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# Predictors of Task and Contextual Performance: Frame-of-Reference Effects and Applicant Reaction Effects on Selection System Validity

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PREDICTORS OF TASK AND CONTEXTUAL PERFORMANCE: FRAME-OF-  
REFERENCE EFFECTS AND APPLICANT REACTION EFFECTS ON  
SELECTION SYSTEM VALIDITY

by

JOHN HUNTHAUSEN

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

DOCTOR OF PHILOSOPHY  
in  
SYSTEMS SCIENCE: PSYCHOLOGY

Portland State University  
2000

**DISSERTATION APPROVAL**

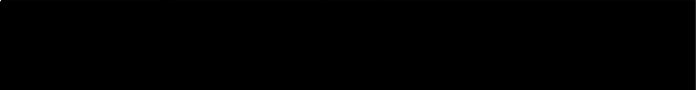
The abstract and dissertation of John Hunthausen for the Doctor of Philosophy in Systems Science: Psychology were presented February 4, 2000, and accepted by the dissertation committee and the doctoral program.

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## ABSTRACT

An abstract of the dissertation of John Hunthausen for the Doctor of Philosophy in Systems Science: Psychology presented February 4, 2000.

Title: Predictors of Task and Contextual Performance: Frame-of-Reference Effects and Applicant Reaction Effects on Selection System Validity

An employment process suprasystem contains human resource-related systems such as training, recruitment, performance appraisal, and personnel selection. Similarly, a personnel selection system consists of interdependent subsystems that work together to manifest its properties (e.g., the acquisition of qualified and high-potential individuals). Finally, each of these complex subsystems (e.g., applicant reactions to selection methods) have interdependent elements (e.g., procedural and distributive justice) that work together to manifest the properties of the subsystem (e.g., applicant fairness perceptions).

This dissertation takes such a systems approach to understanding the complexities of a personnel selection system to explore the interactions among three of its subsystems: 1) job performance predictors, 2) multidimensional job performance, and 3) applicant reactions to selection methods.

Participants were 214 entry-level managers at a major U.S. airline. First, I examined the notion that job performance is multidimensional, consisting of at least two distinct elements (task and contextual performance). Next, using a concurrent

validation design, I explored the relationship that cognitive ability and personality have with task and contextual performance. I also studied whether framing a personality inventory in the context of work yields higher validities and led to more positive fairness perceptions. Finally, I explored whether fairness perceptions moderate test validity.

The current study contributes to the selection research in several ways. First, the dissertation used field data to confirm the notion that overall job performance is multidimensional, a function of both task performance and contextual performance. Moreover, results suggested that personality is a better predictor of contextual job performance and that cognitive ability is a better predictor of task performance. Frame-of-reference of a personality test appeared to affect both its validity and applicants' fairness perceptions. Results also suggested that the perceived fairness of a personality test may affect its validity. Therefore, this dissertation demonstrates that taking a systems perspective of personnel selection integrates different branches of selection research and thus begins to identify the interactions and complexities of a selection system.

## Acknowledgments

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## GLOSSARY

1. Adverse Impact: a form of discrimination where organizational selection standards are applied uniformly to all groups of applicants, but the net result of these standards is to produce differences in the selection of various groups. Adverse impact is usually determined by the Four-Fifths Rule which states that the ratio of any group must be at least 80 percent of the ratio of the most favorably treated group.
2. The Big Five: a theory of normal adult personality based on five primary dimensions, often referred to as the “Big Five” (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness).
3. Contextual Job Performance: a component of job performance - the degree with which incumbents engage in activities that contribute to organizational effectiveness in ways that shape the organizational, social, and psychological context that serves as the catalyst for task activities (Borman & Motowidlo, 1993).
4. Conditional Dispositions: stable patterns of a person’s behavior that are contingent on situational conditions.
5. Criterion-related validity: the type of validity strategy where information is collected on a predictor and a criterion, and statistical procedures are used to test for a relation between the two sources of data. Results from these procedures answer the question: Can valid inferences about job performance be made from our predictor? (Gatewood & Feild, 1998).
6. Distributive Justice: a component of organizational justice. It is the fairness of organizational outcomes, results, or ends achieved. It concerns applicants’ perceptions of outcome satisfaction (i.e., was the ultimate decision fair?).
7. Face Validity: test-takers’ judgments of the degree to which a test measures what it purports to measure.
8. FOR NEO: The NEO personality test altered to reflect an “at-work” frame-of-reference.
9. Frame-of-Reference (FOR): Regarding personality testing, FOR refers to the context that test-takers refer to when responding to items.
10. g: the symbol for general cognitive ability which is generally understood as the human talent for solving problems using words or symbols.

## GLOSSARY CONTINUED

11. Model of Soldier Effectiveness: describes aspects of soldier effectiveness that cuts across all the different kinds of jobs that soldiers may perform. It assumes that soldier effectiveness involves more than just performing assigned job duties effectively and that other elements contributing to soldier effectiveness are common to nearly all soldiering jobs in the army. Thus, it outlines performance constructs (i.e., Determination, Teamwork, Allegiance) that fall outside technical proficiency kinds of performance requirements (Borman & Motowidlo, 1993).
12. Multiple Criteria: Criteria are evaluative standards by which objects, individuals, procedures, or collectivities are assessed for the purpose of ascertaining their quality (Muchinsky, 1997). In the context of job performance, multiple criteria are multiple, measurable indicators of job performance.
13. Procedural Justice: a component of organizational justice. It is the fairness of procedures used to achieve organizational results. It concerns perceptions of process satisfaction (i.e., was the process used to make a decision fair?)..
14. Prosocial Organizational Behavior (POB): behavior performed with the intention of promoting the welfare of individuals or groups to whom that behavior is directed (Brief & Motowidlo, 1986).
15. Organizational Citizenship Behavior (OCB): extra-role discretionary behavior intended to help others in the organization or to demonstrate Conscientiousness in support of the organization (Organ, 1988).
16. Self-Efficacy: the belief that one can be successful in a given context (i.e., taking written employment tests; Bauer, Maertz, Dolen, & Campion, 1998a).
17. Self-monitoring: the extent to which people observe, regulate and control the public appearance of self they display in social situations and interpersonal relationships (Kent & Moss, 1990).
18. Task Performance: the proficiency with which job incumbents perform activities that are formally recognized as part of their jobs (and, usually, are not a part of at least some other jobs in the organization), activities that contribute to the organization's technical core either directly by implementing a part of its technological process, or indirectly by providing it with needed materials or services (Borman & Motowidlo, 1993).

## CHAPTER I

## Introduction: A Systems Perspective of Personnel Psychology

Systems theory of organizations adopts a perspective of organizations as complex, dynamic systems, and views them as existing in an interdependent relationship with their environment. It is held that organizations are open systems that have continual interactions with multiple dynamic environments (e.g., legal, economic, political; Katz & Kahn, 1978). Therefore, an organization is part of a suprasystem, but also is comprised of subsystems. Thus, a complex organization can be seen as a social system wherein the various discrete segments and functions in it do not behave as isolated elements (Katz & Kahn, 1978). An organization is made up of a collection of interrelated parts working together to attain one or more objectives. For example, as members of organizations, people are organized into groups, groups are organized into departments, departments are organized into divisions, and divisions are organized into companies. In addition, the employment process, a central focus of personnel psychology, can also be considered a system within an organization suprasystem (Cascio, 1991).

A system is defined by Lendaris (1986) as "a) a unit with certain attributes perceived relative to its (external) environment, and b) a unit that has the quality that it internally contains subunits and those subunits operate together to manifest the perceived attributes of the unit" (p. 604). With regard to this definition, the employment process is a system of interdependent decisions within the various

personnel functions (Cascio, 1991). A key attribute of the unit (i.e., the employment process) is the retention of skilled and accomplished employees.

The field of personnel psychology is concerned with all aspects of applied individual differences in the context of the employment process (Muchinsky, 1997). Personnel psychologists determine what human skills and talents are needed for certain jobs, how to assess potential employees, how to evaluate employee job performance, and how to train workers to improve job performance (Muchinsky, 1997). Thus, the field of personnel psychology includes organizational functions such as personnel selection, training, and performance appraisal. The field also includes supportive functions or tools such as job analysis, job evaluation, and human resource planning. These organizational functions define the employment process and are essential to organizational effectiveness.

The various elements or phases of the employment process (e.g., recruitment, selection, and training strategies) are highly interdependent. For example, suppose that by conducting performance appraisals, supervisors and job incumbents determine that the requirements of a particular job have changed considerably from those originally determined by a job analysis. The original job analysis must be updated to reflect the newer requirements, which may affect the selection strategy and the wage paid for that job. In short, changes in one part of the system may have subsequent effects on all other parts of the system (Cascio, 1991).

Personnel selection is the central stage in the process of matching individuals to jobs (Cascio, 1991). In order to make a selection decision, information generally is

gathered subjectively (e.g., interviews) and objectively (e.g., paper-and-pencil tests) and combined to provide the basis for hiring or rejecting applicants. The decision is guided by considerations of utility and cost with regard to the choice of information sources and the method for combining data (Casio, 1991). Thus, the organization must consider the predictive ability of proposed selection procedures and the cost of adding additional predictive information. Moreover, in many cases, individuals are selected not only for their ability to perform entry-level jobs, but also in the hope that with appropriate experience and training they will be able to assume greater responsibilities and satisfactorily perform higher-level jobs as organizational needs change.

Thus, personnel selection can be perceived as a subsystem of the employment process system (or a system, depending on a particular perceptual stance; see Lendaris, 1986), such that selection methods used to gather job-relevant information about applicants, and applicant reactions to those methods are considered elements or subunits. However, if the elements are perceived as systems in themselves then they can be recognized as subsystems relative to the next level up system of personnel selection (Lendaris, 1986). Consequently, the employment process is considered a suprasystem.

#### A Systems Perspective of Personnel Selection

The crucial issue in personnel selection is whether the organization can collect data from applicants about individual characteristics that are closely related to job performance and effectively use those data to identify the best applicants for

employment offers (Cascio, 1991). To attract qualified applicants and retain skilled employees requires an understanding of the job in question, the purpose of the various departments, the divisions and their organization, and an understanding of the interdependencies among personnel functions. A systems approach to personnel selection requires careful attention to the interdependencies and complexities of the various elements of a selection system (e.g., performance criteria, predictors, applicant reactions, legal guidelines) that may influence the quality of selection decisions (Cascio, 1991).

Landy, Shankster-Cawley, and Moran (1995) recognize that the employment process is a system (or a suprasystem, depending on a particular perceptual stance; see Lendaris, 1986), that consists of personnel activities which influence and are influenced by social, economic, and organizational contexts. They maintain that technological advancement and demographic/social context changes will require new ways of thinking about predictors and criteria, and the interactions of workers and their environments. Generally, they suggest that the complexities inherent in personnel selection can be better addressed by taking a systems approach. Specifically, Landy et al. contend that adopting a systems approach to personnel selection will likely have enormous payoffs in understanding the interaction of antecedent conditions (such as ability, experience, and personality) and consequence conditions (such as task performance, contextual performance, and individual development).

For example, Landy et al. (1995) point out that a systems perspective will aid in identifying antecedents of job performance, such as values, personality, and

motivational states, which are not typically found when identifying the knowledge, skill, and ability requirements of a job. Furthermore, they suggest that adopting a systems perspective of personnel selection requires that personnel psychologists discard the traditional view of selection and placement activities as neutral technologies to be inserted into a system in a rational manner. For example, they contend that applicant reactions to employee selection procedures is an often overlooked element of a selection system, and a systems approach to developing a selection system would investigate the possible effects that applicant reaction may have on valued outcomes (e.g., predictor validity, job acceptance intentions).

In sum, for the purposes of the current research, personnel selection is considered a system within an employment process suprasystem that contains other human resource-related systems, such as training, recruitment, and performance appraisal. These systems work together to manifest desired properties of the employment process suprasystem (e.g., the retention of highly skilled employees). Similarly, personnel selection is a complex system consisting of interdependent subsystems (e.g., selection methods and applicant reactions) that work together to manifest properties of a selection system (e.g., the acquisition of qualified and high-potential individuals). Finally, each of these complex subsystems (e.g., applicant reactions) have interdependent elements (e.g., procedural and distributive justice) that work together to manifest the properties of the subsystem (e.g., overall fairness perceptions).

This dissertation takes a systems approach to understanding the complexities of a selection system and makes researchers more cognizant of interactions that personnel selection has with other systems (e.g., training, recruitment) within a suprasystem (i.e., the employment process), and of the interactions among three components of a selection system: 1) job performance predictors (i.e., cognitive ability and personality), 2) multidimensional job performance (i.e., task and contextual performance), and 3) applicant reactions to selection methods (i.e., the effects of procedural justice perceptions). The research focuses on these three components (themselves systems, and hence subsystems) to a personnel selection system, which serves as the context for the research. However, it would not be a systems approach without pointing out that there are many other complexities and interactions of other subsystems and elements that are involved in determining the properties of the whole selection system.

### Job Performance Predictors

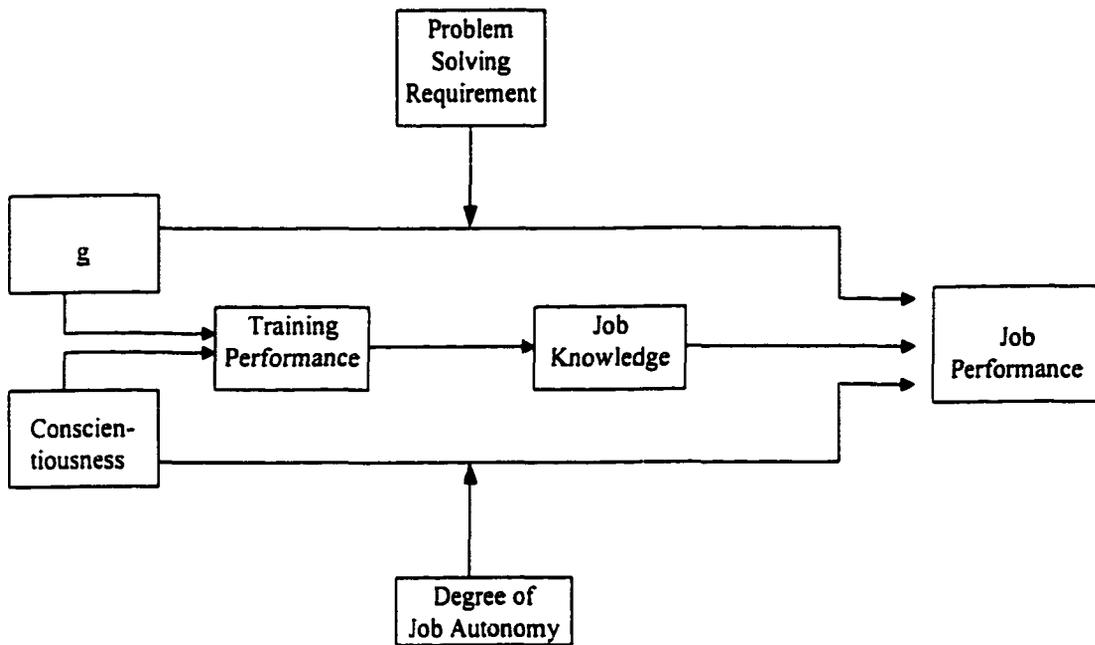
The effectiveness of a personnel selection system is judged by the caliber of people who are selected for employment. Generally, assessment methods (i.e., predictors) are used based on the belief that they will predict job success (Gatewood & Field, 1998). A truism in personnel psychology is: The best predictor of how well a person will perform a job is knowledge of how well that person has previously performed on a job (Guion, 1991). However, this approach is rarely helpful in the practical sense because most selection decisions must be made without knowledge of prior performance in the same or closely related job. Guion suggests that in the absence of past performance information, practitioners should base selection decisions

on either assessment procedures shown by research to predict at least one important criterion, or upon assessments hypothesized to be related to many important criteria.

The most widely hypothesized predictor of job performance is cognitive ability (Behling, 1997). Cognitive ability is generally understood as the human talent for solving problems using words or symbols. Many researchers claim that specific cognitive abilities such as spatial ability, verbal ability, and mechanical ability are subdimensions of a single human ability called "general cognitive ability," or *g* (see item 8 in Glossary; Behling, 1997). Although there has been much debate over what factors make up the construct of general cognitive ability (also referred to as general intelligence), most psychologists agree that it predicts training performance and job performance well (Hunter & Hunter, 1984; Ree & Earles, 1991, 1992, 1994; Schmidt & Hunter, 1992). Schmidt and Hunter (1992) go further to suggest a causal relationship between cognitive ability and job performance. They maintain that the relationship between *g* and job performance is mediated by training performance and the acquisition of job knowledge. Furthermore, they suggest that the relationship between *g* and job performance is stronger for jobs that require more problem solving, such as supervisory jobs. This suggests that *g* is a precursor to job knowledge as measured in various ways (e.g., supervisory ratings, interviews, assessment centers) and is often the predictor of choice. Thus, some argue that *g* generalizes as a valid predictor across all jobs (Ree & Earles, 1992, 1994; Schmidt & Hunter, 1992). However, there is controversy over cognitive ability testing because such tests often result in adverse impact against ethnic minorities (Martocchio & Whitener, 1992).

This finding has led researchers and practitioners to search for other predictors with high validity but low adverse impact (Maxwell, Arvey, & Richard, 1993).

Another stream of research provides evidence that personality or dispositional factors generalize across jobs to predict job performance (Barrick & Mount, 1991; Hurtz & Donovan, 1998; Tett, Jackson, & Rothstein, 1991). Hogan, Hogan, and Roberts (1996) describe personality as referring to the structures, dynamics, processes, and propensities inside a person that explain why he or she behaves in a characteristic way. Furthermore, personality may be seen as patterns of behavior that are consistent within a person and persist across a wide range of situations (Hogan, et al., 1996). A general framework of personality based on empirical research has emerged that captures the key aspects of personality in five primary dimensions (Digman, 1990). These five primary dimensions, often referred to as the "Big Five," are Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Substantial empirical evidence indicates that Conscientiousness predicts job performance in a wide variety of jobs (Barrick & Mount, 1991; Salgado, 1997). There is also some evidence that this relationship is moderated by perceived job autonomy, such that there is a stronger relationship between Conscientiousness and performance in jobs with high autonomy (Barrick & Mount, 1993). Figure 1 illustrates a predictor subsystem of personnel selection which depicts the relationship among cognitive ability, Conscientiousness, and job performance (Behling, 1997).



**Figure 1.** A model of the relationship between intelligence (g), Conscientiousness, and job performance. Adapted from Behling, O. (1998). Employee selection: will intelligence and conscientiousness do the job? Academy of Management Executive, 12, p. 80.

The model shows that Conscientiousness acts to improve training performance and the subsequent acquisition of job knowledge, which eventually leads to enhanced job performance. Additionally, it affects job performance directly, in that conscientious individuals are more likely to do a better job, especially in jobs with high autonomy (Behling, 1997).

This model only provides a basic and incomplete picture of the relationship between personality and job performance. For example, there is mounting theory and research which indicates that, in some jobs, other personality dimensions (e.g., Extroversion, Openness to Experience) may also predict and explain job performance (Barrick & Mount, 1991; Borman & Motowidlo, 1997; Salgado, 1997) and that there may be other moderating factors, such as test-taking motivation and applicant validity perceptions, that affect the relationship between personality and job performance (Schmit & Ryan, 1992; Schmit, Ryan, Stierwalt, & Powell, 1995).

In sum, considerable evidence supports the notion that both general cognitive ability and Conscientiousness predict success in a wide array of jobs (Barrick & Mount, 1991; Hunter & Hunter, 1984; Hurtz & Donovan, 1998; Ree & Earles, 1994; Tett, et al., 1991). However, cognitive ability brings with it a high degree of adverse impact. Consequently, some researchers and practitioners have turned to personality measures (e.g., Barrick & Mount, 1991; Borman & Motowidlo, 1997; Schmit, et al., 1995; Salgado, 1997) which have been suggested to predict job performance but with lower adverse impact (Hunter & Hunter, 1994; Maxwell et al., 1993; Ones, Viswesvaran, & Schmidt, 1993). Still, personality measures bring new problems.

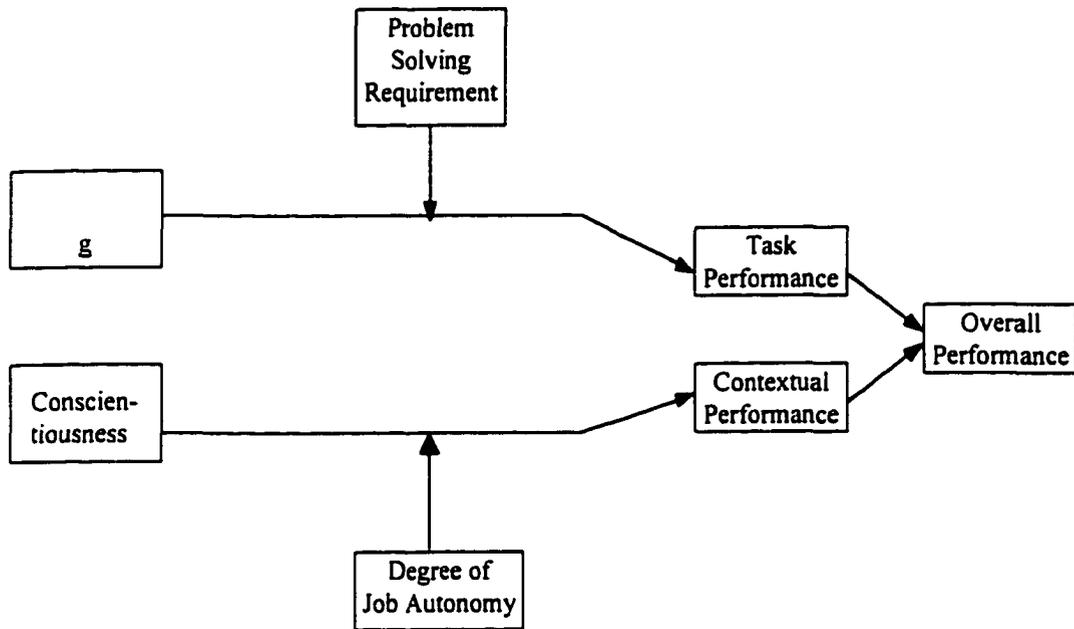
Historically, researchers have questioned the validity of personality measures and their usefulness as selection tools (Guion & Gottier, 1965; Schmitt, Gooding, Noe, & Kirsch, 1984). In addition, personality often has been measured by clearly non-job-related instruments like the Minnesota Multiphasic Personality Inventory (MMPI). As a result, applicants sometimes find them less job-related than selection procedures that clearly reflect the content of the job, such as simulations (Rynes & Connerly, 1993; Smither et al. 1993). Thus, there is a need to move research forward by exploring the usefulness of more explicitly job-relevant personality measures.

#### Multidimensional Nature of Job Performance

To date, a number of studies have examined the dimensionality of job performance (e.g., Campbell, 1990a; Campbell, McCloy, Oppler, & Sager, 1993; Conway, 1999; Murphy, 1989). This research has led to new theories of job performance that describe new ideas of what constitutes the performance domain (Borman & Motowidlo, 1993; Campbell, et al., 1993; Motowidlo, Borman, & Schmit, 1997). Borman and Motowidlo (1993) maintain that the number of potential facets of the performance domain can be grouped into two broad categories; (a) task performance, and (b) contextual performance. Task performance is the effectiveness with which job incumbents perform activities that contribute to the organization's technical core. Contextual performance is described as encompassing activities that contribute to organizational effectiveness in ways that shape the organizational, social, and psychological context and serves as the catalyst for task activities. This distinction of underlying performance constructs has become a stimulus for more research that

explores specific predictors or antecedents of each performance domain. Murphy and Shiarella (1997) suggest that studies reporting a relationship between cognitive ability and overall job performance are actually depicting a relationship between cognitive ability and task performance. Some research has supported this view that cognitive ability has a stronger relationship with task performance than it does with contextual performance (Campbell, 1990). Furthermore, Motowidlo and Van Scotter showed that personality has a stronger relationship with contextual performance than it has with task performance. Borman, Hanson, and Hedge (1997) describe how much of this new understanding of the personality-performance link is due, in part, to a broader view of the job performance domain, which incorporates elements of contextual performance. In sum, therefore, it may be beneficial to view personnel selection as a system and job performance as a subsystem, one that has at least two elements: task performance and contextual performance.

