p. 102) and there are no feedback loops. Although uncertainty does appear to predict the use of information seeking tactics, it is possible that obtaining information can actually *increase* uncertainty rather than reduce it. For example, a veteran might have zero knowledge about a new employee (i.e. he or she is very uncertain). Imagine the veteran finds out that the new employee is the daughter of the boss. The veteran has more information, but that particular information raises more questions than it answers, such as: Is she qualified for the job or did she only get it because her father is the boss? Will the boss give her special treatment because she is his daughter? Can she be trusted with office banter or will she relay all information to her father? As you can see, this particular situation would create a feedback loop such that uncertainty leads to information seeking and information seeking leads back to uncertainty. The model would be nonrecursive. Despite limitations to the study, the overall project has made substantial contributions to the existing body of knowledge on organizational socialization practices.

Conclusion

The goals of this dissertation were twofold. The initial goal was to extend Gallagher and Sias's (2009) veteran employee uncertainty and information seeking research by developing, testing, and validating measures of veteran employee uncertainty and information seeking about new hires. Quantitative scales needed to be developed to measure what types of uncertainty veteran employees experience with regard to new hires as well as the information seeking tactics that veterans use to reduce uncertainty. The scales will allow this topic to be examined in the future from a broader perspective that will provide a more holistic view of organizational entry processes, thus filling a void in the current literature.

The second goal of the current project was to use a structural equation model to test the relationship between veteran employee uncertainty and information seeking behavior from an uncertainty reduction perspective. In addition to uncertainty and information seeking, task interdependence was examined as a predictor variable in the model. By examining the relationships between these variables we have begun to develop a broader conceptualization of how veteran employees experience and contribute to the process of organizational entry. Study two presented a model of veteran employee uncertainty reduction that can be used as the starting point for future quantitative research designs on this topic.

The development of scales to measure veteran employee uncertainty and information seeking about new employees was only the first step toward increasing our theoretical understanding of organizational socialization processes. The instruments allowed us to move beyond simple understanding of what types of uncertainty veteran employees experience to understanding how uncertainty is related to other variables. We needed to conceptualize uncertainty as a variable that can be compared to other variables and assess its relationship to

information seeking and task interdependence to gain a better understanding of the uncertainty reduction process. Past research has examined the newcomer perspective; the current project examined the veteran perspective. However, newcomers and veterans do not represent opposite sides of the same coin. Both types of employees are participants in a dynamic, communicative process that depends on the interaction between organizational members. Future research should examine organizational socialization as a dynamic process of negotiation between members of organizations. There are still many possibilities that have yet to be explored and the current study merely represents the starting point.

References

- Afifi, W. A., & Weiner, J. L. (2004). Toward a theory of motivated information management. *Communication Theory, 14*, 167-190.
- Ashford, S.J., & Cummings, L.L. (1985). Proactive feedback seeking: The instrumental use of the information environment. *Journal of Occupational Psychology, 58*
- Berger, C.R., & Bradac, J.J. (1982). *Language and social knowledge: Uncertainty in Interpersonal relations*. London, UK. Edward Arnold Ltd.
- Berger, C.R. & Calabrese, R.J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. In R.T. Craig & H.L. Muller (Eds.), *Theorizing Communication: Readings Across Traditions*. (pp. 325-338). Thousand Oaks, CA: Sage.
- Blau, P. M. (1964). *Exchange and power in social life*. NY: Wiley. (as cited in Taggar & Haines, 2006)
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford.
- Brown, P., & Levinson, S. (1978). Universals in language usage: Politeness Phenomenon. In E. Goody (Ed.), *Questions and politeness: Strategies in social interaction* (pp. 56-310). Cambridge: Cambridge University Press.
- Chatman, J. A. (1991). Matching people and organizations: Selection and socialization in public accounting firms. *Administrative Science Quarterly, 36*, 459-484.
- Clampitt, P. G., & Williams, M. L. (2005). Conceptualizing and measuring how employees and organizations manage uncertainty. *Communication Research Reports, 22*, 315-324.
- Corman, S. R. (2005). Postpositivism. In S. May and D. K. Mumby (Eds.), *Engaging*