Figure 2 illustrates a predictor subsystem of personnel selection that outlines a multidimensional perspective of job performance and depicts the relationships among cognitive ability, Conscientiousness, and task and contextual performance. It also shows two potential moderators of these relationships to be discussed later, the problem solving requirement of the job, and job autonomy (Barrick & Mount, 1991; Schmidt & Hunter, 1992). Training performance and job knowledge are likely mediator variables but are not depicted here because they are not central to the current investigation.



**Figure 2.** A model of the relationship between intelligence (g), Conscientiousness, and task, contextual, and overall job performance.

However, there is not much research that explores possible implications of the multidimensional nature of performance for the validity of selection measures and its impact on hiring decisions. It is possible that the degree of test validity can vary substantially, depending on the extent to which the strategy for selecting applicants is consistent with the definition of job performance adopted by a particular organization (Murphy & Shiarella, 1997). Furthermore, the definition of job performance can vary for one particular job depending on how work is organized (e.g., individual vs. team), characteristics of the organization (e.g., structure, policies), and the leadership of the organization (e.g., espoused values).

### Personality Measurement

In another area of personality research, Schmit, Ryan, Stierwalt, and Powell (1995) provide evidence that the criterion validity of a personality measure can be affected by altering the Frame-of-Reference (FOR) reflected in personality scale items. They altered personality scale items to reflect the context of a job and obtained higher validities than obtained by items not referencing a job context. Although these findings suggest enhancements to personality measurement, there was no empirical evidence identifying the underlying cause. Schmit et al. (1995) suggested that future research is needed to determine whether self-monitoring is the moderator that may explain the results or whether other moderators may be responsible. However, they do not consider that applicant reactions could be the cause of the higher validities of job-related personality tests.

### Applicant Reactions

Applicant reactions to selection instruments have become increasingly recognized as having a notable impact on such outcomes as test-taking motivation (Chan, Schmitt, DeShon, Clause, & Delbridge, 1997; Sanchez, Truxillo, & Bauer, in press), organizational attractiveness (Bauer, Maertz, Dolen, & Campion, 1998a; Macan, Avedon, Paese, & Smith, 1994), job acceptance intentions (Macan, et al., 1994), job performance, organizational climate (Gilliland, 1993), and possibly the likelihood of legal action (Gilliland, 1993; Seymour, 1988). Generally, applicants prefer selection procedures that clearly reflect the content of the job, especially measures that are administered in non-paper-and-pencil formats (Rynes & Connerly, 1993). It follows that reactions to standard personality measures, which typically do not reflect job behavior, have not been as favorable as reactions to simulations and interviews (Smither, Reilly, Millsap, Pearlman, & Stoffey, 1993).

Organizational justice theory (e.g., Greeberg, 1986, 1987, 1990b) was conceived as a theoretical framework for examining fairness involved with the implementation of selection procedures and their outcomes (Gilliland, 1993). Organizational justice has been conceptualized from two main perspectives: 1) distributive justice, or the fairness of organizational outcomes, results, or ends achieved; and 2) procedural justice, or the fairness of procedures used to achieve the results (Gilliland, 1993). Distributive and procedural justice combine to form fairness perceptions and affect outcomes. Thus, they are two elements of an applicant reactions subsystem of a personnel selection system.

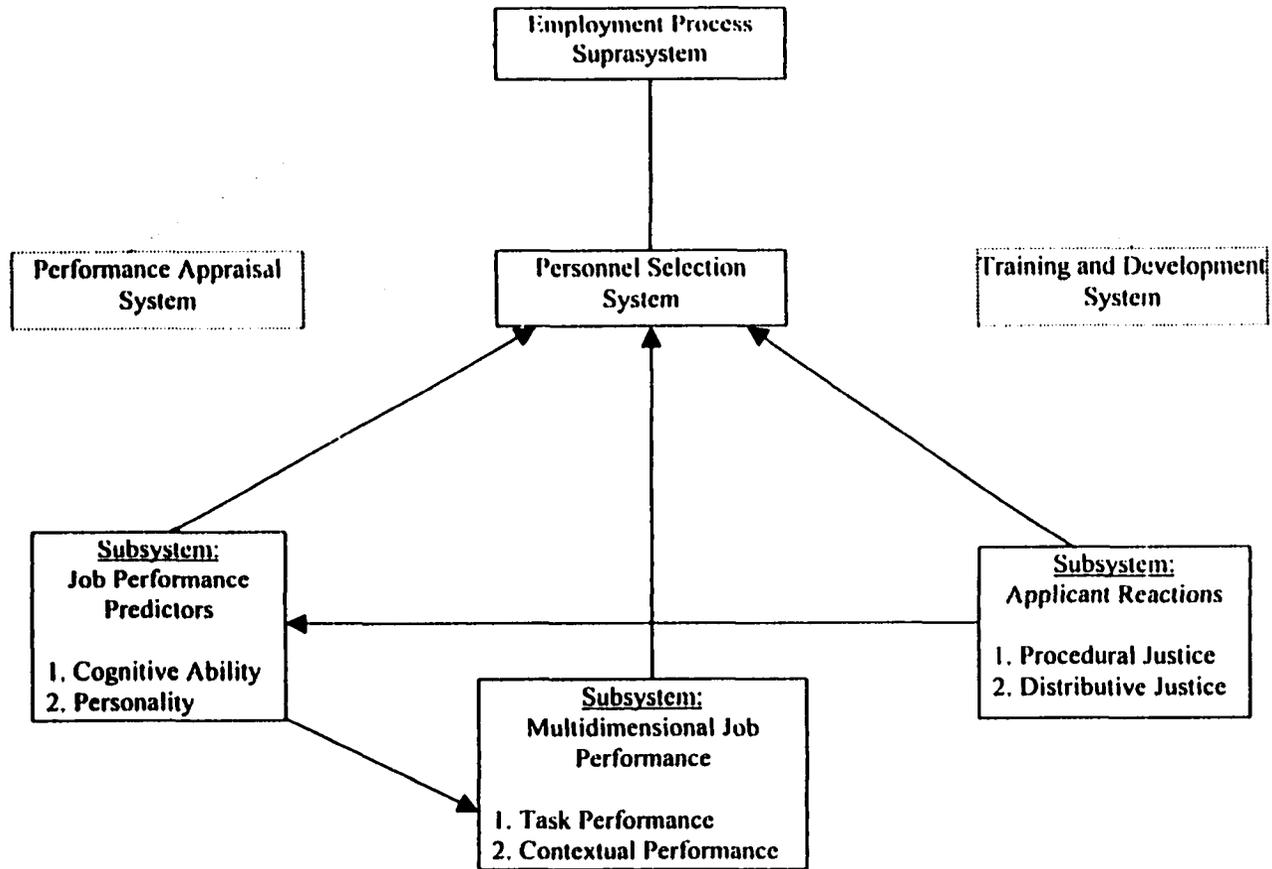
Much of the research in this area has focused on reactions such as perceived justice and face validity of selection methods and how these reactions relate to outcomes (e.g., Bauer et al., 1998a; Chan, Schmitt, Sacco, & DeShon, 1998; Kravitz, Stinson, & Chavez, 1996; Rynes & Connerly, 1993; Smither, Millsap, Stoffey, Reilly, & Pearlman, 1996; Truxillo & Bauer, 1999). However, many of the studies cited here have been conducted using college students as “applicants” (e.g., Chan, Schmitt, Sacco, & DeShon, 1998; Kravitz, Stinson, & Chavez, 1996; Rynes & Connerly, 1993) and they have studied a limited scope of job and test types. In addition, no research has investigated the effect that applicant reactions to selection instruments may have on actual criterion-related validity, although, this has been suggested by applicant reaction models (Gilliland, 1993). Thus, it seems appropriate to investigate how applicants’ perceptions of fairness may play a role in the predictive validity of personality measures, since these have typically had less favorable applicant reactions than other types of predictors. (Rynes & Connerly, 1993).

### Research Scope

This dissertation applies a systems approach to personnel selection by examining the interactions and complexities of three subsystems of a selection system: 1) job performance predictors (i.e., cognitive ability and personality), 2) the multidimensional job performance (i.e., task and contextual performance), and 3) applicant reactions to selection methods (i.e., the effects of procedural justice perceptions). Specifically, it attempts to fill gaps in the personnel selection literature in three ways. First, it seeks to confirm the notion that overall job performance is a

function of both task performance and contextual performance. Specifically, it examines whether personality is more relevant for explaining contextual performance, and cognitive ability is more relevant for explaining task performance. Next, it investigates, in an actual selection setting, the possible frame-of-reference (FOR) effects on the validity of personality scales using a contextual performance criterion. Specifically, it examines whether framing a personality inventory in the context of work yields higher validities. Furthermore, entry-level managers' reactions and validity perceptions of a standard personality inventory and an altered personality inventory are explored. Possible moderating effects that applicant reactions may have on criterion-related validity are investigated.

Generally, the dissertation presents a systems approach to personnel selection which brings branches of personnel selection research together by: 1) examining the usefulness of considering a multidimensional view of job performance for personnel selection by differentiating the criterion domain into task and contextual performance; 2) exploring frame of reference effects on validity of personality scales; and 3) exploring applicant reaction effects on the validity of a cognitive ability test and personality scales. Figure 3 depicts a personnel selection system consisting of the three subsystems, their elements, and the relationships relevant to the current research.



**Figure 3.** A systems perspective of personnel selection.

## CHAPTER II

## The Multidimensional Nature of Job Performance

Job performance can be thought of as the degree to which an individual helps the organization reach its goals and is arguably one of the most important dependent variables studied in applied psychology (Murphy & Shiarella, 1997). However, it seems that the field of personnel selection has focused more on developing and refining predictors of job performance than on defining job performance constructs (Motowidlo, Borman, & Schmit, 1997), such that some selection research may investigate predictor validity without sufficient attention to what is being predicted (Murphy & Shiarella, 1997). Murphy and Shiarella point out that it is important that the concept of job performance be understood before it can be measured, predicted, or changed. However, there does not seem to be a common understanding of what constitutes "job performance" (Campbell, McCloy, Oppler, & Sager, 1993).

To attain some conceptual common ground, researchers and theorists have focused on explicating job performance by examining its dimensionality (e.g., Campbell et al., 1993; Motowidlo et al., 1997). Generally, these job performance theories describe the content and latent structure of the performance construct and provide insight into its measurement, correlates, and predictors. The facets from various theories can be grouped into two broad categories; (a) individual task performance, and (b) behaviors that create and maintain the social and organizational context that allows others to carry out their individual tasks (Murphy & Shiarella,

1997). Borman and Motowidlo (1993) label these two dimensions task performance and contextual performance, respectively.

### Task and Contextual Job Performance

Motowidlo et al. (1997) describe job performance as the summary of occurrences of behavior that are evaluated as promoting or hindering organizational goal accomplishment. They assert that there are many different kinds of behaviors that advance or hinder organizational goals, and lumping them all together produces a psychologically intractable “hodgepodge.” To better understand job performance, and to help direct selection research, Motowidlo et al. maintain that the performance domain can be organized into two behaviorally homogeneous categories (i.e., task performance, contextual performance). This helps direct selection research in choosing the best predictors of multiple criteria simultaneously, each representing behavioral patterns in each category.

Borman and Motowidlo (1993) distinguish task performance from contextual performance by describing the reasons each promotes or hinders organizational goal accomplishment.

Task performance is the proficiency with which job incumbents perform activities that are formally recognized as part of their jobs (and, usually, are not a part of at least some other jobs in the organization), activities that contribute to the organization’s technical core either directly by implementing a part of its technological process, or indirectly by providing it with needed materials or services (Borman & Motowidlo, 1993, p. 73).

Thus, there are two types of task performance. One consists of activities that transform raw materials into good and services, and the other consists of activities that

service and maintain the technical core by replenishing its supply of raw materials; distributing its finished products; or providing important planning, coordination, supervision, or staff functions that enable it to function effectively and efficiently (Motowidlo et al., 1997). For example, airline baggage handlers contribute directly to the technical core by transferring customers' luggage to the belly of planes. In addition, airline operations managers contribute to the technical core indirectly by supplying baggage handlers with the needed equipment in order to transfer the bags. Thus, task behaviors are desirable or undesirable based on their close relation to the technical core of the organization.

Many validity studies inappropriately equate individual task performance with overall job performance (e.g., Hunter, 1986; Murphy, 1996). This perspective fails to acknowledge that the domain of job performance also includes a wide range of behaviors, such as teamwork and organizational citizenship, which are not always necessary to accomplish job tasks, but are required for smooth functioning of teams and organizations (Borman & Motowidlo, 1993). Activities like these that do not contribute through the organization's core technical process illustrate what Borman and Motowidlo have labeled contextual performance. Contextual performance is described as the degree with which incumbents engage in activities that contribute to organizational effectiveness in ways that shape the organizational, social, and psychological context that serves as the catalyst for task activities (Borman & Motowidlo, 1993). Thus, the desirability of contextual behaviors is determined by the

degree to which these behaviors maintain the broader organizational, social, and psychological environment to which the technical core must function.

This description of contextual performance borrows heavily from three streams of research: (1) organizational citizenship behavior (OCB; Organ, 1988).; (2) prosocial organizational behavior (POB; Brief & Motowidlo, 1986 and (3) the model of soldier effectiveness (Campbell, 1990). These areas of research provide a conceptual framework, which helps to deductively identify elements of contextual performance. OCB is defined as extra-role discretionary behavior intended to help others in the organization or to demonstrate Conscientiousness in support of the organization (Organ, 1988). POB is behavior performed with the intention of promoting the welfare of individuals or groups to whom that behavior is directed (Brief & Motowidlo, 1986). The model for soldier effectiveness outlines performance constructs (i.e., Determination, Teamwork, Allegiance) that fall outside technical proficiency kinds of performance requirements (Borman & Motowidlo, 1997). Borman and Motowidlo's (1993) taxonomy of contextual activities (see Table 1) summarizes OCB, POB, and other concepts into five contextual performance categories.

Table 1

Taxonomy of Contextual Performance.

- 
1. Volunteering to carry out task activities that are not formally a part of the job.
  2. Persisting with extra enthusiasm or effort when necessary to complete own task activities successfully.
  3. Helping and cooperating with others.
  4. Following organizational rules and procedures even when personally inconvenient.
  5. Endorsing, supporting, and defending organizational objectives.
- 

Note. Adapted from Borman, W. C., & Motowidlo, S. J. (1997). Task performance and contextual performance: The meaning for personnel selection research. Human Performance, 10(2), p. 102.

Van Scotter and Motowidlo (1996) further classify these elements of contextual performance into two main facets: interpersonal facilitation, which includes cooperative, considerate, and helpful acts that assist co-workers' performance, and job dedication, which includes self-disciplined, motivated acts such as working hard, taking initiative, and following rules to support organizational objectives.

In addition to how task and contextual performance contribute to organizational effectiveness, Borman and Motowidlo (1993) distinguish them from one another in three important ways. First, task behaviors vary considerably across jobs, whereas contextual behaviors are typically consistent across jobs. Second, it follows that task behaviors are role-prescribed, and contextual behaviors typically are not. In other words, performing job tasks is very specific to the type of job. Third, and most important to this dissertation, the antecedents of task performance more

likely have to do with cognitive ability, whereas antecedents of contextual performance are more likely to involve personality variables (Borman & Motowidlo, 1993).

There is accumulating evidence that suggests that overall job performance is a function of both task performance and contextual performance. MacKenzie, Podsakoff, and Fetter (1991) showed that for sales representatives, number of sales and ratings of OCB contributed equally to ratings of overall performance. In addition, using Borman and Motowidlo's (1993) taxonomy, Motowidlo and Van Scotter (1994) obtained contextual, task, and overall performance ratings from 300 Air Force enlisted personnel. They reported that correlations between task performance and overall performance and between contextual performance and overall performance were roughly equal. Using hierarchical regression analyses, they noted that contextual performance accounted for a significant amount of variance in overall performance that was not accounted for by task performance and vice-versa; they concluded that task performance and contextual performance contribute independently to overall performance.

Moreover, using the same data set, Van Scotter and Motowidlo (1996) examined specific behavioral elements that define contextual performance. Specifically, they divided the construct of contextual performance into two facets: interpersonal facilitation and job dedication. However, of the two, only interpersonal facilitation accounted for unique variance in supervisors' judgments of overall performance.

Finally, using path analysis and supervisor ratings of soldier performance, Borman, White, and Dorsey (1995) showed that a contextual performance factor and a task performance factor had significant and equal path coefficients to overall performance. Therefore, there is an increasing body of evidence indicating that task and contextual performance separately influence ratings of global overall performance.

### Managerial Job Performance

Dimensions of managerial performance undoubtedly contain many of the deductively derived elements of contextual performance described above. For example, Conway (1999) found through his meta-analysis that both elements of contextual performance (interpersonal facilitation and job dedication) described by Van Scotter and Motowidlo (1996) contribute to overall performance for managers. However, the elements of contextual performance have not been described in terms of specific managerial job dimensions. For this, results of job analyses can be used to identify managerial performance dimensions that contain contextual elements, which may be slightly different from contextual elements of non-managerial contextual performance dimensions (Borman & Motowidlo, 1993).

Borman and Brush (1993) combined results of several analyses of middle-management jobs. Specifically, they collected twenty-six sets of performance dimensions (a total of 187 dimensions) derived from empirical studies of managerial performance requirements. Thus, the performance dimensions were developed inductively, and consequently reflect a representative sample of the manager performance domain. Through subjective analysis and factor analysis, Borman and

Brush (1993) produced eighteen factors or meta-performance dimensions (Table 2)

that summarized all 187 dimensions.

Table 2

Managerial Meta-Performance Dimensions.

- 
1. Planning and organizing
  2. Guiding, directing, and motivating subordinates and providing feedback
  3. Training, coaching, and developing subordinates
  4. Communicating effectively and keeping others informed
  5. Representing the organization to customers and the public
  6. Technical proficiency
  7. Administration and paperwork
  8. Maintaining good working relationships
  9. Coordinating subordinates and other resources to get the job done
  10. Decision making and problem solving
  11. Staffing
  12. Persisting to reach goals
  13. Handling crises and stress
  14. Organizational commitment
  15. Monitoring and controlling resources
  16. Delegating
  17. Selling and influencing
  18. Collecting and interpreting data
- 

Note. Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W. C. Borman (Eds.), Personnel selection in organizations (pp. 84, 85). San Francisco: Jossey-Bass.

The majority of the meta-dimensions represent task performance, which consists of activities that service and maintain the technical core by replenishing its supply of raw materials; distributing its finished products; or providing important planning, coordination, supervision, or staff functions that enable it to function effectively and efficiently (Motowidlo, Borman, & Schmit, 1997). However, at least

six of the meta-dimensions (see Table 3) are noticeably saturated with elements of contextual performance (Borman & Motowidlo, 1993).

Table 3

Six Meta-Job dimensions Containing Contextual Performance Elements.

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1. Organizational commitment: Working effectively within the framework of organizational policies, procedures, rule sand so forth; carrying out orders and directives; supporting reasonable policies of higher authorities.
2. Representing the organization to customers and the public: representing the organization to those not in the organization; maintaining good organizational image to customers, the public, stockholder, the government, and so on; dealing with customer/client problems.
3. Maintaining good working relationships: developing and maintaining smooth and effective working relationships with superiors, peers and subordinates; displaying personal concern for subordinates; backing up and supporting subordinates as appropriate; encouraging and fostering cooperation between subordinates.
4. Persisting to reach goals: persisting with extra effort to attain objectives; overcoming obstacles to get the job done.
5. Training, coaching, and developing subordinates: identifying staff training needs and developing responsive training programs and material, or ensuring that such programs/materials get developed; training, teaching, and coaching subordinates; assisting subordinates in improving their job skills.
6. Communicating effectively and keeping others informed: communicating orally and in written form; keeping subordinates, superiors, and others informed; obtaining and then passing on information to those who should know.

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Note. Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W. C. Borman (Eds.), Personnel selection in organizations (p. 86). San Francisco: Jossey-Bass.

As described by Borman and Motowidlo (1993), the organizational commitment factor is very similar to elements of the organizational rules and

procedures contextual dimension. The representing the organization to customers and public factor is closely related to the endorsing, supporting, and defending organizational objectives dimension, and the helping and cooperating with others dimension. Maintaining good working relationships is aligned with the helping and cooperating with others dimension, and persisting to reach goals is closely related to the persisting with extra effort contextual dimension. The training, coaching, and developing factor is related to the helping and cooperating with others contextual dimension, and the communicating factor has aspects similar to Organ's (1988) organizational courtesy concept, an element of organizational citizenship behavior.

Using Van Scotter and Motowidlo's (1996) coarse classification of contextual performance (i.e., interpersonal facilitation and job dedication), Conway (1999) conducted a meta-analysis to investigate the contribution of contextual performance to overall managerial performance. He included data from 14 different studies containing managerial performance data with task and contextual elements. Conway concluded that both facets of contextual performance (interpersonal facilitation and job dedication) provided unique contributions to overall managerial performance.

Given this review of these inductively derived managerial job performance dimensions, Borman and Motowidlo (1993) estimate that at least 30 percent of managerial performance reflects contextual performance. Therefore, both theoretical arguments and empirical evidence that suggest contextual performance is essential to managerial success.

### Predictors of Task and Contextual Performance

It appears that task and contextual performance separately influence ratings of global overall performance. This is noteworthy because it provides a rationale for the stance that there are different antecedents or predictors of each performance dimension (Barrick & Mount, 1991; Hogan, Hogan, & Roberts, 1996).

Generally, considerable evidence supports the contention that both general cognitive ability and personality traits (e.g., Conscientiousness) predict job performance (e.g., Barrick & Mount, 1991; Hunter & Hunter, 1984; Hertz & Donovan, 1998; Ree & Earles, 1994; Tett, et al., 1991). However, Murphy and Shiarella (1997) suggest that studies reporting a relationship between cognitive ability and overall job performance are actually depicting a relationship between cognitive ability and task performance. Some research supports the view that cognitive ability has a stronger relationship with task performance than it does with contextual performance, and that personality predicts contextual-related performance better than it does task performance (Borman & Motowidlo, 1997; Campbell, 1990b; Hogan 1995; Motowidlo & Van Scotter, 1994).

In addition to providing evidence that task and contextual performance contribute independently to overall performance, Motowidlo and Van Scotter (1994) also provide evidence that personality measures are good predictors of contextual performance. They reported that correlations between personality measures (i.e., work orientation, dependability, cooperativeness, locus of control) and contextual performance ratings were significantly higher than correlations between personality

and task performance. However, correlations between ability and performance criteria were quite low and did not indicate that ability correlated more strongly with task performance. The authors suggested that this finding was likely due to severe restriction of range imposed on the sample by previous selection hurdles.

In a meta-analytic study, Kamp and Hough (as cited in Borman & Motowidlo, 1997) examined correlations between eight personality dimensions and performance criteria including job proficiency, training performance, school success, and delinquency. Delinquency was regarded to be conceptually closest to contextual performance because it incorporated violations of company policy and employee theft. Generally, correlations between personality dimensions and this contextual-like criterion were much higher than between personality dimensions and other criteria that did not appear to measure contextual performance.

Some findings of Project A, a large-scale test validation research project conducted in the U.S. Army, also supported the notion that personality predicts contextual performance and cognitive ability predicts task performance (Campbell, 1990b). As part of Project A, personality factors were used to predict performance dimensions. Core technical proficiency, a task performance factor, and personal discipline, a contextual performance factor, were two of five criterion constructs identified. General cognitive ability correlated substantially higher with the task performance criterion than with the contextual performance dimension. Conversely, dependability, a personality predictor, had a stronger relationship with the contextual performance criterion than with the task performance criterion.

Finally, Hogan (1995) added further support to the contention that personality predicts contextual performance. He reported relevant validation research that was conducted using the Hogan Personality Inventory (HPI), which is a measure of the Big Five Personality constructs. Results from 13 validation studies indicated that personality measures were more closely linked to contextual performance than to task performance and overall performance. Mean correlations between scores on the HPI scales and measures of contextual criteria, such as teamwork, customer service, and resolving conflict were higher than correlations between these scales and overall performance.

In sum, the general finding from past research suggests that when the contextual components of overall performance can be measured separately, predictor validities for personality measures will be higher than when the criterion is overall performance. Specifically, substantial evidence indicates that personality correlates more highly with contextual performance than it does with either task performance or overall performance.

However, only one study (Motowidlo & Van Scotter, 1994) investigated these predictor-criterion relationships using Borman and Motowidlo's (1993) taxonomy as the basis for measuring contextual performance. Most studies used criteria that were considered conceptually close to contextual performance criteria. Furthermore, there is little empirical evidence from field research to support all proposed predictor-criterion relationships. In addition, data should be collected from a wider scope of job types to better establish these relationships. For example, research suggests that

personality measures may be more useful in predicting job behavior when autonomy is high compared with when it is low (Barrick & Mount, 1991). A management job inherently has a high degree of autonomy and has shown to have a strong emphasis on contextual performance (Borman & Motowidlo, 1993). Thus, using data from entry-level managers, I predicted in the present research that personality measures will explain more variance in contextual performance than they will explain in task performance, and that cognitive ability will explain more variance in task performance than it will explain in contextual performance.

## CHAPTER III

## Personality as a Predictor of Job Performance

Generally, personality refers to distinctive interpersonal characteristics or factors that define an individual and determine a person's pattern of interaction with the environment. These factors are what drive people's social behavior, including their performance on the job and their responses to personality questionnaires (Hogan, Hogan, & Roberts, 1996).

The use of personality inventories for predicting job success has been debated in the psychological literature for a number of years (e.g., Digman, 1990; Barrick & Mount, 1991; Goldberg, 1993; Guion, & Gottier, 1965; Tett, Jackson, & Rothstein, 1991). On logical grounds, it was thought that personality related to job performance because social behavior was grounded in an individual's personality characteristics (Hogan, 1991). However, selection specialists relied on psychological inventories such as the Minnesota Multiphasic Personality Inventory (MMPI), that were developed by clinical psychologists to measure scales of abnormal personality (e.g., depression, schizophrenia). *These types of assessments were never intended for use in personnel selection, and eventually their indiscriminate use became under attack for invading test-takers' privacy (Muchinsky, 1997).* In addition, there was little established relationship between scores on these measures and job performance.

As a result, researchers lost confidence in personality measures for predicting job performance due to weak predictive validity and concluded that personality inventories should not be used to predict job behavior (Guion & Gottier, 1965;

Schmitt, Gooding, Noe, & Kirsch, 1984). Schmitt et al. (1984) conducted a meta-analysis and found that personality tests were actually among the least valid types of selection tests. Thus, the period prior to the 1990s was characterized by an initial belief in utility of personality testing, followed by a large-scale mistrust in how such tests were used and in their validity. This later phase was accompanied by a general decline in research and assessment conducted in this area.

Nonetheless, some psychologists continued to believe that personality could influence job behavior, and over the past several years the pessimism regarding personality testing for personnel selection has been replaced by a renewed sense of optimism (Hogan, Hogan, & Roberts, 1996; Salgado, 1997). Most of this optimism has been due to advances in personality theory and measurement. Because early personality inventories were intended to make clinical diagnosis and differentiate normal from abnormal personality, and were not intended to make distinctions within the range of "normal" adult personality (Muchinsky, 1997), psychologists began developing new inventories that were designed around theories of normal adult personality (Digman, 1990). These theoretical developments are concerned with the dynamics of everyday social behavior and are relevant to many non-clinical fields. Personnel psychology is one such non-clinical field that may be able to take advantage of these developments in areas such as leadership, performance appraisal, and personnel selection (Hogan, 1991).

### Five-Factor Theory of Normal Personality

Another development in the field of personality measurement is the growing agreement among researchers that normal adult personality characteristics can be grouped into five broad dimensions (Digman, 1990; Goldberg, 1993; Hogan, 1991; McCrae & Costa, 1987). Through factor analytic procedures, personality researchers have consistently uncovered a similar structure of personality traits (e.g., Costa, McCrae, & Dye, 1991; Digman, 1990; John, 1990). A trait is considered to be a continuous dimension on which individual differences may be arranged quantitatively in terms of the amount of the characteristic the individual exhibits. The concept of a trait is used to explain the consistency of an individual's behavior over a variety of situations and is used to explain the different reactions individuals may have to the same situation (Costa & McCrae, 1992). The five comprehensive normal personality traits (sometimes called "Super Traits") represented in what is often called the "Big Five" are Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness, each of which is composed of several related traits or facets (Digman, 1990). Costa and McCrae (1992) maintain that a comprehensive sketch that summarizes emotional, interpersonal, experiential, attitudinal and motivational styles can be obtained by an individual's standing on each of the five factors. The following briefly describes each of the five general traits or factors (Costa & McCrae, 1992).

**Neuroticism.** This domain of personality contrasts adjustment or emotional stability with maladjustment or Neuroticism. The general tendency to experience negative affects such as fear, sadness, embarrassment, anger, guilt, and disgust is the core of the Neuroticism domain. Individuals high in

Neuroticism are prone to have irrational ideas, to be less able to control their impulses, and to cope more poorly than other with stress (p. 14).

Extraversion. In addition to liking people and preferring large groups and gatherings, extroverts are also assertive, active, and talkative. They like excitement and stimulation and tend to be cheerful in disposition. They are upbeat, energetic, and optimistic. Introverts are reserved rather than unfriendly, independent rather than followers, and even-paced rather than sluggish. This factor is strongly correlated with interest in enterprising occupations (p. 15).

Openness to Experience. The elements of Openness in which people vary include active imagination, aesthetic sensitivity, attentiveness to inner feeling, preference for variety, intellectual curiosity, and independence of judgment. Open individuals are curious about inner and outer worlds and are willing to entertain novel ideas and unconventional values. Closed individuals tend to be conventional in behavior and conservative in outlook, and have a narrower scope and intensity of interests (p. 15).

Agreeableness. Like Extraversion, Agreeableness is primarily a dimension of interpersonal tendencies. The agreeable person is fundamentally altruistic. He or she is sympathetic to others and eager to help them, and believes that others will be equally helpful in return. By contrast, the disagreeable or antagonistic person is egocentric, skeptical of others' intentions, and competitive rather than cooperative. Agreeable are more popular than antagonistic individuals. However, the readiness to fight for one's own interests is often advantageous, such as in a courtroom. Skeptical and critical thinking contributes to accurate analysis in the sciences (p. 15).

Conscientiousness. Individual differences in the tendency to plan, organize, and carry out tasks are the basis of this domain. The conscientious individual is purposeful, strong-willed, and determined, and probably few people become great musicians or athletes without a reasonably high level of this trait. This domain is positively associated with academic and occupational achievement. People high in this domain are scrupulous, punctual, and reliable. Low scorers are more lackadaisical in working toward their goals (p. 16).

The robustness of the five-factor model of normal adult personality (Digman, 1990; Goldberg, 1993; John, 1990) has attracted personnel psychologists and led them to apply Big Five measures to the field of personnel psychology (e.g., personnel

selection). It also has suggested to personnel selection researchers that the true predictive validity of certain personality traits for personnel selection was obscured in earlier research by the lack of a common personality framework such as the Big Five (Barrick & Mount, 1991; Hough, 1992; Landy, Shankster, & Kohler, 1994; Ones, Mount, Barrick, & Hunter, 1994). As a result of this emergence of the Big Five taxonomy, personnel selection researchers gained a renewed interest in evaluating the effectiveness of personality traits for predicting job performance. (e.g., Barrick & Mount, 1991; Ones, Viswesvaran, and Schmidt, 1993; Tett, Jackson, & Rothstein, 1991). Meta-analyses of the criterion-related validity of the Big Five for predicting job performance have provided encouraging results for personnel selection specialists (e.g., Barrick & Mount, 1991; Salgado, 1997; Tett et al., 1991).

Barrick and Mount's (1991) groundbreaking meta-analytic study investigated the predictability of the five dimensions for different occupations and across various criterion types. They used findings from 117 previous studies to test the relationship between the Big Five personality dimensions and performance. Their major finding was that Conscientiousness significantly predicted performance across all five job categories represented. In addition, Openness to Experience and Extraversion were significant predictors of trainees' performance during training across all job categories. Extraversion was also a valid predictor of managerial performance.

In a further meta-analytic investigation, Tett, Jackson, and Rothstein (1991) reported that validities for the Big Five dimensions of Openness to Experience and Agreeableness approach those for cognitive measures in predicting job performance

(e.g.,  $r = .27$  and  $r = .33$ , respectively) when researchers choose tests on the basis of a job analysis and focus on incumbents with reasonable job tenure. Furthermore, Ones et al. (1993) conducted a meta-analysis and found that integrity tests, composed largely of the Big Five dimensions of Conscientiousness and Neuroticism, significantly predict supervisors' ratings of job performance in a variety of settings. More recently, Salgado (1997) meta-analyzed data from the European Community which confirmed Barrick and Mounts' (1991) finding that Conscientiousness is a significant predictor of performance across a wide range of jobs. Lastly, in another meta-analysis, Hurtz and Donovan (1998) considered only studies utilizing personality tests designed specifically to measure the Big Five. Results indicated that Conscientiousness was the most valid predictor of job performance, supporting Barrick and Mount's (1991) conclusions. Thus, empirical research supports the contention that the Big Five personality dimensions do in fact predict job performance.

#### Measuring the Big Five: NEO-FFI

Historically, methods of personality assessment used in the field of personnel selection have often been psychometrically inadequate. This conclusion now seems more probable than the conclusion that personality data are simply not related to job performance (Gatewood & Feild, 1998). With the development of measures of the Big Five, there has been a great deal of research investigating the validity and utility of these measures for use in personnel selection.

There are a few different measures of the five central personality dimensions. None of them were designed exclusively for use in personnel selection. These

measures have many uses in applied and clinical settings (Costa & McCrae, 1992).

The ones most often used in personnel selection are the: 1) NEO- Five-Factor Inventory (NEO-FFI), developed by Costa and McCrae (1992); 2) Hogan Personality Inventory (HPI), developed by Hogan and Hogan (1992); and 3) Personality Characteristics Inventory (PCI), developed by Barrick and Mount (1991). The inventories mostly differ in the number of items, response format, completion time, and the number of defined subdimensions within each of the five main dimensions.

The NEO-FFI was used for the current study because it is most often used in personnel selection research (e.g., Chan, 1997; Schmit et al., 1995), and because of its high reliability and ease of administration. It reflects many years of research on the structure of personality in which the scales were developed and refined by a combination of rational and factor analytic methods (Costa & McCrae, 1992).

The NEO-FFI has been used in clinical settings (Costa, 1991) for help with diagnostics and counseling; adult development and well-being for assessing coping strategy effectiveness (McCrae & Costa, 1988); behavior medicine and health psychology for assessing correlates of somatic complaints (Costa & McCrae, 1987); vocational counseling for assessing career compatibility (Costa & McCrae, 1984); and in industrial/organizational psychology for personnel selection and classification (Barrick & Mount, 1991).

#### Frame-of-Reference (FOR) Effects and the Validity of Personality Measures

Hogan (1991) maintains that research on moderator variables has major implications for applied psychology, especially in the area of personnel selection and

appraisal. In addition, Cascio (1991) points out that there has been little attention paid to the various situational and individual difference variables that may affect the predictability of personality measures in selection. In fact, a number of moderators of the validity of personality measures have been proposed (Hogan, 1991). Snyder and Ickes' (1985) framework for thinking about moderator variables suggests that they can be sorted into four categories, which concern criteria, predictors, individuals, and situations.

For example, Barrick and Mount (1993) provide evidence that, much like problem solving requirements of a job moderate the relationship between intelligence and job performance, the degree of autonomy individuals perceive in a particular job (a situational variable) moderates the relationship between Conscientiousness and job performance. In addition, Self-Monitoring (an individual difference variable) also has been shown to be a moderator of personality test validity (Snyder & Ickes, 1985). Self-monitoring is described as the extent to which people observe, regulate, and control the appearance of self they display in social situations and interpersonal relationships (Kent & Moss, 1990).

In a related area of personality research, Mount, Barrick, and Strauss (1994) point out that an important issue for the use of personality inventories in personnel selection is the frame-of-reference (FOR) problem. Most personality inventories are designed such that individuals respond to items with an indication of their propensity to behave in a general way across situations. However, theory and empirical evidence suggest that, in the context of personnel selection, higher predictive validities can be

obtained if personality inventories are designed such that individuals respond to items with an indication of their propensity to behave, feel, and think in a work-related context (e.g., Hogan, 1991, Schmit et al., 1995).

For example, Wright and Mischel (1987) suggest that stable patterns of behavior are contingent on situational conditions; they labeled these tendencies "conditional dispositions." Thus, the power of personality inventories to predict behavior may be limited to a fairly specific range of situations. McCrae and Costa (1996) help put the notion into perspective by suggesting that, in order to make inferences about underlying traits, personality measures ask questions about manifestations of behavioral tendencies that are influenced by external factors. Thus, behavioral tendencies may be situation specific, even though the underlying trait they reflect is generally constant across time and situations. Therefore, general personality inventories may say little about applicants' behavior in a work situation because there is no specific FOR that applicants consider when responding to items. Accordingly, applicants who answer items as they relate to work may be providing information that is a better indication of actual job performance. As a result, providing the same FOR to all applicants may improve the predictive validity of personality inventories (Schmit et al., 1995). On the other hand, when personality measures do not provide a common FOR, applicants may use different frames-of-reference, thus, lowering the predictive validity of the personality inventory.

The self-presentation theory of personality-item response adds supporting evidence for framing personality tests in a work-related context. The self-presentation

view of item responses suggests that when responding to personality items, individuals present a slightly inaccurate image of themselves but one that is consistent with how they hope to be regarded by others; and some people are better than others at self-presentation (Hogan, 1991). Schmit et al. (1995) suggest that most personality tests used for personnel selection may introduce error into the self-presentation process because it is difficult for applicants to connect with a specific work context. Therefore, self-presentation theory suggests that greater face validity would increase test validity. In addition, Schmit et al. (1995) claimed that personality tests portrayed in a work-related context would facilitate self-presentation.

On the other hand, some researchers suggest that face valid personality tests would increase the potential for socially desirable responding, reducing the variability of responses, and subsequently reducing validity. However, empirical evidence indicates that socially desirable responding may not be a major problem in personnel selection contexts (Hough, Eaton, Dunnette, Kamp, & McCloy, 1990).

For example, in a lab study using college students as simulated job applicants and GPA as the criterion, Schmit et al. (1995) compared the validities of an altered FOR personality test and an unaltered FOR personality test. In addition, they explored the role played by social desirability and self-presentation effects on the criterion-related validities. Schmit et al. contended that both socially desirable responding and FOR confusion should lead to greater error variance in the prediction of a criterion by a personality test. To reduce FOR confusion, they altered the frame of reference by modifying personality scale items on the NEO Five-Factor Inventory to reflect the

context of a job, and by giving job-applicant instructions to participants. The job-applicant instructions indicated that participants were to complete the inventory as if they were applying for a customer service job.

As predicted, the criterion validity of the personality test with the altered FOR was greater in magnitude ( $r = .46$ ) than the unaltered personality test ( $r = .25$ ). In addition, participants that received altered items and applicant instructions had more positive scale scores than participants who received unaltered items and general instructions (Schmit, et al., 1995). Thus, these findings (i.e., the FOR personality test having greater criterion validity than the unaltered personality test) suggest more support for the conditional disposition and self-presentation hypotheses than for the social desirability hypothesis.

However, Schmit et al. (1995) used college students as participants, and did not use job performance as a criterion. This dissertation addressed this issue by using actual managers and job performance criteria. However, similar results were expected. That is, I hypothesized that a personality inventory framed in the context of work will lead to higher scale validities than one that is not.

Finally, the proposition that the consequence of job applicants who use different self-generated frames of reference (i.e., not all applicants referencing an "at work" context) increases error of prediction was supported by Schmit et al. (1995) but not fully explained. As they point out, a portion of the error is likely to be explained by a moderator variable. A moderator variable, such as self-monitoring, may provide insight into why applicants use different frames of reference when completing general

personality tests. Given a non-context-specific personality test, high self-monitors may be more likely to use work-related experiences to respond to items than low self-monitors. However, Schmit et al. (1995) suggested that future research is needed to determine what moderators may be responsible.

Similarly, applicant reactions (i.e., test fairness perceptions) could also moderate the validity of personality tests. For example, it is possible that the FOR of a personality test may affect applicant attitudes or fairness perceptions toward the test. In addition, perceived unfairness or low face validity may lower motivation to perform well on a test (Schmit & Ryan, 1992) which in turn could result in biased scores and reduced validity. Consequently, differences in applicant reactions may help explain validity differences obtained by using an altered FOR personality test and a personality test that does not refer to a particular FOR. Thus, it seems appropriate to investigate how perceptions of procedural fairness may play a role in the validities of each form of a personality inventory. Applicant reaction issues are discussed in the following chapter.

## CHAPTER IV

## Applicant Justice Perceptions in Personnel Selection

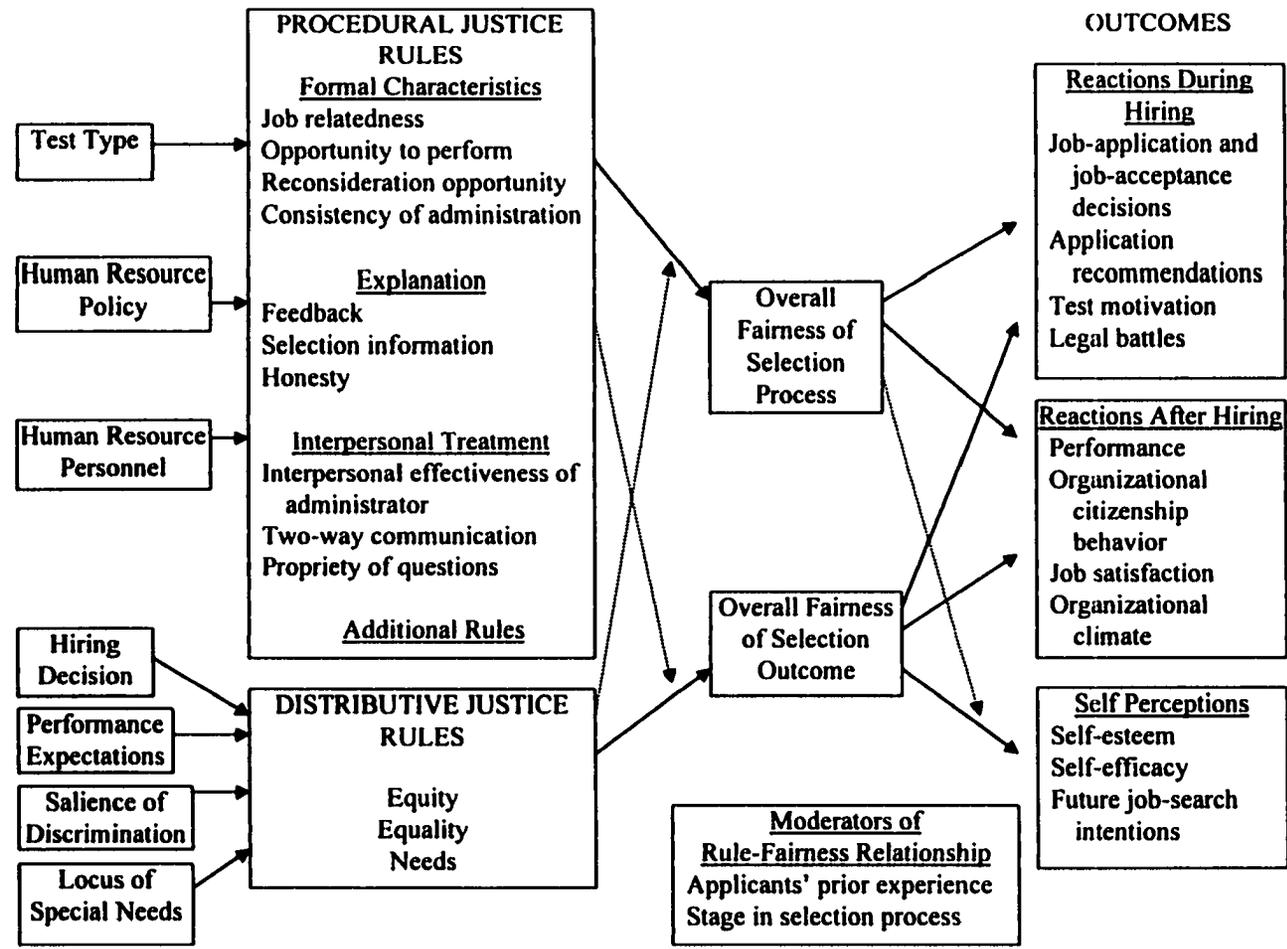
Due to a number of factors (e.g., labor market, economy), attracting and retaining competent employees is becoming increasingly difficult for organizations. In addition, more than a third of Americans have unfavorable attitudes toward pre-employment testing (Schmit & Ryan, 1992). In spite of these facts, the justice perceptions of applicants to selection testing, and their possible effects, are often overlooked by organizations (Gilliland, 1993). Many organizations fail to realize that the selection process is not only an opportunity for them to evaluate applicants, but also an occasion for applicants to gather information and form opinions about the organization. Until recently, there has not been a substantial amount of research activity that investigated the formation of applicant fairness perceptions or the effects that they may have on important organizational outcomes. However, it is becoming increasingly recognized that applicants' perceptions of test fairness are important from business, ethical, and legal perspectives.

Recent research has provided evidence that applicant fairness perceptions differ based on the characteristics of the selection system and that these perceptions affect organizational outcomes such as job acceptance intentions, organizational commitment, and job satisfaction (e.g., Bauer, et al., 1998a; Chan & Schmitt, 1997; Gilliland, 1995; Kravitz, Stinson, & Chavez, 1996; Macan, Avedon, Paese, & Smith, 1994; Smither, Reilly, Millsap, Pearlman, & Stoffey, 1993; Truxillo & Bauer, 1999). In some of the earliest research concerning reactions to selection methods, Schmidt,

Greenthal, Hunter, Berner, and Seaton (1977) explored reactions to job sample tests and content valid written achievement tests. Using a sample of currently employed machinists, they found that these workers perceived job sample tests as fairer, clearer, and more appropriate in difficulty level than a written test. Later, Cascio and Phillips (1979) assessed applicant attitudes towards selection methods and found that content valid performance tests were well received and perceived as more face valid than content valid, paper-and-pencil tests. However, until recently, there was no theoretical framework to describe the antecedents to applicant justice perceptions and the possible organizational outcomes (Gilliland, 1993). Organizational justice theory provides that framework (e.g., Gilliland, 1993; Greenberg, 1990) and will be used in the present study to form hypotheses regarding fairness perceptions of selection methods and possible effects on test validity.