- organizational communication theory and research: Multiple perspectives.* (pp. 15-34).
Thousand Oaks, CA: Sage.
- Craig, R.T., & Muller, H.L. (2007). *Theorizing Communication: Readings Across Traditions.* Thousand Oaks, CA: Sage.
- Gallagher, E.B., & Sias, P.M. (2009). Have you met the new guy?: Veteran employee information seeking about new hires. *Western Journal of Communication.*
- Goffman, E. (1967). *Interaction Ritual.* New York, NY: Pantheon.
- Jablin, F.M. (2001). Organizational entry, assimilation, and disengagement/exit. In F.M. Jablin & L.L. Putnam (Eds.), *The New Handbook of Organizational Communication: Advances in theory, research, and methods.* (pp. 732-818). Thousand Oaks, CA: Sage.
- Jablin F.M. & Kramer, M.W. (1998). Communication related sense making and adjustment during job transfers. *Management Communication Quarterly*, 12, 155-182.
- Kline, R.B. (2005). *Principles and practice of structural equation modeling.* New York: The Guilford Press.
- Kline, T.J.B. (2005). *Psychological testing: A practical approach to design and evaluation.* Thousand Oaks, CA: Sage.
- Kramer, M.W. (1999). Motivation to reduce uncertainty: A reconceptualization of uncertainty reduction theory. *Management Communication Quarterly*, 13, 305-316.
- Kramer, M.W. (2004). *Managing uncertainty in organizational communication.* Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Louis, M.R. (1980). Surprise and sense-making: What newcomers experience in entering unfamiliar organizational settings. *Administrative Science Quarterly*, 25, 226-251.

- Lim, T. & Bowers, J.W. (1991). Facework: solidarity, approbation, and tact. *Human Communication Research*, 17, 415-450.
- Miller, V. D. (1996). An experimental study of newcomers' information seeking behaviors during organizational entry. *Communication Studies*, 47, 1-24.
- Miller, V.D. & Jablin, F.M. (1991). Information seeking during organizational entry: Influences, tactics, and a model of the process. *Academy of Management Journal*, 16, 92-120.
- Morrison, E.W. (1993). Newcomer information seeking: Exploring types, modes, sources and outcomes. *Academy of Management Journal*, 36, 557-589.
- Morrison, E.W. (2002). Information seeking within organizations. *Human Communication Research*, 28, 229-242.
- Myers, K.K. (2005). A burning desire: Assimilation into a fire department. *Management Communication Quarterly*, 18, 344-384.
- Myers, K.K. & Oetzel, J.G. (2003). Exploring the dimensions of organizational assimilation: Creating and validating a measure. *Communication Quarterly*, 51, 438-452.
- Oetzel, J.G., Ting-Toomey, S., Yokochi, Y., Masumoto, T., Takai, J. (2000). A typology of facework behaviors in conflicts with best friends and relative strangers. *Communication Quarterly*, 48, 397-419.
- Patten, M. L. (2001). *Questionnaire research: A practical guide*. Los Angeles: Pyczak Publishing
- Roloff, M.E. (1981). *Interpersonal communication: The social exchange approach*. Beverley Hills, CA: Sage.

- Taggar, S.; & Haines, III, V.Y. (2006). I need you, you need me: A model of initiated task interdependence. *Journal of Managerial Psychology*, 21, 211-230.
- Teboul, J.-C.B. (1994). Facing and coping with uncertainty during organizational encounter. *Management Communication Quarterly*, 8, 190-224.
- Teboul, J.-C.B. (1995). Determinants of new hire information-seeking during organizational encounter. *Western Journal of Communication*, 59, 305-319.
- Van der Vegt, G., & Van de Vliert, E. (2000). Team members' affective responses to patterns of intragroup interdependence and job complexity. *Journal of Management*, 26, 633-655.
- Van der Vegt, G., & Van de Vliert, E. (2002). Intragroup interdependence and effectiveness: Review and proposed directions for theory and practice. *Journal of Managerial Psychology*, 17, 50-67.
- Vogt, W. P. (2005). *Dictionary of Statistics & Methodology*. Thousand Oaks: Sage.
- Wageman, R. (1995). Interdependence and group effectiveness. *Administrative Science Quarterly*, 40, 145-180.
- Weick, K.E. (1979). *The social psychology of organizing*. New York: Random House.

Appendix A: List of Final Survey Items by Construct

Types of Uncertainty:

Newcomer Appraisal Uncertainty: The extent to which the veteran employee is uncertain about the newcomer's past work experience, skills, ability, or motivation to perform the job.

1. I was unsure whether s/he was suited to the job.
2. I was confident in his/her skills. (reverse code)
3. I was uncertain about his/her level of competence.
4. I questioned his/her ability to do the job.