Organizational justice theory was conceived as a framework for examining fairness involved organizational procedures and their outcomes (Gilliland, 1993). It is concerned with the fair treatment of people in organizations where there are often competing goals and objectives. For example, organizational justice theory has been used to explain fairness perceptions of individuals with regard to organizational practices such as performance appraisals (Greenberg, 1986) and selection and classification (Gilliland, 1993). There are a few other applicant reaction models that also use organizational justice theory (e.g., Arvey & Sackett, 1993; Schuler, 1993), but Gilliland's (1993) model is the most clearly elaborated and dominates the personnel selection literature.

In the case of personnel selection, applicants are in the role of seeking employment, and the organization is in the role of offering employment to some and denying it to others. The outcome of the selection decision and the selection process itself can both be questioned in terms of fairness. Organizational justice has been conceptualized from two main perspectives: 1) distributive justice, or the fairness of organizational outcomes, results, or ends achieved; and 2) procedural justice, or the fairness of procedures used to achieve the results (Gilliland, 1993). In other words, distributive justice has to do with applicants' perceptions of outcome satisfaction, and procedural justice concerns perceptions of process satisfaction. Gilliland's (1993) model (Figure 4) describes the roles of distributive and procedural justice in the context of personnel selection and illustrates how components of both combine to form fairness perceptions and affect outcomes.



**Figure 4.** A model of applicants' reactions to employment selection systems. Adapted from Gilliland, S. W. (1993). The perceived fairness of selection systems: An organizational justice perspective. *Academy of Management Review*, 18(4), p. 699.

Distributive justice is guided by values which refer to rules or standards by which judgments of fairness are made (Deutsch, 1975). According to Gilliland's (1993) model, applicants' perceptions of distributive justice are determined by the three distributive rules, equity, equality, and needs, and are influenced by hiring decisions, performance expectations, salience of discrimination, and applicants' special needs. The equity distributive rule maintains that the relative justice of an outcome is assessed by comparing one's input and obtained outcomes to the inputs and outcomes of a referent comparison other (Adams, 1965). In other words, the equity rule states that people should receive rewards that are commensurate with the contributions they bring to a situation. Inequitable perceptions produce negative emotions and attitudes, which consequently motivate individuals to regain equity by changing their behavior or distorting their cognitions associated with perceptions of unfairness (Adams, 1965). The equality distributive rule states that all individuals should be rewarded equally regardless of inputs (Deutsch, 1975). This implies that rule violations occur when decisions are based on something other than chance, such as ability. The needs distributive rule states that rewards should be based on the relative needs of those involved (Deutsch, 1975). In this sense, selection decisions would violate the needs distributive justice rule when decisions take into account something other than the relative employment needs of applicants. Equity is thought to be the primary distributive rule for judging distributive justice (Gilliland, 1994; Gilliland & Haptonstahl, 1995). However, in situations where there is apparent discrimination or special needs of applicants, the equality and needs distributive rules should also

contribute to fairness evaluations of test outcomes and hiring decisions (Gilliland, 1993). Furthermore, these may conflict in circumstances where more than one rule is being used to evaluate outcome fairness.

Procedural justice concerns the perceived fairness of policies and procedures used in making decisions (Gilliland, 1993). Accordingly, Gilliland's (1993) model states that applicants' perceptions of procedural justice are determined by 10 procedural justice rules, which are organized within three main procedural justice components: (1) formal characteristics of procedures, (2) explanation of procedures and selection decisions, and (3) interpersonal treatment (see Figure 2). In addition, each of these components is affected by judgments of procedural rule violation as determined by the selection method, human resource policy, and the behavior of human resource personnel, respectively. The extent to which these rules are satisfied or violated combine to form an overall evaluation of the fairness of the selection process. Thus, more than one of the procedural justice components might contribute to the perception of a "fair" selection process.

The following is a brief description of the 10 procedural justice rules described by Gilliland (1993). The formal characteristics procedural justice component contains four of the ten procedural justice rules. The first procedural justice rule is (1) job relatedness of selection methods, which refers to the extent to which a test either appears to measure content relevant to the job or appears to be valid. This rule is thought to have the greatest procedural influence on fairness perceptions. As seen in the present findings these two constructs act differently on important outcomes (i.e.,

test-taking self-efficacy, test performance). (2) Opportunity to perform is the second procedural justice rule (also known as “voice”), which suggests that procedures are perceived to be more fair if recipients of the decision outcome have the opportunity to express themselves prior to the decision. This can be interpreted as having adequate opportunity to demonstrate one’s knowledge, skills, and abilities in the testing situation (Arvey & Sackett, 1993), and the possibility of exerting some control in a selection situation (Schuler, 1993). (3) Reconsideration opportunity, or the opportunity to challenge or modify the decision-making evaluation process also contributes to perceptions of procedural justice. (4) Consistency of administration refers to ensuring that decisions procedures are consistent across people and over time (e.g., test content, scoring, and score interpretation).

The explanation of procedures and selection decisions procedural justice component contains three procedural justice rules. (5) Feedback refers to the extent to which feedback is given, the content of the feedback (e.g., testing results), and even the way in which feedback is given (e.g., in writing). The interaction of what is said and how it is said is often referred to as interactional justice (Tyler & Bies, 1990). (6) The selection information rule refers to the extent to which information on such things as the validity of the selection system, the way scores are produced and used, and justification for a particular decision is provided to the applicants. (7) The honesty procedural justice rule refers to applicants’ perception of trust and straightforwardness of the test administrators.

The interpersonal treatment procedural justice component contains three procedural justice rules. (8) The interpersonal effectiveness of administrators refers to the degree to which applicants are treated with warmth and respect. (9) Two-way communication refers to the opportunity for applicants to offer input or to have their view considered in the selection process with regard to interpersonal interaction. (10) Propriety of questions refers to the extent of improper questioning and prejudicial statements.

Gilliland (1993) suggests that, in addition to the procedural justice rules, there may be two other factors that help capture variance in perceptions of procedural fairness but that have no ties to organizational justice theory. First, self-presentation (i.e., ease of faking) refers to the extent to which applicants believe that the information they provide in the selection process can be distorted in a socially desirable manner. However, it is not quite clear how this may influence fairness reactions (Arvey & Sackett, 1993). The second additional factor is invasiveness of questions or invasion of privacy, which implies that the intrusiveness of a selection procedure may influence applicants' reaction to that procedure. Gilliland (1993) suggest that both test type and the way it is implemented can have an impact on perceived invasion of privacy.

Finally, the model illustrates the influence of process and outcome fairness perceptions on individual and organizational outcomes. Generally, appraisals of procedural justice rules relate to perceptions of process fairness, which in turn relate to prehire and posthire applicant intentions, self-perceptions, and behavior (Ployhart &

Ryan, 1998). Appraisals of distributive justice rules are related to perceptions of outcome fairness, which in turn are related to posthire intentions, self-perceptions, and behavior (Gilliland, 1993; Ployhart & Ryan, 1998). In addition, outcomes consist of variables common to both accepted and rejected applicants (e.g., job-application decisions, test motivation, self-esteem, self-efficacy, endorsement of the company), variables specific to accepted applicants (e.g., job acceptance intentions, job satisfaction, performance, organizational citizenship behavior, organizational climate), and an outcome variable specific to rejected applicants (future job-search intentions).

There has been some debate regarding how justice components are related and how they may combine or interact to form overall fairness perceptions (Greenberg, 1986). Some research provides empirical evidence that process and outcome fairness perceptions are correlated (Brockner & Wiesenfeld, 1996; Greenberg, 1986), and that they interact to affect overall fairness perceptions, attitudes, behaviors (Gilliland, 1994; Greenberg, 1987), and possibly test validity (Schmit and Ryan, 1992; Smither et al., 1993).

### Reactions to Selection Methods

Although there are other applicant reaction models that also use organizational justice theory (e.g., Arvey & Sackett, 1993; Schuler, 1993), Gilliland's (1993) model has become the dominant framework for research on applicant perceptions of test fairness and has led to greater understanding of the effect that justice violations have on perceptions of unfairness and other negative test reactions. Findings from test reactions studies are generally consistent with the justice perspective and have,

therefore, supported the tenets of Gilliland's (1993) model (e.g., Gilliland, 1994; 1995; Gilliland & Beckstein, 1996; Ryan, Greguras, & Ployhart, 1996). There is a good deal of investigation outlining the impact that procedural rules have on overall perceptions of selection process fairness. For example, Smither et al. (1993) found that applicant test fairness perceptions are influenced by job relevance perceptions of the test, which is one of the formal procedural justice rules proposed by Gilliland (1993). In addition, a substantial body of empirical evidence indicates that the type of selection test influences applicants' perceptions of procedural justice, represented by rules such as job relevance, opportunity to perform, consistency of administration, feedback, and propriety of questions (e.g., Chan, et al., 1997; Gilliland, 1995; Kravitz, Stinson & Chavez, 1996; Macan et al., 1994; Smither et al., 1993). Generally, with the exception of some video-based tests (Stees & Turnage, 1992; Truxillo & Hunthausen, 1997), simulations such as work sample tests and assessment centers have been found to be perceived as more job relevant and fair than paper-and-pencils tests, such as personality inventories, cognitive ability tests, and biodata questionnaires (Chan & Schmitt, 1997; Cascio & Phillips, 1979; Kravitz et al., 1996; Macan et al., 1994; Smither et al., 1993; Rynes & Connerly, 1993; Schmidt et al., 1977). In addition, a few field studies (e.g., Gilliland, 1995; Macan et al., 1994; Smither et al., 1993) have corroborated findings from lab studies, which used college students and written descriptions of selection methods to obtain applicant reactions (e.g., Kravitz et al., 1996; Rynes & Connerly, 1993). Thus, a review of the literature suggests that applicants generally evaluate selection instruments with obviously high psychological

and physical fidelity (i.e., content validity) more positively than measures with no obvious relatedness to the job, such as paper-and-pencil biodata questionnaires. Consequently, this research supports Gilliland's (1993) contention that test type influences applicants' perceptions of individual procedural justice dimensions and the overall fairness of the selection system process.

### Reactions to Personality Tests

Because personality measurement in selection is typically done with paper-and-pencil methods and may not be perceived by applicants as having high fidelity to job content (Rynes & Connerly, 1993), it follows that it would not be viewed as favorable as other selection instruments. For instance, Smither et al. (1993) found that managers judged personality, biodata, and cognitive tests with abstract item types to be less face valid than simulations, interviews, and cognitive tests with concrete item types. Rynes and Connerly (1993) also found a personality inventory to be viewed less favorably than oral and written simulations. More recently, Kravitz et al. (1996) conducted a lab study using students and found that a personality test was seen as less fair and job relevant than an interview, work sample test, job skills test, drug test, and a cognitive ability test. However, Chan (1997) also conducted a lab study and reported that college students perceived a personality measure as more predictive of future performance than a cognitive ability test.

There are many possible explanations for the contradictory evidence. One explanation is that these tests have very different formats and different personality tests and cognitive ability tests may elicit different applicant reactions. Thus, it is

reasonable to consider that various personality tests may also differ on perceived job-relatedness. No study has investigated the potential differences in applicant reactions and fairness perceptions of different personality tests. Thus, it seems appropriate to investigate how applicants' perceptions of fairness may differ based on different forms of a personality test. The current study investigated potential differences in fairness perceptions of different forms of a personality inventory: An altered personality inventory reflecting a more "at work" context, and an unaltered version of the personality inventory. Regarding Gilliland's (1993) model, it was expected that two types of personality tests would differ in procedural justice perceptions of job relatedness, opportunity to perform, propriety of questions, and self-presentation.

#### Effects of Reactions to Selection Methods

As Gilliland's (1993) model suggests, applicants' fairness perceptions of the selection process outcome are proposed to affect numerous personal and organizational outcomes. However, Gilliland (1993) maintains that procedural justice and the fairness of the selection process will be more strongly related to these outcomes than will distributive justice or the fairness of the selection outcome. Accordingly, research has shed light on how applicant reactions towards the selection process affect outcomes such as organizational attractiveness, organizational commitment, work motivation, job performance, and the willingness of applicants to recommend the organization to others (e.g., Bauer et al., 1998a; Gilliland, 1995; Kravitz et al., 1996; Macan et al., 1994; Smither et al., 1993). For example, Smither et al. (1993) linked general civil service job applicants' reactions and subsequent justice

perceptions with perceptions of organizational attractiveness and willingness to recommend the employer to others. They found that applicants' willingness to recommend the employer was most strongly predicted by likelihood of improvement in test scores, affect toward the selection test, and perceived predictive validity. In addition, face validity perceptions, affect toward the selection method, and likelihood of improvement of test performance were closely related to organizational attractiveness. In a similar study, Macan et al. (1994) investigated the relationship between applicants' reactions to a cognitive ability test and an assessment center with attitudes toward the organization. They found that applicants who viewed the selection methods more favorably were also more satisfied with the selection process, the job, and the organization. Face validity and fairness perceptions for both testing methods predicted satisfaction with the process, whether they liked the job, and organizational attractiveness. In addition, liking the job and organizational attractiveness accounted for a significant amount of variance in job acceptance intentions. More recently, Bauer, et al. (1998a) used a longitudinal design to assess applicant reactions of actual job applicants of an entry-level accounting job. They found that after controlling for pre-test perceptions, procedural justice perceptions predicted applicants' evaluations regarding the organization (e.g., organizational attractiveness, recommending others to apply), and general perceptions of employment testing fairness.

In addition, it has been suggested that negative applicant perceptions of selection procedures may increase the likelihood of legal action and reduce the success

of defending selection instruments (Chan et al., 1997; Kravitz et al., 1996, Seymour, 1988). Thus, desirable outcomes for the organization may occur if applicants perceive the selection process to be fair. Rynes and Connerly (1993) point out that due to the increased use of various selection procedures (e.g., physical ability tests, personality inventories, assessment centers, etc.) the need to assess applicant attitudes concerning these procedures is critical. Overall, researchers maintain that organizations that understand applicant attitudes toward selection procedures may be better suited to attract and retain high quality applicants, and in turn achieve better performance, higher profits, and more favorable organizational climates (Chan et al., 1997; Gilliland, 1995; Kravitz et al., 1996; Macan et al., 1994).

#### Effect of Reactions and Predispositions on Test Validity

Smither et al. (1993) maintain that applicant reactions and procedural justice perceptions may indirectly affect the criterion-related validity and utility of selection tests. Test-taking motivation and test-taking self-efficacy are two rationales for explaining this assertion. Test-taking self-efficacy is the belief that one can be successful in the employment-testing context. Evidence indicates that test-taking self-efficacy and motivation are related to subsequent test performance (Chan et al., 1997; Gist & Mitchell, 1992). Gilliland (1993) contends that the perceived fairness of selection measures may have an impact on motivation, self-efficacy, and performance during the selection process.

Perceived unfairness or low face validity may lower motivation to perform well on a test (Schmit & Ryan, 1992) and may reduce test-taking self-efficacy (Gilliland,

1994; Bauer et al., 1998a), which, in turn, could result in biased scores and reduced operational validity of the procedure. In a lab study using college students as applicants, Gilliland (1994) found that perceptions of procedural justice were positively related to self-efficacy. Furthermore, Bauer et al. (1998a) studied actual applicants for an entry-level accounting job and found that procedural justice perceptions predicted test-taking self-efficacy. Evidence also suggests that negative applicant reactions to selection procedures (e.g., perceived lack of job relatedness) can reduce test-taking motivation (Chan et al., 1997), and that applicant reactions may be positively related to test performance (Smither et al., 1993). In addition, Chan et al. (1997) found that the relationship between validity perceptions of a cognitive ability test and test performance was mediated by test-taking motivation.

Researchers have proposed that test-taking dispositions (e.g., test-taking self-efficacy and motivation) are moderators of selection test validity (Arvey et al., 1990; Schmit & Ryan, 1992; Smither et al., 1993). In predictive and concurrent validation studies, Arvey et al. (1990) investigated the relationship between test takers' attitudinal dispositions and test performance, and possible validity moderating effects of test-taking motivation. They found that test motivation was positively related to test performance, but did not find evidence that test motivation predicted job performance or moderated the relationship between selection tests and job performance. However, they only tested validity moderating effects of test-taking motivation with ability tests using a relatively small sample of 69 incumbents, and only used task performance as the criterion.

Schmit and Ryan (1992) note that personality tests may be more susceptible to motivational influence than ability tests due to the fact that personality inventories measure typical performance and ability tests measure maximal performance. They investigated the effects of test-taking dispositions of an ability test and personality test on criterion-related validity, and found that test-taking dispositions and motivation moderated test validity for both tests. However, the moderating effect was exactly opposite for the two types of measures. The criterion-related validity of the personality test was higher for a subsample with less positive test-taking motivation than for a subsample with higher test-taking motivation. Furthermore, the criterion-related validity of the ability test was lower for a subsample with less positive test-taking motivation than for a subsample with higher test-taking motivation. However, this was a lab study in which college students voluntarily participated, and G.P.A. was used as the criterion. In addition, the California Personality Inventory (CPI) was used as the personality test, which was not designed to measure of the Big Five. Thus, it is reasonable to consider that different findings may be obtained using a Big Five personality measure in a more natural setting.

### Summary

A review of the relevant literature reveals that no research has investigated the effects that procedural fairness perceptions may have on criterion-related validity of cognitive ability tests or personality inventories. Thus, it seems appropriate to investigate how procedural fairness may play a role in the validity of both cognitive ability tests and personality inventories, which have shown to have more unfavorable

applicant reactions than other predictor types. However, due to methodological constraints of a concurrent validation design, only a limited number of Gilliland's (1993) 10 procedural justice factors are relevant to the current investigation.

Specifically, some procedural justice factors are not applicable when study participants are current employees and not applicants. Thus, the four most appropriate for this investigation are: (1) Job relatedness: participants' belief of test-job relatedness, (2) opportunity to perform: participants' chance to perform by showing relevant abilities during testing, (3) propriety of questions: the extent of improper questioning and prejudicial statements, and (4) self-presentation: the extent to which applicants believe that information they provide can be distorted in a socially desirable manner.

Procedural justice theory and some related empirical research suggests that more positive applicant reactions will lead to higher validity coefficients. However, the results of Schmit and Ryan (1992) found the opposite effect of test-taking motivation on personality test validity. Therefore, the present study explored the moderating effects of perceived procedural fairness on personality test validity, but in no particular direction.

Finally, as shown by Schmit, et al., (1995), criterion-related validity of a personality measure can be affected by altering its FOR. Although their findings suggest enhancements to personality measurement, there was no empirical evidence identifying the underlying cause. Schmit et al. (1995) suggested that future research is needed to help explain their results and possibly find evidence of a moderator. It is reasonable to suggest that procedural justice could be a moderator that helps explain

their findings. It was expected that procedural justice perceptions of the FOR NEO-FFI would be more favorable than applicant reactions to the standard NEO-FFI in terms of job relatedness, opportunity to perform, propriety of questions, and self-presentation. In addition, it was expected that applicant reactions would moderate the validity of the personality inventory, and consequently provide an explanation for the validity difference between the FOR personality inventory and the standard personality inventory.

## CHAPTER V

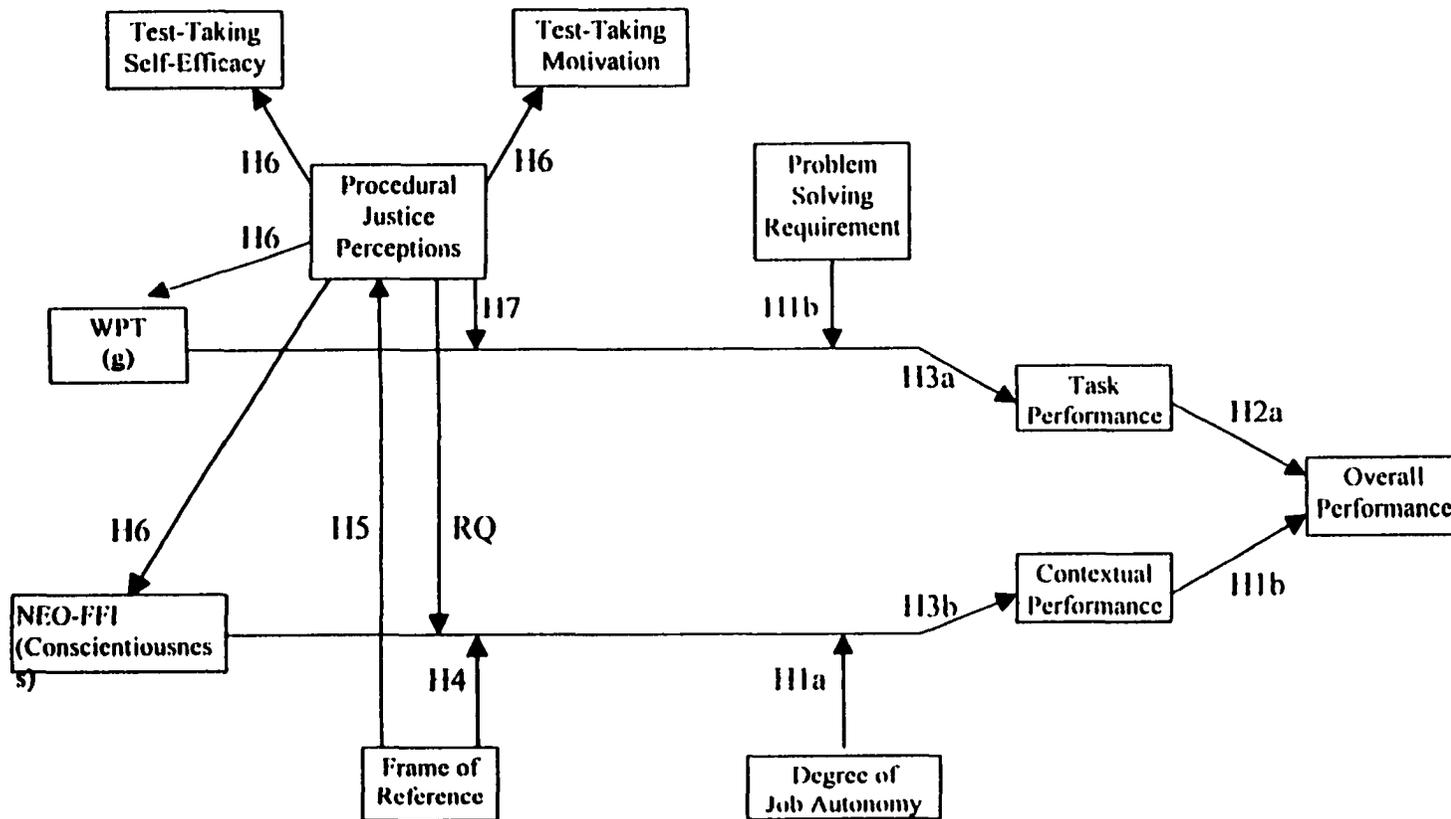
## Hypotheses

This dissertation sought to confirm Motowidlo and Van Scotter's (1994) findings in a different context and provide support for Borman and Motowidlo's (1993) contention that cognitive ability is an antecedent of task performance. Specifically, the dissertation undertook to show that overall managerial job performance is a function of task and contextual performance. In addition, it undertook to show that personality is an antecedent to contextual performance and cognitive ability is an antecedent to task performance; a finding that was not fully supported by Motowidlo and Van Scotter (1994). In addition, Motowidlo and Van Scotter (1994) collected data from Air Force personnel in one particular job. This dissertation research sought to add support for their theory of job performance in a non-military setting with entry-level managers.

Second, the dissertation used data from a field setting to confirm Schmit et al. (1995) findings regarding the effect of FOR on the validity of a personality test. Schmit et al. found that FOR affects the validity of a personality test, but they used college students as participants and G.P.A. as the criterion. This dissertation research used predictor and criterion data from actual job incumbents.

Next, the dissertation research examined whether a more context-specific personality test (i.e., FOR) leads to greater perceived procedural justice, which has never been investigated in previous research. This would demonstrate that FOR personality tests affect applicant reactions differently from non-FOR tests.

Lastly, the dissertation research explored whether perceived fairness of a cognitive ability test and personality test affects their validity. Although previous research has shown that perceived fairness is related to various outcomes (e.g., test performance, acceptance intentions), no research has investigated the effect of perceived fairness on test validity. Figure 5 illustrates the hypotheses tested.



**Figure 5.** Hypotheses and research question examined in this study.

First, the moderating effects that perceived job autonomy and perceived problem solving requirement of a job might have on the criterion-related validity of Conscientiousness and cognitive ability were investigated. For example, a higher degree of perceived job autonomy should lead to greater criterion validity of Conscientiousness (Barrick & Mount, 1991). Likewise, a higher degree of perceived problem solving requirement of a job should lead to greater criterion validity of cognitive ability (Schmidt & Hunter, 1992).

Hypothesis 1a: Perceived job autonomy will moderate the relationship between Conscientiousness and contextual performance, such that there will be a more positive relationship between Conscientiousness and contextual performance when job autonomy is high.

Hypothesis 1b: Perceived problem-solving requirement of the job will moderate the relationship between cognitive ability and task performance, such that there will be a more positive relationship between cognitive ability and task performance when problem-solving requirement is positive.

The next research objective was to examine the empirical evidence to determine the degree of support for Motowidlo, Borman, and Schmit's (1997) theory of job performance. First, overall job performance was examined to determine whether it is a function of both task and contextual performance. It was expected that task and contextual performance would separately influence ratings of overall performance. Specifically, I expected that in hierarchical regression analyses, contextual performance would account for a significant amount of variance in overall

performance that was not accounted for by task performance, and vice-versa. These results to some degree replicate the findings of Motowidlo and Van Scotter (1994), but in a different setting.

Hypothesis 2a: Task performance will explain a significant amount of variance in overall performance beyond that explained by contextual performance.

Hypothesis 2b: Contextual performance will explain a significant amount of variance in overall performance beyond that explained by task performance.

Next, Motowidlo, Borman, and Schmit's (1997) contention that there are different antecedents or predictors of each performance dimension was examined. Data were analyzed to determine whether personality scales (e.g., Conscientiousness) explain more variance in contextual performance than in task performance, and whether cognitive ability explains more variance in task performance than in contextual performance, subsequently confirming the findings of Motowidlo and Van Scotter (1994). Because Conscientiousness has been shown to generalize across jobs as a predictor of job performance (Barrick & Mount, 1991; Hertz & Donovan, 1998; Tett et al., 1991), it was the only personality dimension included in the hypotheses. Specifically, the correlation between Conscientiousness and contextual performance was expected to be greater in magnitude than the correlation between Conscientiousness and task performance. In addition, the correlation between cognitive ability and task performance was expected to be greater than the correlation between cognitive ability and Conscientiousness. Similar relationships were explored

between the other four dimensions of the Big Five (i.e., Neuroticism, Extraversion, Agreeableness, Openness to Experience) and task and contextual performance.

Hypothesis 3a: Cognitive ability will have a larger validity coefficient (correlation) with task performance than will Conscientiousness.

Hypothesis 3b: Conscientiousness will have a larger validity coefficient (correlation) with contextual performance than will a cognitive ability measure.

The next research objective was to determine whether empirical evidence is consistent with predictions made by conditional disposition and self-presentation theories when altering the frame-of-reference (FOR) of a personality measure. Specifically, Schmit et al. (1995) claimed that providing all applicants with a specific FOR (i.e., an at-work context) for a personality test will lead to higher criterion validities because a) it provides a specific and consistent situation (i.e., at work) where individuals are posited to be more predictable than they would be across all situations; and b) it facilitates self-presentation, such that all applicants will be able to focus on particular behaviors relevant to a work context, thereby reducing error variance.

However, unlike Schmit et al. (1995) who examined data from students and used G.P.A. as the criterion, the present dissertation research examined possible FOR effects on personality-predictor validity using Conscientiousness as the predictor and contextual performance of managerial employees as the criterion. Specifically, data were analyzed to determine whether framing a personality inventory in the context of work yields a higher validity coefficient (correlation), consequently supporting the conditional disposition and self-presentation theories. It was expected that the FOR

personality inventory would account for more variance in contextual performance than the standard personality inventory.

Hypothesis 4: The magnitude of the correlation between a FOR Conscientiousness measure and contextual job performance will be greater than the magnitude of the correlation between a standard Conscientiousness measure and contextual job performance.

The remainder of the hypotheses pertains to applicant reactions to the selection measures and their possible validity-altering effects. First, consistent with Gilliland's (1993) model, it was expected that FOR would influence procedural justice perceptions of a personality test. In other words, I expected the FOR personality inventory and the standard personality inventory to differ in the procedural justice perceptions of applicants. Moreover, the findings from this study were expected to be similar to those of previous studies which show that selection measures with high fidelity to job content are perceived as more fair (e.g., Rynes & Connerly, 1993). Specifically, when compared to the standard version of a personality inventory, the FOR personality inventory, reflecting a more "at work" context, would be perceived by entry-level managers as: 1) more job-related, 2) providing a greater opportunity to show relevant characteristics; and 3) having a lesser degree of improper questioning and prejudicial statements. Self-presentation that participants have with regard to both versions of a personality test were also be explored.

Hypothesis 5: Procedural justice perceptions of a FOR personality test will be more positive than procedural justice perceptions of a standard personality

test in terms of job relatedness, opportunity to perform, propriety of questions, self-presentation, and overall procedural fairness.

Next, the relationships that procedural justice perceptions (i.e., applicant reactions) may have with test-taking motivation, test-taking self-efficacy, test performance, and criterion validity were investigated. Previous research has discovered that positive fairness perceptions of selection measures may have a positive impact on these variables (e.g., Arvey et al., 1990; Bauer et al., 1998a; Chan, 1997; Chan et al., 1997; Gilliland, 1994; Schmit & Ryan, 1992; Smither et al., 1993). For example, face validity perceptions of a cognitive ability test have been shown to be positively related to test-taking motivation (Chan et al., 1997), and test-taking motivation has been shown to be positively related to performance on a cognitive ability test (Arvey et al. 1990; Chan et al., 1997). Furthermore, Chan (1997) and Smither et al. (1993) found that predictive validity perceptions also were positively related to cognitive ability test performance. In addition, Bauer et al. (1998a) and Gilliland (1994) found that procedural justice perceptions were positively related to test-taking self-efficacy. Lastly, Schmit and Ryan (1992) investigated the effects of test-taking motivation on the criterion validity of an ability test and personality test. They found that the criterion-related validity of the cognitive ability test was higher for participants with more positive test-taking motivation. Thus, Gilliland's (1993) propositions that there are positive relationships between procedural justice and these outcomes (i.e., test-taking self-efficacy, test-taking motivation, test performance, and test validity) seems to be true, at least for cognitive ability tests. However, Schmit and

Ryan (1992) only examined the validity-moderating effects of test-taking motivation, and their results were obtained with data from undergraduate college students who completed a personality test that was not a measure of the Big Five. On the other hand, the current investigation examined the effects that procedural justice perceptions may have on these variables (i.e., test-taking motivation, test-taking self-efficacy, test performance, and criterion validity) in a field setting.

In sum, procedural justice theory (Gilliland, 1993) and empirical evidence (Arvey et al., 1990; Bauer et al., 1998a; Chan, 1997; Chan et al., 1997; Gilliland, 1994; Schmit & Ryan, 1992; Smither et al., 1993) suggests that procedural justice perceptions of a cognitive ability test will be positively related to test-taking motivation, test-taking self-efficacy, test performance, and criterion validity. Thus, it was expected that these relationships would also be found in the current investigation. In addition, because task performance was expected to be more related to cognitive ability, it was the criterion used to examine the potential moderating effect of perceived procedural fairness on cognitive ability test validity.

**Hypothesis 6: Procedural justice perceptions will be positively related to participants' test-taking motivation, test-taking self-efficacy, and both test performances.**

**Hypothesis 7: Procedural justice perceptions of a cognitive ability test will moderate the relationship between cognitive ability and task performance, such that there will be a positive interaction between procedural justice**

perceptions and cognitive ability when explaining variance in task performance.

However, unlike the findings for cognitive ability tests, the effects of applicant perceptions of a personality test on test validity are not as clear. In fact, the findings of Schmit and Ryan (1992) suggest that, compared to a cognitive ability test, positive applicant perceptions of a personality test may actually decrease its validity.

Therefore, the relationships between procedural justice perceptions of a personality test and test validity were explored, but no hypothesis about direction was stated.

Research Question: Do procedural justice perceptions moderate the relationship between a personality inventory and contextual job performance?

## CHAPTER VI

## Method

Power Analysis

First, a power analysis was computed to estimate the number of participants needed in order to detect the expected effect sizes of the hypothesized relationships. Generally, statistical power is considered the probability of obtaining a significant result, given a certain effect size and significance level (Kraemer & Thiemann, 1987). The effect sizes from research that examined multidimensional job performance and criterion validity of Conscientiousness and cognitive ability determined the effect sizes desired for the current study. However, since smaller expected effect sizes require more participants, only the smallest effect size of the relevant relationships was considered for determining the desired number of participants. For example, Schmit et al., (1995) report the validities of a FOR NEO-FFI and a standard NEO-FFI to be .46 and .25, respectively. Using Kraemer and Thiemann's (1987) formula for detecting differences between correlation coefficients, the effect size sought in the current study was .24. The number of participants was determined by considering a one-tailed test with a .05 significance level and a power set at 80%. Kraemer and Thiemann's (1987) Master Table approximates the number of participants needed to find significance with a variety of statistical tests, including correlation and regression. Therefore, this table was used to determine the number of participants needed for the present study. According to the Master Table, in order to detect a .24 effect size, with a power level set at 80%, using a one-tailed significance level of .05, 210 participants are needed.

### Participants

Participants were employees in an entry-level management position in a major U.S. airline. These Customer Service Managers work at various airports around the country and supervise union and non-union employees. Their major responsibilities are: 1) handling customer complaints and requests; 2) ensuring baggage gets loaded on the correct planes; and 3) ensuring on-time departure of planes. Customer Service Managers were informed about the study through their managers and they voluntarily participated.

Data were collected from 214 participants, with roughly half randomly assigned to each of the two study conditions: 1) those who receive the standard personality test ( $n = 108$ ); and 2) those who receive the FOR personality test ( $n = 106$ ). However, job performance data were unavailable for two individuals. Most participants (86%) worked for the airline at least five years and held the position of Customer Service Manager (CSM) for at least one year (87%). There were roughly equal numbers of males (54%) and females (46%). Most of the participants were Caucasian (55%), followed by Hispanic (23%), African American (12%), Asian/Pacific Islander (4%), and Native American (2%) individuals. In addition, only 36% had college degrees, and 61% had attended some college or had a two-year degree. Most had never taken the Wonderlic Personnel Test (96%) or the NEO personality inventory (95%).

## Measures

Personality. The NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) was the personality measure used in this study. The NEO-FFI is a measure based on the five-factor model of personality (Digman, 1990). The five factors of personality that the NEO-FFI measures are Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Each factor consists of twelve items that combine to yield a total instrument length of 60 items. Responses to each item are recorded on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Alpha internal consistency reliabilities for the five factors range from .68 to .81 (Costa & McCrae, 1992).

The two study conditions were defined by the administration of the NEO-FFI, such that roughly half of the participants were administered the inventory using the standard instructions while the other half were asked to complete the inventory with “at-work” instructions. Specifically, the FOR form of the NEO-FFI was established by adding the reference to work before and during the administration, a practice that has been suggested but remains untested (see Schmit et al., 1995). Applicants were instructed, orally and by an instruction sheet (see Appendix C), to think about how they are “at work” in general when responding to each statement. In addition, a reminder (“Remember, think about how you are AT WORK in general when responding to these questions”) was pasted at the top of both pages of the NEO-FFI test booklet. As a manipulation check, an item was added at the end of the test (# 61) asking them if they thought about how they are at work in general when responding to

the items (see Appendix C). All participants in the FOR condition indicated in their response to item #61 that they thought about how they are at work in general when responding to the items.

Cognitive ability. The Wonderlic Personnel Test (WPT; Wonderlic Personnel Test, Inc., 1992) was used for the measure of general cognitive ability. The WPT was first developed in 1938 and is still used widely today (Gatewood & Feild, 1998). It is a 12-minute timed test consisting of 50 multiple-choice and fill-in-the-blank questions. It incorporates a wide variety of problem types covering areas such as vocabulary, mathematical reasoning, perceptual relations, and clerical ability (Wonderlic Personnel Test, Inc., 1992). The questions include word comparisons, following directions, number comparisons, analysis of geometric figures, and story problems requiring mathematics or logic solutions (Wonderlic Personnel Test, Inc., 1992). In addition, test questions are arranged in order of ascending difficulty, beginning at a modest level and gradually increasing. The average item difficulty is such that 60% of test takers would answer the item correctly. The total score is the number of items answered correctly.

Test-retest reliabilities for the WPT range from .82 to .94 (Dodrill, 1983). Alternate form reliabilities range from .73 to .95, and internal consistency reliabilities range from .88 to .94 (McKelvie, 1989). Construct validity evidence indicates that the WPT measures much the same construct as other mental ability tests. For example, the WPT correlated .93 with the Wechsler Adult Intelligence Scale (Dodrill, 1981), and correlated .74 with the General Aptitude Test Battery (McCormick et al., 1989).

In addition, the WPT has been used in many selection programs which have been described in various journals (e.g., Chan, 1997; Hunter & Hunter, 1984).

Task performance. Task performance was measured by eight items that were adopted from currently used managerial job performance evaluation forms (see Appendix F). The items measure eight core technical competencies as identified by the organization: written communication skills, oral communication skills, organizational ability, negotiating skills, technical skills, quantitative skills, decision making ability, and analytical ability/problem solving. Each item was rated on a 5-point scale. The mean of the eight items formed the task performance score. The alpha reliability was .90. In addition, participants' self-rating of task performance was measured by one item specifically developed for this study.

Contextual performance. Contextual performance was measured by a 16-item instrument developed by Motowidlo and Van Scotter (1994; see Appendix F). The items were designed to tap dimensions of contextual performance identified by Borman and Motowidlo (1993). Each item was rated on a 5-point scale ranging from 1 = not at all likely, to 5 = extremely likely. The mean of the 16 items formed the contextual performance score. The alpha reliability for this scale was .96, which is similar to the alpha reliability (.92) reported by Motowidlo and Van Scotter (1994). In addition, participants' self-rating of contextual performance was measured by one item specifically developed for this study (see Appendix E).

Overall performance. Overall performance was measured by an instrument used by Motowidlo and Van Scotter (1994; see Appendices E and F). They developed

three scales, each with a different set of anchors at the high, moderate, and low ranges. One scale was anchored with high (5) = exceeds standards for job performance, moderate (3) = meets standards for job performance, and low (1) = does not meet standards for job performance. The second scale was anchored with high (5) = performs at a high level compared with others in the same job, moderate (3) = performs at an average level compared with others in the same job, and low (1) = performs at a low level compared with others in the same job. The third scale was anchored with high (5) = contributes more to the station (i.e., airport) effectiveness than most, moderate (3) = makes an average contribution to station effectiveness, and low (1) = contributes less to station effectiveness than most. The mean of the three scales formed the overall performance score. The alpha reliability was .88, which is slightly lower than the alpha (.96) reported by Motowidlo and Van Scotter (1994). In addition, participants' self-rating of overall performance was measured by one item specifically developed for this study.

Procedural justice. Overall procedural justice and three of the four procedural justice factors relevant to this study were measured by items from the Procedural Justice Scale (PJS) developed by Bauer et al. (1998b; see Appendices D and E). The PJS reliably measures reactions to Gilliland's (1993) 10 procedural justice rules. Overall procedural justice was measured by three items. As suggested by applicant reaction research (Bauer et al., 1998b; Smither et al., 1993), Job-Relatedness/content and Job-Relatedness/predictive were measured separately by two items each. Opportunity to Perform and Propriety of Questions were measured by five items each.

Alpha reliabilities for these scales ranged from .80 to .90, which is similar to the range of alphas (.83 to .93) reported by Bauer et al. (1998b). Self-presentation was measured by 5 items developed specifically for this study ( $\alpha = .75$  for the WPT,  $\alpha = .87$  for the NEO). The score on each of the procedural justice factors was their respective means.

Test-taking motivation. Test-taking motivation was measured by seven items adopted from the Test Attitude Survey (TAS) developed by Arvey et al. (1990; see Appendices B, D and E). The scale consisted of Likert-type items in which responses were made on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). The alpha reliabilities ranged from .94 to .95 for the different test, which were slightly better than the alpha (.85) reported by Arvey et al. (1990).

Test-taking self-efficacy. Test-taking self-efficacy was measured by three items adopted from Bauer et al. (1998a; see Appendices B, D, and E). The scale was developed following descriptions from Gilliland (1993). Alpha reliabilities ranged from .82 to .85 for the different tests.

Job autonomy. Job autonomy was measured by six items adopted from Hackman and Oldham (1976; see Appendix E). Responses are made on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). The alpha reliability was .81.

Problem solving requirement. Problem solving requirement was measured by three items specifically developed for this study (see Appendix E). Responses are made on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). The alpha reliability was .94.

Perceived test performance. Perceived test performance was measured by two items adopted from Sanchez et al. (in press; see Appendix D and E). Responses are made on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). The alpha reliabilities were .93 for WPT performance and .92 for NEO performance.

### Procedure

Testing sessions (roughly 45 minutes) were conducted at 16 different airport locations. Multiple testing sessions were held in some locations. Participants (i.e., incumbents) voluntarily attended one of the testing sessions.

Half of the testing sessions offered the FOR personality inventory administration, and the other half of the testing sessions offered the standard personality inventory administration. In addition, testing sessions were counterbalanced, such that half of the testing sessions offered the NEO-FFI first (FOR or standard) and half of the testing sessions offered the WPT test first.

At the beginning of each testing session, participants were given a brief overview of the study as described in a cover letter and in the informed consent form. They also were provided with a brief description of the two tests that they were asked to complete (see Appendix A). After the overview, sets of study materials were handed out to each participant. Each handout within the set of study materials had a number written at the top of the page. On a separate sheet of paper, participants were asked to print their name, their manager's name, and the number that appears on their testing material.

First, participants were administered the pre-test measure containing test-taking motivation and test-taking self-efficacy measures (see Appendix B). Next, participants were administered the NEO-FFI (FOR or standard) or the WPT. For the FOR NEO-FFI, participants received oral instructions on FOR and a one-page instruction sheet (see Appendix C). After the first test administration, participants were asked to complete the post-test 1 measure, which contained measures for: the four procedural justice factors, overall procedural justice, test-taking motivation, test-taking self-efficacy, and perceived test performance (see Appendix D). Participants' perceived test performance was measured after each test as a potential control variable in regression analyses.

Next, depending on what test was administered first, participants were administered the personality inventory (FOR or standard) or the WPT. After the second test administration, participants were asked to complete the post-test 2 measure, which contained measures for: the four procedural justices factors, overall procedural justice, test-taking motivation, test-taking self efficacy, perceived test performance, perceived job autonomy, perceived problem-solving requirement of the job, self-ratings of job performance (task, contextual, and overall), and demographic variables (i.e., tenure, gender, race, education; see Appendix E).

Finally, participants were also asked to provide self-ratings of job performance because of a concern for common-method variance. Specifically, I was concerned that the relationships among task, contextual, and overall performance could be a function of their being from one source, the supervisor. Multiple rater source analyses (i.e., self

and supervisor ratings) provide a more conservative test of hypotheses, as they reduce shared variance among the variables due to common-method. In addition, one item in both the post-test 1 and 2 measures asked participants if they have ever taken the particular test before (see Appendices D and E).

Within a day or two after a testing session, participants' supervisors were provided with job performance evaluation forms and cover letters describing the study. Supervisors rated participants on task, contextual, and overall performance (see Appendix F).

Table 4 provides an overview of the data collection process.

Table 4

An overview of the data collection process.

| Measures  | Pre-test<br>measure | First<br>Test | Post-test 1<br>measure | Second<br>Test | Post-test 2<br>measures |
|---|---------------------|---------------|------------------------|----------------|-------------------------|
| Test-taking self-efficacy   | X                   |               | X                      |                | X                       |
| Test-taking motivation  | X                   |               | X                      |                | X                       |
| NEO-FFI (standard or FOR)   |                     | X or          |                        | X or           |                         |
| Wonderlic   |                     | X             |                        | X              |                         |
| Individual dimensions of<br>procedural justice                              |                     |               | X                      |                | X                       |
| Overall procedural justice<br>fairness                                      |                     |               | X                      |                | X                       |
| Perceived test performance  |                     |               | X                      |                | X                       |
| Perceived job autonomy  |                     |               |                        |                | X                       |
| Perceived problem solving<br>requirement of the CSM job                     |                     |               |                        |                | X                       |
| Demographic questions<br>tenure, gender, race, &<br>education               |                     |               |                        |                | X                       |
| Self-ratings of job<br>performance<br>Task, Contextual, &<br>Overall        |                     |               |                        |                | X                       |
| Supervisory ratings of job<br>performance<br>Task, Contextual, &<br>Overall |                     |               |                        |                |                         |

Data on these measures were collected after participants completed the testing and questionnaires.

## CHAPTER VII

## Results

Means, standard deviations, alpha reliabilities, and intercorrelations of the primary research variables are presented in Table 5 at the end of this chapter.

Supplementary analyses revealed that sample means from cognitive ability and personality test scores were within one standard deviation of their respective normative means (Wonderlic Personnel Test, Inc., 1992; Costa & McCrae, 1992). Furthermore, there were only minor differences between sample and normative standard deviations (see Table 6). Therefore, there is little concern that the study sample was not representative of typical entry-level managers. In addition, all participants in the FOR condition indicated in their response to the appended question (item #61) that they thought about how they are at work in general when responding to the items.

Table 6

Sample Means Versus Normative Means

| Test                   | Study Mean | Sample Standard Deviation | Normative Mean | Normative Standard Deviation |
|------------------------|------------|---------------------------|----------------|------------------------------|
| WPT                    | 23.5       | 6.0                       | 26*            | 6.2*                         |
| Neuroticism            | 13.9       | 6.6                       | 19             | 7.7                          |
| Extraversion           | 33.6       | 6.0                       | 28             | 5.9                          |
| Openness to Experience | 28         | 5.2                       | 27             | 5.8                          |
| Agreeableness          | 33.9       | 5.5                       | 33             | 5.0                          |
| Conscientiousness      | 37.6       | 6.0                       | 35             | 5.9                          |

Note. \*The WPT normative mean and standard deviation are for supervisors or entry-level managers.

Next, Table 7 shows correlation coefficients for the primary predictor-criterion relationships in this study. Other Big Five dimensions from the NEO are also included.

Table 7

Correlation Coefficients for Predictor-Criterion Relationships.

|                             | Self Ratings of<br>Task<br>Performance | Self Ratings of<br>Contextual<br>Performance | Self Ratings of<br>Overall<br>Performance | Supervisor<br>Ratings of<br>Task<br>Performance | Supervisor<br>Ratings of<br>Contextual<br>Performance | Supervisor<br>Ratings of<br>Overall<br>Performance |
|-----------------------------|--|--|---|---|---|--|
| Wonderlic<br>Personnel Test | .01                                    | -.07   | .05                                       | .42**   | .10   | .28**  |
| Neuroticism                 | -.16**                                 | -.21**                                       | -.12*                                     | -.10  | -.17**  | -.09   |
| Extraversion                | .20**                                  | .34**  | .16*                                      | .01   | .17**   | .09  |
| Openness to<br>Experience   | .05                                    | .18**  | .01                                       | .08   | .11   | .07  |
| Agreeableness               | -.00                                   | .09  | -.06                                      | -.13*   | .10   | -.00   |
| Conscientious<br>ness       | .21**                                  | .33**  | .19**                                     | .13*  | .33**   | .23**  |

Note. N = 203 to 212.