Newcomer Referent Uncertainty: The extent to which the veteran employee is uncertain about the tasks the newcomer will actually be doing or the position the new person is going to fill.

1. I wondered what position s/he was going to fill.
2. I was uncertain about the tasks s/he would be doing.
3. I was unsure what jobs s/he was supposed to do.
4. I was uncertain which tasks were assigned to him/her.

Newcomer Relational Uncertainty: The extent to which the veteran employee is uncertain about how the newcomer will interact and fit in with coworkers, supervisors, and customers (in customer service jobs).

1. I wondered how s/he would "fit in" with others in the organization.
2. I was uncertain about how s/he would get along with other employees.
3. I was curious about his/her ability to work well with others.
4. I wondered if s/he would be easy to get along with.

Information Seeking Tactics:

Observation: Watching newcomers to acquire information about specific attitudes or behaviors. general attitudes or behaviors based on retrospective sensemaking. Does not include a value association about whether the observed behavior is good or bad.

1. I looked for "answers" about the new employee in his/her behavior. (Miller, 1996)
2. I went about my tasks, but if any information about the new employee came my way, I paid attention to it. (Miller, 1996)
3. I found out information about the new employee by keeping my eyes and ears open to what was going on around me. (Miller, 1996)
4. I watched his/her behavior around the workplace.

Disguising Conversations: Sharing information and stories with the newcomer in the hope that the newcomer will reciprocate.

1. I used phrases like "uh-huh" during conversations with the new employee to keep him/her talking about the information I wanted. (Miller, 1996)
2. Through my nonverbal behavior, I hinted to the new employee that I wanted more information about him/her. (Miller, 1996)
3. I shared experiences that I'd had on the job in the hope that s/he would share similar information with me.

4. I walked around the new employee's work space just to see "what was up."

Third Parties: Conversing with coworkers or supervisors in an effort to receive feedback regarding other people's opinions about the newcomer.

1. I checked with other people to see if they shared my opinions about the new employee.
2. I talked to other employees to find out how the new person was catching on.
3. I talked informally with other people about him/her.
4. I "compared notes" with other employees to see how they felt about the new person.

Evaluation of Work: Examining the newcomer's work to assess accuracy or proficiency of tasks. Includes a value association about whether the observed behavior is good or bad.

1. I checked his/her work to validate that it was being done correctly.
2. I estimated whether or not s/he was working at a reasonable pace.
3. I checked his/her work for mistakes.
4. I checked to see what s/he was accomplishing.

Overt Questions: Directly asking the newcomer for information.

1. I made a point of asking him/her how things were going.
2. I asked him/her questions.
3. I encouraged him/her to ask questions.
4. I asked him/her questions such as, "is everything going ok?"

Task Interdependence (adapted from Taggar & Haines, 2006):

Initiated Task Interdependence: The extent to which the new employee depends on the veteran employee for materials, information, and support.

1. To what extent does the new employee depend on you for information and advice?
2. To what extent does the new employee depend on you for materials, means, and other things they need?
3. To what extent does the new employee depend on your presence, help, and support?
4. To what extent does the new employee depend on you for doing his/her work well?

Received Task Interdependence: The extent to which the veteran employee depends on the new employee for materials, information, and support.

1. To what extent do you depend on the new employee for information and advice?
2. To what extent do you depend on the new employee for materials, means, and other things you need?
3. To what extent do you depend on the presence, help, and support of the new employee?
4. To what extent do you depend on the new employee for doing your work well?

Appendix B: Path Model Correlation Matrix for Observed Variables

<u>Variable</u>	<u>Rel</u>	<u>App</u>	<u>Ref</u>	<u>Obser</u>	<u>Eval</u>	<u>OQ</u>	<u>TP</u>	<u>DG</u>	<u>Iti</u>	<u>Rti</u>
Rel	1.00									
App	0.51	1.00								
Ref	0.13	0.38	1.00							
Obser	0.46	0.47	0.52	1.00						
Eval	0.28	0.74	0.30	0.45	1.00					
OQ	0.22	0.31	0.64	0.36	0.24	1.00				
TP	0.48	0.45	0.26	0.49	0.43	0.37	1.00			
DG	0.16	0.40	0.03	0.14	0.52	-0.06	0.27	1.00		
Iti	0.12	0.29	0.69	0.42	0.28	0.58	0.42	0.07	1.00	
Rti	0.52	0.51	0.23	0.45	0.42	0.25	0.54	0.23	0.22	1.00