\*p < .05, \*\*p < .01, one-tailed.

Unless otherwise stated, the source of all analyses utilizing job performance ratings was supervisors. However, due to the potential of common-method variance affecting results, Hypotheses 1a and 1b utilized self-reported performance ratings as well.

#### Hypotheses 1a and 1b: Moderating Effects of Perceived Job Autonomy and Problem Solving

Hypothesis 1a, that perceived job autonomy will moderate the relationship between Conscientiousness and contextual performance, and Hypothesis 1b, that perceived problem-solving requirement of the job will moderate the relationship between cognitive ability and task performance, were tested using hierarchical regression. Contextual performance was the criterion in the analysis to examine the moderating effects of perceived job autonomy, and task performance was the criterion in the analysis to examine the moderating effects of perceived problem-solving requirement of the job. To test Hypothesis 1a, Conscientiousness and perceived job autonomy were entered in the first step and their product was entered in the second step. To test Hypothesis 1b, cognitive ability and perceived problem-solving requirement of the job were entered in the first step, and their product was entered second.

The analyses revealed that perceived job autonomy did not moderate the relationship between Conscientiousness and contextual performance,  $\Delta R^2 = .001$ ,  $F(1,208) = .334$ , ns. Furthermore, perceived problem solving component of the CSM

job did not moderate the relationship between cognitive ability and task performance,  $\Delta R^2 = .00$ ,  $F(1,208) = .066$ , *ns*. Therefore, Hypotheses 1a and 1b were not supported.

#### Hypotheses 2a and 2b: Incremental Validity of Task and Contextual Performance

To investigate Hypotheses 2a, that task performance will explain a significant amount of variance in overall performance beyond that explained by contextual performance, and Hypothesis 2b, that contextual performance will explain a significant amount of variance in overall performance beyond that explained by task performance, eight hierarchical regression analyses were computed, four using performance data from within-rater source, and four using data from across-rater source. In within-rater source analyses, all performance data were from only one source: either self or supervisor. Across-rater source analysis involved criterion data from one source (either self or supervisor) and predictor data from another source (either self or supervisor). In each of the of the hierarchical regression analyses, self ratings or supervisor ratings of overall performance was the criterion and self ratings and/or supervisor ratings of task and contextual performance were the predictors. The form of the hierarchical regressions were the same in each analysis, such that overall performance (self ratings or supervisor ratings) was the criterion, and task or contextual performance was entered in the first step followed by the remaining performance dimension (task or contextual) entered in the second step. Table 8 displays the results of the eight hierarchical regression analyses.

Within-rater source analyses. In one set of analyses, using data from supervisor ratings of task, contextual, and overall performance (i.e., within-rater source), task

performance explained a significant amount of variance in overall performance beyond that explained by contextual performance,  $\Delta R^2 = .10$ ,  $F(1,209) = 69.08$ ,  $p < .01$ . In addition, contextual performance explained a significant amount of variance in overall performance beyond that explained by task performance,  $\Delta R^2 = .24$ ,  $F(1,209) = 165.54$ ,  $p < .01$ . Next, using data from self ratings of task, contextual, and overall performance (i.e., within-rater source), task performance explained a significant amount of variance in overall performance beyond that explained by contextual performance,  $\Delta R^2 = .06$ ,  $F(1,198) = 16.46$ ,  $p < .01$ . Moreover, contextual performance explained a significant amount of variance in overall performance beyond that explained by task performance,  $\Delta R^2 = .13$ ,  $F(1,198) = 39.20$ ,  $p < .01$ . These within-rater source analyses support Hypotheses 1a and 1b.

Across-rater source analyses. Across-rater source analyses provided a more conservative test of these hypotheses, as they reduce shared variance among the variables due to common-method. Using supervisor ratings of overall performance and self ratings of task and contextual performance (i.e., across-rater source), task performance did not explain a significant amount of variance in overall performance beyond that explained by contextual performance,  $\Delta R^2 = .00$ ,  $F(1,207) = .01$ , ns. However, contextual performance did explain a significant amount of variance in overall performance beyond that explained by task performance,  $\Delta R^2 = .07$ ,  $F(1,207) = 15.23$ ,  $p < .01$ . Finally, using self ratings of overall performance and supervisor ratings of task and contextual performance (i.e., across-rater source), task performance accounted for a significant amount of variance in overall performance that was not

explained by contextual performance,  $\Delta R^2 = .07$ ,  $F(1,198) = 15.56$ ,  $p < .01$ . However, contextual performance did not account for a significant amount of variance in overall performance after controlling for task performance,  $\Delta R^2 = .00$ ,  $F(1,198) = .42$ , *ns*. These across-rater analyses partially support Hypotheses 2a and 2b (see Table 8).

Table 8

Regression Results for Hypotheses 2a and 2b.

|                     | Criterion                     | Step 1 Performance Measure  | Step 2 Performance Measure  | $\Delta R^2$ |
|---------------------|-------------------------------|-----------------------------|-----------------------------|--------------|
| Within-rater Source |                               |                             |                             |              |
| 1                   | Sup. ratings of overall perf. | Sup. ratings of cntxl perf. | Sup. ratings of task perf.  | .10**        |
| 2                   | Sup. ratings of overall perf. | Sup. ratings of task perf.  | Sup. ratings of cntxl perf  | .24**        |
| 3                   | Self ratings of overall perf. | Self ratings of task perf.  | Self ratings of cntxl perf. | .06**        |
| 4                   | Self ratings of overall perf. | Self ratings of cntxl perf. | Self ratings of task perf   | .13**        |
| Across-rater Source |                               |                             |                             |              |
| 5                   | Sup. ratings of overall perf. | Self ratings of cntxl perf. | Self ratings of task perf.  | .00          |
| 6                   | Sup. ratings of overall perf. | Self ratings of task perf.  | Self ratings of cntxl perf. | .07**        |
| 7                   | Self ratings of overall perf. | Sup. ratings of cntxl perf. | Sup. ratings of task perf.  | .07**        |
| 8                   | Self ratings of overall perf. | Sup. ratings of task perf.  | Sup. ratings of cntxl perf. | .00          |

Note.  $N = 203$  to  $212$ .

\*\* $p < .01$ .

Hypotheses 3a and 3b: Predictors of Task and Contextual Performance.

For Hypothesis 3a, that a cognitive ability measure will have a larger correlation with task performance than will a Conscientiousness measure, and

Hypothesis 3b, that a Conscientiousness measure will have a larger correlation with contextual performance than will a measure of cognitive ability, a statistical significance test of the difference between two correlation coefficients obtained from the same sample does not exist (Ferguson & Takane, 1989). Therefore, the expected order of magnitude of the correlations as described by the hypotheses was examined. As Table 9 shows, the order of the magnitude of correlations supports both hypotheses. Only Conscientiousness had a significant correlation with contextual performance. Furthermore, cognitive ability had a larger correlation with task performance than Conscientiousness did.

Table 9

Correlations between Supervisor Ratings of Task and Contextual Performance, and Cognitive Ability and Conscientiousness.

|                   | Supervisor Ratings of Job Performance |                        |
|-------------------|---------------------------------------|------------------------|
|                   | Task Performance                      | Contextual Performance |
| Cognitive ability | .42**                                 | .10                    |
| Conscientiousness | .13*                                  | .33**                  |

Note.  $N = 212$ .

\* $p < .05$ , \*\* $p < .01$ , one-tailed.

In addition, I ran two regression analyses. In one, task performance was the criterion and WPT scores and Conscientiousness scores were the predictors. The betas for WPT and Conscientiousness were both significant,  $\beta = .42$ ,  $t(209) = 6.84$ ,  $p < .01$ ;  $\beta = .15$ ,  $t(209) = 2.40$ ,  $p < .05$ , respectively, although the beta for Conscientiousness was larger. In the other regression, contextual performance was the criterion and WPT scores and Conscientiousness scores were the predictors. Only the

beta for Conscientiousness was significant,  $\beta = .33$ ,  $t(209) = 5.08$ ,  $p < .01$ . This provides further empirical evidence in support of the hypotheses. Therefore, Hypotheses 3a and 3b were supported.

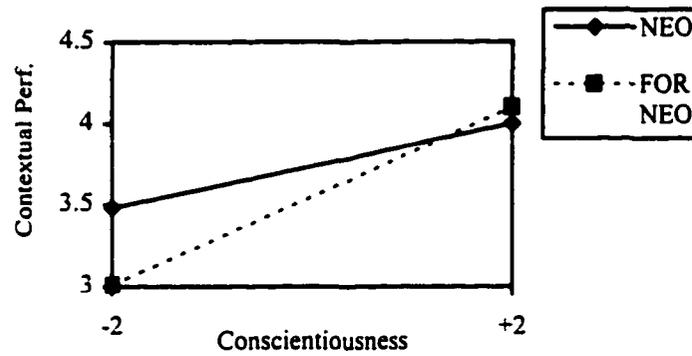
Hypothesis 4: FOR Effects on Validity.

The manipulation check for the FOR NEO (i.e., item 61 of the personality inventory) indicated that all participants in the FOR condition used an at-work FOR when responding to items. Hypothesis 4, that the magnitude of the correlation between the FOR Conscientiousness dimension and contextual job performance will be greater than the magnitude of the correlation between the standard Conscientiousness dimension and contextual job performance (i.e., that the FOR Conscientiousness measure would show greater validity than the standard Conscientiousness measure), was first examined using Fisher's  $r$  to  $z$  transformation. The analysis revealed a marginally significant difference between the magnitude of the correlations at the  $p < .10$  level,  $z(206) = 1.93$ ,  $p = .051$ . In addition, this hypothesis was tested using moderated regression. In this analysis, contextual performance was the criterion, and Conscientiousness score and NEO test type (standard or FOR dummy coded as 0,1) were entered in the first step, and their product was entered second step. Again, with marginal statistical significance, this analysis revealed a Conscientiousness X Test Type interaction as indicated by the change in  $R^2$ ,  $\Delta R^2 = .011$ ,  $F(1,206) = 2.69$ ,  $p = .051$ . Figure 6 shows this interaction, the differential relationship between Conscientiousness and contextual performance for the two test

types. Specifically, there was a more positive relationship between Conscientiousness and contextual performance for the FOR NEO test than for the standard NEO test.

However, because the significance levels for these were only at the  $p < .10$  level,

Hypothesis 4 was only marginally supported. It is important to point out that the marginal statistical significance may be due to a lack of statistical power. The number of participants (214) barely surpassed the figure recommended by the power analysis (210).



**Figure 6.** Conscientiousness X Test Type interaction, showing the relationship between Conscientiousness and contextual performance for the standard NEO and the FOR NEO. Conscientiousness score was standardized.

Hypothesis 5: FOR And Applicant Reactions.

Hypothesis 4, that applicant reactions to a FOR personality test would be more positive than applicant reactions to a standard personality test in terms of applicant perceptions of job relatedness, opportunity to perform, and propriety of questions, self-presentation, and overall process fairness, was examined using multivariate analysis of variance (MANOVA). The MANOVA revealed that there was a marginally significant difference by test type (standard NEO and FOR NEO) for a linear combination of the dependent variables (job relatedness/content, job relatedness/predictive, opportunity to perform, propriety of questions, self-presentation, and overall fairness) at the  $p < .10$  level,  $\lambda = .95$ ,  $F = 2.33(5)$ ,  $p < .10$  ( $M^2 = .06$ ). However, contrary to Hypothesis 5, tests of between-subjects effects revealed that the perceptions of job relatedness/content, self-presentation, and overall fairness for the standard NEO were significantly greater ( $p < .05$ , two-tailed) than they were for the FOR NEO (see Table 10). Consequently, Hypothesis 5 was not supported.

Table 10

Mean Procedural Justice Differences for NEO Test Type.

|                            | Test Type    | <u>M</u> | <u>F</u> | <u>M<sup>2</sup></u> |
|----------------------------|--------------|----------|----------|----------------------|
| Job Relatedness/content    | Standard NEO | 3.08     | 6.73*    | .03                  |
|                            | FOR NEO      | 2.72     |          |                      |
| Job Relatedness/predictive | Standard NEO | 2.67     | 2.70     | .01                  |
|                            | FOR NEO      | 2.49     |          |                      |
| Opportunity to perform     | Standard NEO | 2.52     | 1.64     | .01                  |
|                            | FOR NEO      | 2.39     |          |                      |
| Propriety of Questions     | Standard NEO | 4.03     | .459     | .00                  |
|                            | FOR NEO      | 3.97     |          |                      |
| Self-Presentation          | Standard NEO | 3.23     | 5.29*    | .03                  |
|                            | FOR NEO      | 2.97     |          |                      |
| Overall Fairness           | Standard NEO | 3.18     | 5.10*    | .02                  |
|                            | FOR NEO      | 2.96     |          |                      |

Note. N = 212.

\*p < .05.

Hypothesis 6: Effects of Fairness Perceptions on Outcomes.

Hypothesis 6, that procedural justice perceptions will be positively related to participants' test-taking motivation, test-taking self-efficacy, and both test performances, was examined using regression analyses. Specifically, hierarchical regression was used to test whether procedural justice perceptions were positively related to test-taking motivation, with post-test motivation as the criterion, pre-test motivation entered on the first step as a control, and procedural justice perceptions (i.e., job relatedness/content, job relatedness/predictive, opportunity to perform, propriety of questions, and self presentation) entered on the second step. The same form of a hierarchical regression analysis was used to test whether procedural justice perceptions were positively related to test-taking self-efficacy, with post-test self-

efficacy as the criterion, pre-test self-efficacy entered on the first step, and procedural justice perceptions (i.e., job relatedness/content, job relatedness/predictive, opportunity to perform, propriety of questions, and self-presentation) entered on the second step. Finally, two separate regression analyses were conducted to test whether procedural justice perceptions were positively related to WPT performance and NEO (Conscientiousness) test score, such that WPT performance and Conscientiousness scores were separately regressed on procedural justice perceptions (i.e., job relatedness/content, job relatedness/predictive, opportunity to perform, propriety of questions, and self presentation).

Test-taking motivation. For the NEO test, procedural justice perceptions (i.e., job relatedness/content and propriety of questions), after controlling for pre-test motivation, were significantly related to participants' test-taking motivation,  $\Delta R^2 = .11$ ,  $F(5,202) = 6.84$ ,  $p = < .01$ . However, as Table 11 indicates, job relatedness/content was negatively related to post-test motivation, which was opposite from what was hypothesized.

Next, procedural justice perceptions (i.e., opportunity to perform, and propriety of questions) of the WPT test, after controlling for pre-test motivation, were positively related to participants' test-taking motivation,  $\Delta R^2 = .14$ ,  $F(5,203) = 10.46$ ,  $p = < .01$  (see Table 11). However, due to the negative relationship of job relatedness/content to NEO post-test motivation, there was mixed support for Hypothesis 6.

Table 11

Hierarchical Regressions for NEO and WPT Test-Taking Motivation.

| Variable                          | Test-taking<br>Motivation (NEO) |              |         | Test-taking<br>Motivation (WPT) |              |         |
|-----------------------------------|---------------------------------|--------------|---------|---------------------------------|--------------|---------|
|                                   | $R^2$                           | $\Delta R^2$ | $\beta$ | $R^2$                           | $\Delta R^2$ | $\beta$ |
| Step 1                            | .25**                           |              |         | .30**                           |              |         |
| Pretest Motivation                |                                 |              | .46**   |                                 |              | .48**   |
| Step 2                            | .36**                           | .11**        |         | .46**                           | .14**        |         |
| Procedural Justice<br>Perceptions |                                 |              |         |                                 |              |         |
| 1. Job<br>relatedness/content     |                                 |              | -.15*   |                                 |              | .00     |
| 2. Job<br>relatedness/predictive  |                                 |              | .08     |                                 |              | -.08    |
| 3. Opportunity to<br>perform      |                                 |              | .10     |                                 |              | .20**   |
| 4. Propriety of questions         |                                 |              | .28**   |                                 |              | .33**   |
| 5. Self presentation              |                                 |              | .08     |                                 |              | -.04    |

Note.  $N = 208$ . Betas are from the final equation.

\* $p < .05$ , \*\* $p < .01$ .

Test-taking self-efficacy. For the NEO test, procedural justice perceptions, after controlling for pre-test self-efficacy, were not significantly related to participants' test-taking self-efficacy,  $\Delta R^2 = .02$ ,  $F(5,202) = 1.50$ , ns. On the other hand, procedural justice perceptions (i.e., job relatedness/content and propriety of questions) of the WPT test, after controlling for pre-test self-efficacy, were significantly related to participants' test-taking self-efficacy,  $\Delta R^2 = .03$ ,  $F(5,203) = 2.55$ ,  $p = < .05$  (see Table 12). However, as Table 12 indicates, job relatedness/content was negatively related to test-taking self-efficacy, which was opposite from what was hypothesized. These results provide mixed support for Hypothesis 6.

Table 12

Hierarchical Regressions for NEO and WPT Test-Taking Self-Efficacy.

| Variable                       | Self-efficacy (NEO) |              |         | Self-efficacy (WPT) |              |         |
|--------------------------------|---------------------|--------------|---------|---------------------|--------------|---------|
|                                | $R^2$               | $\Delta R^2$ | $\beta$ | $R^2$               | $\Delta R^2$ | $\beta$ |
| Step 1                         | .53**               |              |         | .55**               |              |         |
| Pretest Self-efficacy          |                     |              | .71**   |                     |              | .72**   |
| Step 2                         | .55**               | .02          |         | .58**               | .03*         |         |
| Procedural Justice Perceptions |                     |              |         |                     |              |         |
| 1. Job relatedness/content     |                     |              | .06     |                     |              | -.13*   |
| 2. Job relatedness/predictive  |                     |              | -.01    |                     |              | .06     |
| 3. Opportunity to perform      |                     |              | -.01    |                     |              | .02     |
| 4. Propriety of questions      |                     |              | .11*    |                     |              | .12*    |
| 5. Self presentation           |                     |              | -.03    |                     |              | .01     |

Note.  $N = 208$ . Betas are from the final equation.

\* $p < .05$ , \*\* $p < .01$ .

Test performance. Procedural justice perceptions (i.e., propriety of questions) of the NEO were positively related to Conscientiousness scores,  $R^2 = .07$ ,  $F(5,207) = 2.88$ ,  $p = < .05$ . Moreover, procedural justice perceptions (i.e., job relatedness/content, opportunity to perform, propriety of questions) of the WPT were significantly related to participants' WPT scores,  $R^2 = .11$ ,  $F(5,208) = 4.95$ ,  $p = < .01$  (See Table 13). However, as Table 13 indicates, job relatedness/content was negatively related to WPT performance, which was opposite from what was hypothesized.

Table 13

Regression Analyses for NEO (Conscientiousness) and WPT Test-Taking Performance.

| Variable                                | NEO Test Performance<br>(Conscientiousness) |         | WPT<br>Performance |         |
|---|---|---------|--------------------|---------|
|   | $R^2$                                       | $\beta$ | $R^2$              | $\beta$ |
| Procedural Justice Perceptions<br>(NEO) | .07*  |         | .11**              |         |
| 1. Job relatedness/content              |   | -.05    |                    | -.25**  |
| 2. Job relatedness/predictive           |   | .06     |                    | .10     |
| 3. Opportunity to perform               |   | .09     |                    | .26**   |
| 4. Propriety of questions               |   | .19**   |                    | .15*    |
| 5. Self presentation                    |   | .06     |                    | -.11    |

Note. N = 208.

\* $p < .05$ , \*\* $p < .01$ .

Overall, Hypothesis 6 was partially supported. Some dimensions of procedural justice perceptions were positively related to participants' test-taking motivation, test-taking self-efficacy, and test performance, and where significant, job-relatedness/content was negatively related to these variables.

Hypothesis 7: Moderating Effects of Fairness Perceptions on Cognitive Ability

Hypothesis 7, that procedural justice perceptions of a cognitive ability test will moderate the relationship between cognitive ability and task performance, was tested using hierarchical regression analyses. With supervisor ratings of task performance as the criterion, overall procedural justice perceptions of the WPT and WPT test scores were entered in the first step, and their product was entered in the second step. There was no significant interaction,  $\Delta R^2 = .001$ ,  $F(1,208) = .22$ , ns. Therefore, procedural

justice perceptions did not moderate the validity of cognitive ability. Consequently, Hypothesis 7 was not supported.

Research Question: Moderating Effects of Fairness Perceptions on Conscientiousness.

Finally, a hierarchical regression analysis was used to investigate whether the validity of a Conscientiousness measure was altered by perceptions of procedural justice. An interaction term was created from the product of Conscientiousness score and overall procedural justice of the NEO. With supervisor ratings of contextual performance as the criterion, the hierarchical analysis was run with Conscientiousness and overall procedural justice in the first step, and their product in the second step. The interaction was significant,  $\Delta R^2 = .02$ ,  $F(1,206) = 4.57$ ,  $p = < .05$  (Table 14). Overall procedural justice of the NEO did moderate the validity of Conscientiousness (see Figure 7). Specifically, there was a more positive relationship between Conscientiousness and contextual performance when procedural justice was high.

Table 14

Hierarchical Regression of the Procedural Justice Interaction on the Validity of Conscientiousness.

|   | Contextual Performance |              |         |
|---|------------------------|--------------|---------|
|   | $R^2$                  | $\Delta R^2$ | $\beta$ |
| Step 1  | .11**                  |              |         |
| Overall Procedural Justice (NEO)                        |                        |              | .31**   |
| Conscientiousness                                       |                        |              | .07**   |
| Step 2  | .13**                  | .02*         |         |
| Overall Procedural Justice (NEO)                        |                        |              | -.59    |
| Conscientiousness                                       |                        |              | -.10    |
| Overall Procedural Justice (NEO) X<br>Conscientiousness |                        |              | .84*    |

Note. N = 212. Betas are from the final equation.

\*p < .05, \*\*p < .01.

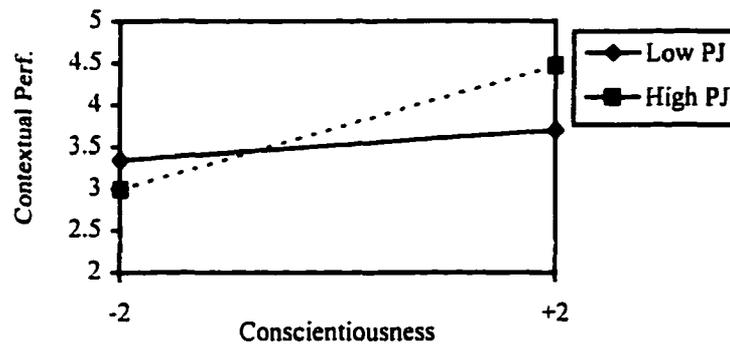


Figure 7. The relationship between Conscientiousness and contextual performance for participants with low and high procedural justice perceptions.

Table 5

Means, Standard Deviations, Alpha Reliabilities, and Intercorrelations for all Measures.

| Variable                             | <u>M</u> | <u>SD</u> | 1     | 2      | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|--------------------------------------|----------|-----------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Wonderlic Personnel Test (WPT)    | 23.46    | 6.01      | -     |        |       |       |       |       |       |       |       |       |       |       |
| 2. Neuroticism                       | 13.89    | 6.55      | -.12  | -      |       |       |       |       |       |       |       |       |       |       |
| 3. Extraversion                      | 33.62    | 5.95      | -.08  | -.36** | -     |       |       |       |       |       |       |       |       |       |
| 4. Openness to Experience            | 27.95    | 5.19      | .10   | -.26** | .22** | -     |       |       |       |       |       |       |       |       |
| 5. Agreeableness                     | 33.91    | 5.46      | -.10  | -.39** | .29** | .23** | -     |       |       |       |       |       |       |       |
| 6. Conscientiousness                 | 37.61    | 5.96      | -.05  | -.36** | .39** | .15*  | .25** | -     |       |       |       |       |       |       |
| 7. Pre-test Motivation               | 4.36     | .67       | .02   | -.12   | .21** | .10   | .26** | .26** | (.94) |       |       |       |       |       |
| 8. Post-test Motivation WPT          | 4.10     | .65       | .16*  | -.15*  | .26** | .14*  | .22** | .30** | .55** | (.95) |       |       |       |       |
| 9. Post-test Motivation NEO          | 4.08     | .65       | .10   | -.12   | .22** | .07   | .19** | .36** | .50** | .78** | (.94) |       |       |       |
| 10. Job Relatedness/content WPT      | 2.19     | .82       | -.09  | .11    | -.03  | .04   | .01   | .00   | .00   | .05   | .02   | (.86) |       |       |
| 11. Job Relatedness/predictive WPT   | 2.30     | .77       | .08   | -.01   | -.09  | .06   | -.04  | -.04  | .05   | .08   | .06   | .60** | (.82) |       |
| 12. Opportunity to Perform WPT       | 2.51     | .77       | .18** | .05    | -.01  | .04   | -.11  | .07   | .09   | .24** | .16*  | .46** | .51** | (.90) |
| 13. Propriety of Questions WPT       | 4.11     | .57       | .18** | -.17*  | .13   | .12   | .15*  | .09   | .18** | .42** | .27** | .03   | .14*  | .14*  |
| 14. Self-presentation WPT            | 2.41     | .63       | -.02  | -.04   | -.02  | .14*  | -.15* | .07   | .07   | .07   | .06   | .27** | .31** | .42** |
| 15. Overall Fairness WPT             | 3.04     | .92       | .13   | .01    | -.09  | .10   | -.03  | .10   | .04   | .36** | .24** | .25** | .44** | .36** |
| 16. Job Relatedness/content NEO      | 2.89     | 1.0       | -.08  | -.10   | .08   | .19*  | .07   | .08   | .17*  | .12   | .12   | .26** | .24** | .17*  |
| 17. Job Relatedness/predictive NEO   | 2.57     | .80       | -.02  | -.15*  | .13   | .04   | -.02  | .14*  | .13   | .20** | .20** | .32** | .51** | .29** |
| 18. Opportunity to Perform NEO       | 2.45     | .77       | -.14* | .03    | .04   | .04   | -.02  | .16*  | .11   | .18** | .20** | .37** | .44** | .43** |
| 19. Propriety of Questions NEO       | 3.99     | .59       | .07   | -.11   | .14*  | .12   | .23   | .23** | .13   | .33** | .35** | .09   | .12   | .05   |
| 20. Self-presentation NEO            | 3.10     | .81       | .13   | -.03   | .03   | .09   | -.02  | .08   | .14*  | .11   | .15*  | .04   | .00   | .18** |
| 21. Overall Fairness NEO             | 3.07     | .73       | -.03  | -.06   | .04   | .07   | .06   | .15*  | .07   | .31** | .28** | .37** | .48** | .31** |
| 22. Pre-test Self-efficacy           | 3.92     | .71       | .12   | -.24** | .23** | .21** | .29** | .29** | .60** | .42** | .33** | .04   | .04   | .21** |
| 22. Pre-test Self-efficacy           | 3.92     | .71       | .12   | -.24** | .23** | .21** | .29** | .29** | .60** | .42** | .33** | .04   | .04   | .21** |
| 23. Post-test Self-efficacy WPT      | 3.64     | .71       | .20** | -.26** | .24** | .26** | .25** | .25** | .34** | .51** | .38** | -.05  | .04   | .17*  |
| 23. Post-test Self-efficacy WPT      | 3.64     | .71       | .20** | -.26** | .24** | .26** | .25** | .25** | .34** | .51** | .38** | -.05  | .04   | .17*  |
| 24. Post-test Self-efficacy NEO      | 3.71     | .69       | .13   | -.29** | .21** | .23** | .21** | .27** | .30** | .43** | .45** | -.02  | .06   | .21** |
| 24. Post-test Self-efficacy NEO      | 3.71     | .69       | .13   | -.29** | .21** | .23** | .21** | .27** | .30** | .43** | .45** | -.02  | .06   | .21** |
| 25. Problem Solving Component of Job | 4.41     | .70       | .07   | -.07   | .19** | .05   | .19** | .19** | .17*  | .23** | .23** | -.07  | -.02  | -.04  |

Table 5 Continued.

| Variable                                 | M    | SD   | 1     | 2      | 3      | 4     | 5      | 6     | 7     | 8     | 9    | 10   | 11   | 12   |
|--|------|------|-------|--------|--------|-------|--------|-------|-------|-------|------|------|------|------|
| 26. Job Autonomy                         | 3.77 | .81  | -.15* | -.07   | .23**  | .03   | .02    | .15*  | .12   | .08   | .04  | .10  | .04  | .10  |
| 27. Overall Job Performance - Self       | 4.14 | .61  | .05   | -.12   | .16*   | .01   | -.06   | .19** | .12   | .18** | .12  | -.04 | -.11 | .05  |
| 28. Task Performance – Self              | 4.09 | .49  | .01   | -.16*  | .20**  | .05   | -.00   | .21** | .10   | .06   | .13  | -.05 | -.13 | .02  |
| 29. Contextual Performance - Self        | 3.96 | .64  | -.07  | -.21** | .34**  | .18** | .09    | .33** | .22** | .15*  | .13  | -.03 | -.11 | .03  |
| 30. Task Performance - Supervisor        | 3.27 | .59  | .42** | -.10   | .01    | .08   | -.13   | .13   | -.05  | .08   | .01  | -.09 | -.03 | .05  |
| 31. Contextual Performance - Supervisor  | 3.64 | .66  | .10   | -.17*  | .17*   | .11   | .10    | .33** | .03   | .13   | .10  | .01  | .05  | .13  |
| 32. Overall Job Performance – Supervisor | 3.49 | .72  | .28** | -.09   | .09    | .07   | -.00   | .23** | .00   | .14   | .04  | -.00 | .01  | .10  |
| 33. Gender                               | 1.46 | .50  | -.11  | .05    | .08    | .11   | .22**  | .11   | -.03  | -.06  | .07  | .04  | -.03 | -.09 |
| 34. Company Tenure                       | 4.31 | .97  | -.06  | -.03   | -.10   | -.08  | -.16*  | .01   | .00   | -.07  | -.05 | .18* | .07  | .09  |
| 35. Position Tenure                      | 2.89 | 1.24 | .05   | -.01   | -.21** | -.16* | -.23** | -.15* | -.13  | -.13  | -.12 | .05  | .02  | .01  |
| 36. Education                            | 2.88 | .99  | .11   | -.05   | .09    | .12   | .09    | .14*  | .02   | .08   | .03  | .04  | -.00 | .03  |

Table 5 Continued.

| Variable                                 | M    | SD   | 13     | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|--|------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 13. Propriety of Questions WPT           | 4.11 | .57  | (.87)  |       |       |       |       |       |       |       |       |       |       |       |
| 14. Self-presentation WPT                | 2.41 | .63  | .06    | (.75) |       |       |       |       |       |       |       |       |       |       |
| 15. Overall Fairness WPT                 | 3.04 | .92  | .45**  | .25** | (.87) |       |       |       |       |       |       |       |       |       |
| 16. Job Relatedness/content NEO          | 2.89 | 1.0  | .12    | .18*  | .05   | (.90) |       |       |       |       |       |       |       |       |
| 17. Job Relatedness/predictive NEO       | 2.57 | .80  | .20**  | .27** | .19** | .54** | (.87) |       |       |       |       |       |       |       |
| 18. Opportunity to Perform NEO           | 2.45 | .77  | .09    | .37** | .21** | .44** | .64** | (.92) |       |       |       |       |       |       |
| 19. Propriety of Questions NEO           | 3.99 | .59  | .47**  | .00   | .31** | .20** | .19** | .19** | (.86) |       |       |       |       |       |
| 20. Self-presentation NEO                | 3.10 | .81  | .14*   | .18** | -.05  | .35** | .23** | .15*  | .08   | (.87) |       |       |       |       |
| 21. Overall Fairness NEO                 | 3.07 | .73  | .30**  | .19** | .53** | .32** | .48** | .51*  | .46** | .06   | (.80) |       |       |       |
| 22. Pre-test Self-efficacy               | 3.92 | .71  | .21**  | .13   | .07   | .14*  | .15*  | .15*  | .07   | .06   | .07   | (.84) |       |       |
| 23. Post-test Self-efficacy WPT          | 3.64 | .71  | .27**  | .10   | .15*  | .11   | .14*  | .14*  | .17*  | -.03  | .10   | .74** | (.85) |       |
| 24. Post-test Self-efficacy NEO          | 3.71 | .69  | .26**  | .13   | .16*  | .17*  | .16*  | .15*  | .17*  | .05   | .12   | .73** | .83** | (.82) |
| 25. Problem Solving Component of Job     | 4.41 | .70  | .23**  | -.02  | .14*  | .08   | .15*  | .10   | .23** | -.01  | .13   | .14   | .19** | .14*  |
| 26. Job Autonomy                         | 3.77 | .81  | -.04   | .11   | .03   | .03   | .08   | .06   | .06   | -.01  | .12   | .02   | -.03  | -.02  |
| 27. Overall Job Performance - Self       | 4.14 | .61  | .11    | .06   | .01   | -.01  | .05   | .03   | .05   | .04   | -.07  | .14   | .21** | .23** |
| 28. Task Performance - Self              | 4.09 | .49  | -.07   | .08   | -.05  | .04   | .11   | .03   | .05   | .12   | .06   | .05   | .10   | .10   |
| 29. Contextual Performance - Self        | 3.96 | .64  | .07    | .12   | -.06  | .05   | .06   | .00   | .00   | .18** | -.02  | .19** | .15*  | .18** |
| 30. Task Performance - Supervisor        | 3.27 | .59  | .15*   | -.02  | .13   | -.04  | -.04  | -.10  | .06   | .01   | .03   | .07   | .18** | .15*  |
| 30. Task Performance - Supervisor        | 3.27 | .59  | .15*   | -.02  | .13   | -.04  | -.04  | -.10  | .06   | .01   | .03   | .07   | .18** | .15*  |
| 31. Contextual Performance - Supervisor  | 3.64 | .66  | .13    | -.04  | .16*  | .09   | .08   | .03   | .14*  | .06   | .12   | .04   | .06   | .10   |
| 31. Contextual Performance - Supervisor  | 3.64 | .66  | .13    | -.04  | .16*  | .09   | .08   | .03   | .14*  | .06   | .12   | .04   | .06   | .10   |
| 32. Overall Job Performance - Supervisor | 3.49 | .72  | .10    | -.09  | .09   | .01   | -.02  | -.04  | .06   | .03   | .06   | .06   | .11   | .12   |
| 32. Overall Job Performance - Supervisor | 3.49 | .72  | .10    | -.09  | .09   | .01   | -.02  | -.04  | .06   | .03   | .06   | .06   | .11   | .12   |
| 33. Gender                               | 1.46 | .50  | -.18** | -.06  | -.12  | .04   | -.07  | -.01  | .01   | -.01  | .01   | -.02  | -.17* | -.07  |
| 33. Gender                               | 1.46 | .50  | -.18** | -.06  | -.12  | .04   | -.07  | -.01  | .01   | -.01  | .01   | -.02  | -.17* | -.07  |
| 34. Company Tenure                       | 4.31 | .97  | -.15*  | .16*  | -.01  | .05   | .10   | .07   | -.07  | .01   | .03   | -.04  | -.07  | -.01  |
| 35. Position Tenure                      | 2.89 | 1.24 | -.10   | .10   | -.08  | -.05  | -.05  | .00   | -.06  | .05   | -.14* | -.08  | -.05  | -.05  |
| 36. Education                            | 2.88 | .99  | .12    | -.03  | -.04  | .16*  | .08   | .02   | .13   | .03   | .01   | .17*  | .24** | .19** |

Table 5 Continued.

| Variable                                 | M    | SD   | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    | 33   | 34    | 35   | 36 |
|--|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|----|
| 25. Problem Solving Component of Job     | 4.41 | .70  | (.94) |       |       |       |       |       |       |       |      |       |      |    |
| 26. Job Autonomy                         | 3.77 | .81  | .03   | (.81) |       |       |       |       |       |       |      |       |      |    |
| 27. Overall Job Performance - Self       | 4.14 | .61  | .18*  | .22** | (.83) |       |       |       |       |       |      |       |      |    |
| 28. Task Performance - Self              | 4.09 | .49  | .11   | .26** | .53** | -     |       |       |       |       |      |       |      |    |
| 29. Contextual Performance - Self        | 3.96 | .64  | .07   | .26** | .45** | .45** | -     |       |       |       |      |       |      |    |
| 30. Task Performance - Supervisor        | 3.27 | .59  | .06   | .07   | .29** | .21** | .23** | (.90) |       |       |      |       |      |    |
| 31. Contextual Performance - Supervisor  | 3.64 | .66  | .09   | .26** | .12   | .22** | .35** | .53** | (.96) |       |      |       |      |    |
| 32. Overall Job Performance - Supervisor | 3.49 | .72  | .04   | .16*  | .20** | .14*  | .30** | .68** | .77** | (.88) |      |       |      |    |
| 33. Gender                               | 1.46 | .50  | .06   | -.00  | -.12  | -.02  | .11   | -.09  | .13   | .12   | -    |       |      |    |
| 34. Company Tenure                       | 4.31 | .97  | -.09  | .21** | .28** | .17*  | .13   | .08   | .02   | .06   | .00  | -     |      |    |
| 35. Position Tenure                      | 2.89 | 1.24 | -.10  | .10   | .24** | .02   | -.04  | .15*  | -.07  | .10   | -.11 | .52** | -    |    |
| 36. Education                            | 2.88 | .99  | .09   | -.02  | .12   | .03   | .04   | .14*  | .10   | .13   | -.09 | -.15* | -.12 | -  |

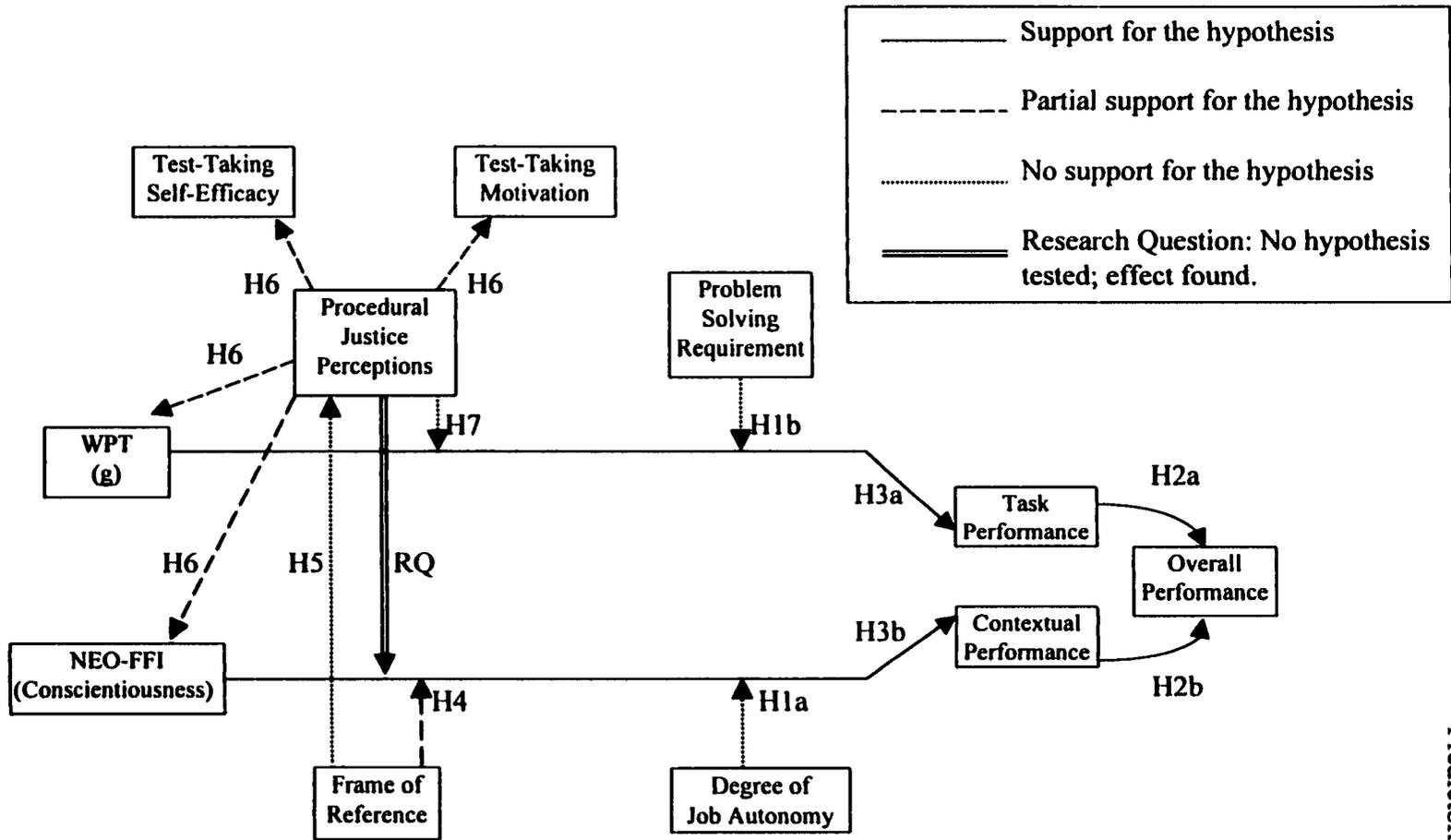
Note. N = 186 to 214. Gender was coded 1 = Male, 2 = Female. Tenure was coded 1 = less than 1 year, 2 = 1 to 3 years, 3 = 3 to 5 years, 4 = 5 to 10 years, 5 = More than 10 years. Education was coded 1 = HS diploma/GED, 2 = Some College, 3 = Associates or Votech degree, 4 = Bachelor's Degree, 5 = Graduate Degree. Reliabilities ( $\alpha$ s) are on the diagonal.

\* $p < .05$ , \*\* $p < .01$

## CHAPTER VIII

## Discussion: Resolution of the Hypotheses

The first objective of this dissertation was to add support to Motowidlo, Borman, and Schmit's (1997) theory that job performance is multidimensional, that personality is an antecedent to contextual performance, and that cognitive ability is an antecedent to task performance. The second objective was to investigate the effects of Frame-of-Reference (FOR) on the validity of a personality test and on its perceived fairness. A third objective was to determine whether perceived fairness of a personality test affects its validity. Finally, this dissertation described a systems perspective of personnel selection by advancing the understanding of the interactions and complexities of a selection system, its subsystems, and their elements. Figure 8 shows the hypotheses and research questions that were supported by the data. Solid lines indicate full support for the hypothesis. Dashed lines indicate partial or mixed support for the hypothesis, and dotted lines indicate no support for the hypothesis.



**Figure 8.** Hypotheses supported and research question examined in this study.

### Resolution of the Hypotheses

Hypotheses 1a and 1b: Moderating effects of perceived job autonomy and problem solving. The results indicate that Hypotheses 1a and 1b were not supported. Perceived job autonomy did not moderate the relationship between Conscientiousness and contextual performance. Furthermore, the perceived problem-solving requirement of the job did not moderate the relationship between cognitive ability and task performance. This finding contrasts with the findings of Barrick and Mount (1993) and Schmidt and Hunter (1992). However, there are a few notable characteristics of the present study that may explain these findings. First, Barrick and Mount (1993) and Schmidt and Hunter (1992) conducted their studies using higher-level management employees as participants whose perception of autonomy and problem solving may have been more accurate. In addition, Barrick and Mount (1993) measured autonomy using more job-specific autonomy questions in addition to items from the job diagnostic survey (see Hackman and Oldham, 1976). Moreover, they assessed job autonomy using a combination of participant ratings and supervisor ratings, perhaps because they questioned whether incumbents were accurate judges of their own autonomy.

Hypotheses 2a and 2b: Incremental validity of task and contextual performance. All hierarchical regression analyses using job performance data from only one source (i.e., self or supervisor) provided empirical evidence that overall performance was a function of both task performance and contextual performance. Specifically, as indicated by the significant changes in  $R^2$ , task performance explained

a significant amount of variance in overall performance beyond that explained by contextual performance; likewise, contextual performance explained a significant amount of variance in overall performance beyond that explained by task performance. Nonetheless, since all performance data were from the same source, it is likely that these findings may be partly due to common-method variance.

Therefore, analyses using performance data from more than one source (cross-rater) were also used to more fully support the notion of multidimensional job performance. In two of the four hierarchical regressions, using performance data from across-rater sources, task and contextual performance separately influenced ratings of overall performance. Specifically, when using supervisor ratings of overall performance and self-ratings of task and contextual performance, contextual performance explained a significant amount of variance in overall performance beyond that explained by task performance. Moreover, using self-ratings of overall performance and supervisor ratings of task and contextual performance, task performance accounted for a significant amount of variance in overall performance that was not explained by contextual performance. These results from across-rater source analyses are especially noteworthy because they provide a more conservative test of the hypotheses by controlling for the shared variance among the variables due to common-method.

The primary conclusion from these findings is that incumbents and their managers consider both contextual factors and task performance when making evaluations of overall job performance. Consistent with previous empirical research

(e.g., Kiker & Motowidlo, 1999; Motowidlo & Van Scotter, 1994) and meta-analytic findings (Conway, 1999), the present findings support Motowidlo, Borman, and Schmit's (1997) theory that job performance is multidimensional. However, the present study is the first empirical research to support this theory using data from supervisors and in a non-military field setting.

Hypotheses 3a and 3b: Predictors of task and contextual performance.

Although it was not possible to perform statistical tests of these hypotheses, the order of magnitude of the correlations indicated that Conscientiousness had a larger correlation with contextual performance than it did with the WPT. Moreover, the correlation between Conscientiousness and contextual performance was statistically significant and the correlation between Conscientiousness and task performance was not. Accordingly, the WPT had a larger correlation with task performance than with Conscientiousness. Thus, these hypotheses were supported.

These findings are the first to fully support Motowidlo, Borman, and Schmit's (1997) theory that there are different antecedents or predictors of each performance dimension. Specifically, Conscientiousness is an antecedent of contextual performance more so than is cognitive ability, and cognitive ability is an antecedent of task performance more so than is Conscientiousness. This theory had not been fully supported by the one empirical field study that has tested it (Motowidlo & Van Scotter, 1994). The current findings are therefore the first to provide substantial support for Motowidlo et al.'s theory of job performance.

Hypothesis 4: FOR effects on personality test validity. With marginal statistical significance (i.e.,  $p = .051$ ), analyses revealed that the magnitude of the correlation between Conscientiousness and contextual job performance is greater when there is an “at work” frame-of-reference for test-taking. In other words, test type (with or without FOR) interacted with the relationship between Conscientiousness and contextual performance, such that Conscientious accounts for more variance in contextual performance when the NEO-FFI is administered with instructions that provide test-takers with an on-the-job frame of reference.

It is important to point out that although the analysis revealed only marginal statistical significance ( $p = .051$ ), this finding may have practical significance. Cascio and Zedeck (1983) advocate increasing the alpha level for claiming statistical significance when applied research has marginal power. The power analysis in the present study indicated a need for 210 participants. As such, data from 214 participants just met the minimum level of statistical power to detect the effect size for this hypothesis. Therefore, it is reasonable to speculate that statistical significance would have been met with a larger sample and subsequent increase in statistical power. Moreover, interaction effects may be hard to detect with linear regression (Pedhazur, 1982).

This finding provides the first empirical support in a field setting for the predictions made by conditional disposition and self-presentation theories regarding the frame-of-reference (FOR) of personality measures (Schmit et al., 1995). Schmit et al. claimed that providing test takers with a specific FOR (i.e., an “at work” context)

for a personality test will lead to higher criterion validities because it provides a specific and consistent situation (i.e., “at work”) where individuals are posited to be more predictable than they would be across all situations. Moreover, it facilitates self-presentation such that applicants are directed to focus on how they would behave in a work context, thereby reducing error variance. The present study was the first field research to show that administering a personality selection test in a work-related context does not necessarily lead to socially desirable responses with a subsequent reduction in predictive validity. It is important to point out however, that the present study only examined the FOR effects on validity of the Conscientiousness dimension. Manipulating the FOR to an “at work” context may not enhance the validity of other personality dimensions, particularly if the items do not make sense in an “at work” context.

Hypothesis 5: FOR and applicant reactions. The marginally significant MANOVA indicated that mean applicant reactions were different for the NEO than for the FOR NEO. Specifically, the means for job-relatedness/content, self-presentation, and overall procedural fairness for the NEO were significantly greater than the same means for the FOR NEO. In other words, participants felt that the content of the FOR NEO was less job-related, the FOR NEO provided fewer opportunities to make themselves look good, and the FOR NEO was generally a less fair way to select people than the standard NEO.

Therefore, although FOR did influence procedural justice perceptions of the personality test, it was not in the hypothesized direction. This finding contrasts with

those of previous studies which found that selection measures with higher apparent fidelity to job content are perceived as more fair (e.g., Rynes & Connerly, 1993). In the current study, FOR may have negatively affected the fidelity of the personality measure (i.e., some NEO items may not be appropriate in an “at work” context) leading to more negative justice perceptions. Alternately, FOR may have affected justice perceptions in a way other than apparent fidelity to job content.

Because these findings were counterintuitive, I conducted post hoc discussions with four participants to assist with the interpretation of this finding. These participants were informed of the results and provided with the two versions of the NEO (standard and FOR). They were then asked why the content of FOR NEO may have been perceived as less job-related; why it was seen as providing fewer opportunities to make test-takers look good; and why was it was perceived as less fair overall. They provided two reasons.

First, they indicated that the “at work” instructions might have forced test-takers to more critically evaluate the test for selection purposes in terms of procedural fairness. In other words, test-takers may have been more critical when they were reminded throughout the test that it was intended to assess behaviors at work. This interpretation is somewhat similar to the results of a contrast effect. Because the test-taking context prior to testing and during testing was defined as “at work,” test-takers may have been primed to respond more critically when assessing the procedural justice items of the NEO.

More importantly, participants indicated that the content of some questions in the NEO did not allow for an altered frame-of-reference. In other words, because some questions could not easily be placed in an “at work” context, the general content of the test was perceived as less job-related. For example, the item “Poetry has little or no effect on me” is not easily placed in an “at work” context. In addition, questions like this one may have caused participants to feel they had less of an opportunity to make themselves look good. Specifically, an “at work” context may have reduced the variance of possible responses to test items. As such, test-takers may have felt they did not have the opportunity to make themselves look good because they were instructed to respond relative to an “at work” context. For example, test-takers may have responded in a more socially desirable way to items such as “I am intrigued by the patterns I find in art and nature” if they were not instructed to respond relative to an “at work” context.

This highlights the fact that I assessed participants’ procedural justice perceptions at the whole test level and not at the level of individual dimensions. That is, the procedural justice perceptions of one or more of the NEO personality dimensions (e.g., Conscientiousness) may have been more positive for the FOR condition than the standard NEO. In contrast, personality dimensions such as “Openness to Experience”, which was measured by many of the items that could not be easily altered to reflect an “at work” context, may have caused participants to evaluate the whole FOR NEO as less procedurally fair than the standard NEO. This is an issue for future research.

In sum, the findings from analyses for Hypotheses 4 and 5 indicate that an “at-work” FOR of a personality test may not positively influence procedural fairness perceptions, but it may be associated with greater criterion validity.

Hypotheses 6: Procedural justice perceptions and test-taking motivation.

Regression analyses showed that procedural justice perceptions of the NEO test (FOR and standard), and WPT were significantly related to participants’ test-taking motivation. Specifically, for the NEO test, participants’ perceptions of propriety of questions were positively related to post-test motivation. In other words, participants’ perceptions of appropriateness and respectfulness of questions were positively related to how motivated they were to perform well on the test (after controlling for pre-test motivation). However, job-relatedness/content was negatively related to post-test motivation, which was opposite from what was hypothesized. This is also inconsistent with findings from Chan et al. (1997), who found a positive relationship between perceptions of job-relatedness and test-taking motivation. However, Chan et al. (1997), did not separate job-relatedness/content from job-relatedness/predictive. Therefore, consistent with Gilliland’s (1993) theory, the current results provide evidence that how predictive of job performance a test is perceived to be may be theoretically different from how related the content of the test is to the content of the job. It also adds support to the contention that job-relatedness/content and job-relatedness/predictive should be measured separately in research because their effects may be quite different (Bauer et al., 1998b; Smither et al., 1993).

In addition, the negative relationship that job-relatedness/content of the NEO had with post-test motivation may be due to the fact that participants were not applicants, or it may be a result of statistical suppression, such that other variables in the regression equation spuriously altered the relationship that job-relatedness/content had with post-test motivation. Specifically, contrary to the multiple regression results, Table 5 shows the zero-order correlation between job relatedness/content (NEO) and post-test motivation (NEO) is non-significant but positive. Therefore, the negative beta weight may be the result of statistical suppression due to the effects of other variables in the regression equation.

For the WPT, perceptions of opportunity to perform and propriety of questions predicted post-test motivation after controlling for pre-test motivation. Therefore, participants who felt the WPT gave them a good opportunity to perform were also more likely to be motivated to do well on the test. In addition, such as the case with the NEO, participants' perceptions of appropriateness and respectfulness of WPT questions were positively related to how motivated they were to perform well on the test. Generally, these findings are consistent with previous studies (e.g., Chan et al., 1997; Schmit & Ryan, 1992; Smither et al., 1993) and provide further support for Gilliland's (1993) theory.

Hypotheses 6: Procedural justice and test-taking self-efficacy. Analyses also revealed that procedural justice perceptions of the NEO test were not significantly related to participants' test-taking self-efficacy, despite the fact that the regression weight for propriety of questions was significant. However, the lack of model

significance when a regression weight is significant is likely due to multicollinearity and degrees of freedom (Pedhazur, 1982). Predictor variables that do not account for unique variance in the criterion use up degrees of freedom, thus lessening the statistical power for detecting model significance. However, a  $t$  test evaluates only one predictor at a time, and thus is not influenced by the effects of model multicollinearity. Generally, however, this finding is contrary to previous research that has established a positive relationship between procedural justice perceptions and test-taking self-efficacy (Bauer et al., 1998a).

However, the results showed that procedural justice perceptions of the WPT test were significantly related to participants' test-taking self-efficacy. Specifically, propriety of questions was positively related to test-taking self-efficacy, such that participants' perceptions of appropriateness and respectfulness of questions were positively related to how confident they were about performing well on the test. Conversely, job-relatedness/content was negatively related to test-taking self-efficacy. This is contrary to previous research that has found a positive relationship between procedural justice perceptions and test-taking self-efficacy (Bauer et al., 1998a; Gilliland, 1994). However, Bauer et al. (1998a) and Gilliland (1994) did not measure job relatedness/content separate from job-relatedness/predictive when they established a relationship between perceptions of job relatedness and test-taking self-efficacy. Therefore, the current finding adds to the understanding of the relationship between procedural justice and test-taking self-efficacy by showing that one dimension of

procedural justice was positively related to test-taking self-efficacy and one dimension was negatively related.

Again, the fact that the zero-order correlation between job-relatedness/content and test-taking self-efficacy was non-significant indicates the possibility of statistical suppression. Consequently, the negative beta weight for job-relatedness/content may be the result of statistical suppression due to the effects of other variables in the regression equation.

Hypotheses 6: Procedural justice perceptions and test performance. Finally, procedural justice perceptions were significantly related to participants' Conscientiousness scores and WPT scores. Specifically, for the WPT test, job-relatedness/content, opportunity to perform, and propriety of questions were significantly related to participants' test scores. Opportunity to perform and propriety of questions were positively related to WPT scores, such that participants had higher WPT scores if they felt the test gave them a better opportunity to perform or they perceived the WPT test questions to be more appropriate and respectful. Conversely, job-relatedness/content was negatively related to WPT scores, such that participants received a higher WPT score if they felt the content of WPT items were not reflective of job content. This finding may be simply due to better discernment of job-relatedness/content by those who score higher on the WPT. Once more, the fact that the zero-order correlation between job-relatedness/content and WPT score was non-significant indicates the possibility of statistical suppression, such that the negative

beta weight of job relatedness/content was due to the effects of other variables in the regression equation.

Nonetheless, for the most part, these findings support previous research (i.e., Chan, 1997; Smither et al., 1993) that established a positive relationship between procedural justice perceptions (i.e., perceived predictive validity) and cognitive ability test performance. However, until the present study, this relationship has never been examined using more complex measures of fairness based on Gilliland's (1993) model of selection system fairness.

For the NEO test, propriety of questions was positively related to Conscientiousness scores, such that participants with higher Conscientiousness scores perceived the NEO test questions to be more appropriate and respectful. Although previous research (i.e., Chan, 1997; Smither et al., 1993) has shown a positive relationship between procedural justice perceptions (i.e., perceived predictive validity) and cognitive ability test performance, the current study is the first to show this relationship with personality test performance.

In summary, I generally found that procedural justice perceptions were related to participants' test-taking motivation, test-taking self-efficacy, and test performance. However, where statistically significant, job-relatedness/content had a negative relationship with these variables. Comparison of zero-order correlations and betas from the regression equation suggest that this may have been a result of statistical suppression. Until now, however, these relationships had not been established with a

personality inventory. Furthermore, participants in the current study were job incumbents and not job applicants.

Hypothesis 7: Moderating effects of procedural justice perceptions on WPT validity. Hierarchical regression analysis revealed that there was no significant interaction between cognitive ability and procedural justice when explaining variance in task performance. Therefore, procedural justice perceptions of the WPT did not moderate the relationship between cognitive ability and task performance. Previous research on test-taking motivation (i.e., Schmit & Ryan, 1992) would suggest that procedural justice perceptions might alter the validity of cognitive ability. Schmit and Ryan (1992) found that the criterion-related validity of the cognitive ability test was higher for participants with more positive test-taking motivation, but they did not examine the validity-moderating effects of perceived procedural justice. In any case, the moderating effect of procedural justice on the validity cognitive ability was not supported by the present study.

Research question: Moderating effect of procedural justice perceptions on personality validity. Hierarchical regression analysis revealed that the interaction between Conscientiousness and procedural justice was statistically significant. Applicant fairness perceptions of the NEO did moderate the relationship between a Conscientiousness and contextual job performance. The analysis revealed that higher procedural fairness perceptions led to greater validity of Conscientiousness. This finding is consistent Gilliland's (1993) theory; however, the findings from previous research regarding the effects of applicant perceptions on validity are not clear. In

fact, Schmit and Ryan (1992) suggest that positive applicant perceptions of a personality test may actually decrease its validity. They found that the criterion-related validity of a personality test was higher for participants with less positive test-taking motivation. The present study is the first to find that increased fairness perceptions leads to greater test validity.

It is also important to again point out that participants evaluated the procedural justice of the whole NEO measure and did not provide ratings for fairness for just the Conscientiousness scale. Therefore, there may have been different results if participants' assessment of procedural justice was measured separately for the Conscientiousness dimension, an issue future research should address.

## CHAPTER IX

## The Results of Applying a Systems Approach to Personnel Selection

The purpose of applying a systems approach to personnel selection is to advance our understanding of the interactions and complexities of its subsystems and their elements. This requires careful attention to the interdependencies of the various elements (or subsystems) of a selection system (e.g., performance criteria, predictors, applicant reactions, legal guidelines) that may influence the quality of selection decisions (Cascio, 1991). Given a particular perceptual stance, a personnel selection system is a component of an employment process suprasystem, such that selection methods used to gather job-relevant information about applicants are considered a subsystem (see Lendaris, 1986). Therefore, elements of a selection system are recognized as subsystems relative to a system of personnel selection.

Three Subsystems of a Selection System

The current dissertation investigated the interrelationships among three subsystems of a selection system: 1) multidimensional job performance (i.e., task and contextual performance); 2) job performance predictors (i.e., cognitive ability and personality); and 3) applicant reactions to selection methods (i.e., the effects of procedural justice perceptions). The discussion of the research results focuses on the subsystems, with the personnel selection system as the context.

Job performance predictors. First, this study presented empirical evidence to better understand the antecedents (i.e., cognitive ability and personality) of multidimensional job performance (i.e., task and contextual performance). The results

suggest that cognitive ability and personality contribute differently as antecedents to job performance. In addition, the data suggest that personality is complex in its prediction of job performance, such that altering the frame-of-reference (FOR) of a personality measure changes its relationship to job performance. Specifically, framing a personality test in an “at work” context will lead to a stronger relationship with job performance. Generally, the present findings support the notion that cognitive ability and personality are elements or subunits operating together to manifest the perceived attributes of a job performance predictor subsystem (see Lendaris, 1986).

Multidimensional job performance. Another objective of this dissertation was to analyze empirical evidence to better understand the multidimensionality of job performance. The results support the theory that overall managerial job performance is a function of both task performance and contextual performance (Borman & Motowidlo, 1993; Motowidlo, Borman, & Schmit, 1997; Motowidlo & Borman, 1997, Motowidlo & Van Scotter, 1994). In other words, empirical evidence from the present research and earlier studies supports the notion that task and contextual performance are elements or subunits of a job performance subsystem. They operate together to manifest the perceived attributes of a job performance subsystem (see Lendaris, 1986). For example, if a perceived attribute of job performance for airline managers is on-time planes, then task performance is insufficient for describing the property on-time performance. In order to have on-time performance, managers at airports need to contribute in ways that promote a healthy interpersonal context that serves as the catalyst for task activities such as checking-in customers quickly.

Applicant reactions to selection methods. Data were also analyzed to better understand how an applicant reactions subsystem interacts with other subsystems. There is evidence that the procedural justice element has a complex relationship with elements of a job performance predictor subsystem. Participants' procedural justice perceptions moderated the validity of the personality test. Therefore, the present study supports the notion that applicant reactions is a subsystem of a personnel selection system, such that procedural justice perceptions operates together with other subsystems (e.g., test validity) to manifest the perceived attributes of a personnel selection system (e.g., job performance prediction). In addition, past research (e.g., Bauer et al., 1998a) shows that justice perceptions are related to important outcomes (e.g., willingness of applicants to recommend an organization to others). Therefore, applicants' justice perceptions of a selection system may be an element or subsystem of a larger employment process system or suprasystem, such that they may impact other aspects of the employment process (e.g., employee development).

It is important to note that there are other elements or subunits contained within the subsystems described in this study that contribute to their subsystems' perceived attributes. Moreover, elements of the subsystems may be systems themselves. For example, Van Scotter and Motowidlo (1996) proposed that contextual performance has at least two distinct elements: interpersonal facilitation and job dedication. Therefore, contextual performance can be perceived as either a system with its own elements or a sub-subsystem of a personnel selection system, depending on a particular perceptual stance (see Lendaris, 1986).

### The Interactions of the Three Subsystems

An employment process suprasystem is the context for a personnel selection system, which is the context for the three subsystems described. Therefore, personnel selection is considered a system within an employment process suprasystem that contains other human resource-related systems, such as training, recruitment, and performance appraisal. These systems work together to manifest properties of the employment process suprasystem, such as the retention of highly skilled employees and a capable workforce. Similarly, personnel selection is a complex system consisting of interdependent subsystems (multidimensional job performance, job performance predictors, and applicant reactions to selection methods) that work together to manifest properties of a selection system, such as the acquisition of qualified and high-potential employees. A systems approach to selection system development considers the interactions of the relevant subsystems. As discussed above, each of these complex subsystems (e.g., applicant reactions) has interdependent elements (e.g., individual dimensions of procedural justice) that work together to manifest the properties of the subsystem, such as overall fairness perceptions.

The findings from this dissertation support Landy, Shankster-Cawley, and Moran's (1995) contention that adopting a systems approach to personnel selection will assist in the understanding the interaction of antecedent conditions (e.g., ability, experience, and personality) and consequence conditions (e.g., task performance, contextual performance, and individual development). In doing so, it suggests that the traditional view of selection and placement activities as neutral technologies to be

inserted into a system in a rational manner without consideration of context should be abandoned.

Interactions: Applicant reactions with job performance predictors and multidimensional job performance. As noted, a systems approach to personnel selection suggests that applicant reactions to employee selection procedures is an important element (or subsystem) of a selection system. Accordingly, a systems approach to developing a selection system highlights the effects that applicant reaction may have on valued outcomes (e.g., predictor validity, job acceptance intentions). Applicant reactions can affect the quality of selection decisions as well as other important outcomes (e.g., job acceptance intentions). In addition, there are interactions among the subsystems of a selection system.

The current investigation showed that an applicant reactions subsystem interacted with a job performance subsystem and a job performance predictor subsystem. Specifically, participants' procedural justice perceptions were significantly different for different versions of the NEO (i.e., FOR and standard). The standard NEO was perceived as more procedurally just. Furthermore, procedural justice perceptions were related to cognitive ability and personality test performance and moderated the relationship between a job performance predictor subsystem (i.e., personality) and a job performance subsystem (i.e., contextual performance).

Finally, procedural justice perceptions were significantly related to other important elements of a personnel selection system (i.e., test-taking motivation, test-taking self-efficacy, test performance). These findings point out that there are other

elements or subsystems of a selection system that operate together with other elements and/or subsystems to manifest the perceived attributes of a personnel selection system. Figure 9 depicts three subsystems of a selection system and the relationships among them that were established in this dissertation.

The relationship between job performance predictors and multidimensional job performance. The results of the current research show that a job performance predictor subsystem interacted with a multidimensional job performance subsystem. The antecedents as defined by the job performance predictor subsystem were different in predicting dimensions of a job performance subsystem. Specifically, cognitive ability and personality contributed differently as antecedents to task and contextual job performance. Furthermore, personality was found to be complex in its prediction of job performance, such that the frame-of-reference (FOR) of a personality measure changes its relationship to job performance.

Finally, the systems approach of the current investigation revealed other relationships worth noting. Post-test motivation WPT and post-test self-efficacy WPT were significantly related to WPT performance. Likewise, post-test motivation NEO and post-test self-efficacy NEO were significantly related to NEO dimension scores. Therefore, participants' drive to do well on the tests and their belief that they can do well was related to how well they did. These findings emphasize the fact that there are many elements and subsystems that affect the efficacy of a selection system.

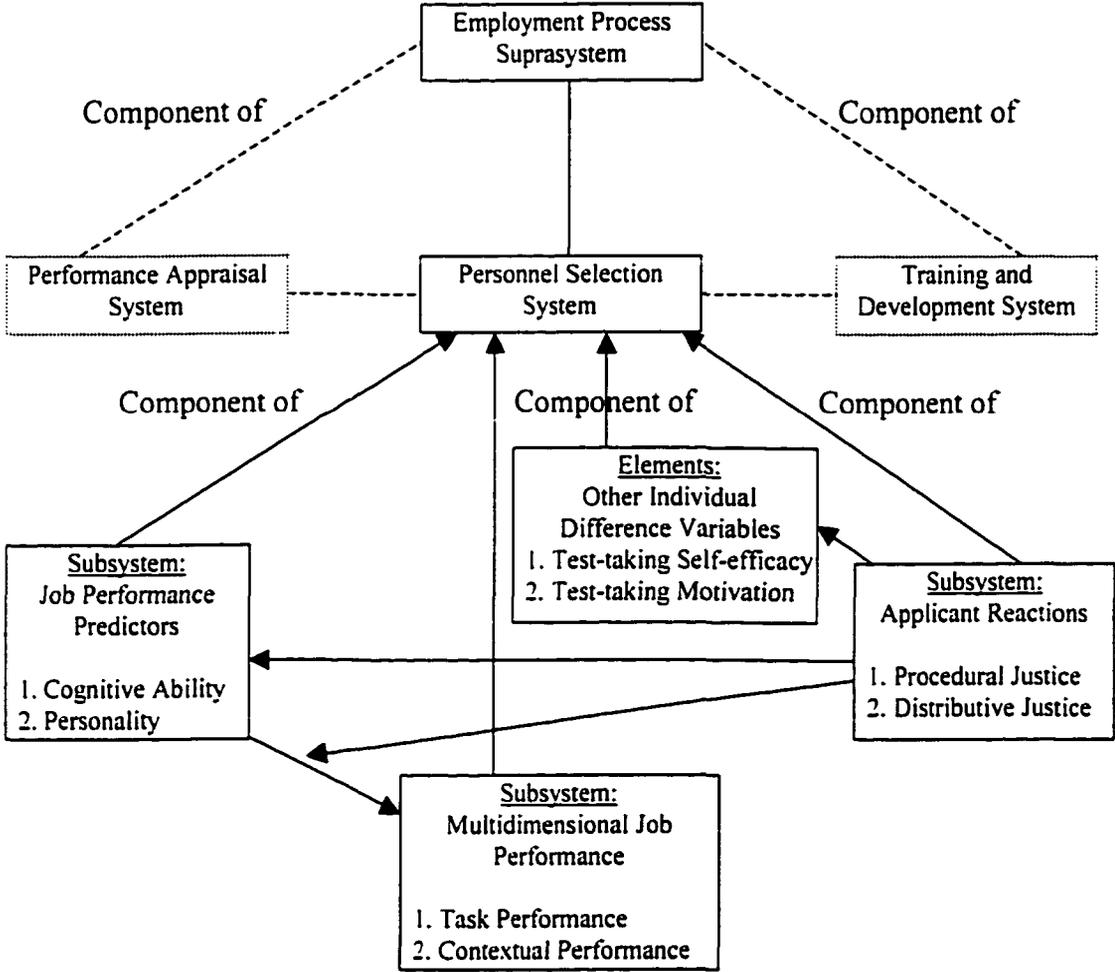


Figure 9. A systems perspective of examined relationships. All unlabeled lines imply (non-statistical) interaction. Arrowheads imply direction of impact as considered in the present research.

## CHAPTER X

## Implications for Research and Practice

Investigators have only recently approached personnel selection research with a systems perspective in mind. There is still much to learn. In addition, few organizations are aware of or take into account the complexities inherent in a selection system. Accordingly, the current research findings have several implications for research and practice.

Implications for PracticeMultidimensional Job Performance

There are two main implications regarding the extent to which task and contextual performance contribute uniquely to overall performance. The results imply that managers who evaluate the job performance of others seem to recognize those job behaviors not related to the technical aspects of the job as important for overall job performance. Contextual behaviors such as following rules, volunteering, endorsing organizational objectives, and encouraging cooperation support the notion that the social context in which task behaviors are performed is important to overall job performance and for organizational effectiveness. Therefore, it may be inappropriate and possibly detrimental for organizations to equate only task performance with overall job performance. Adopting a multidimensional perspective of job performance advances the understanding of an individual's overall worth to an organization and has implications for performance measurement, performance development, and career advancement. This is also apparent from recent research, which found that in addition

to task performance, contextual performance significantly influenced pay increase decisions and promotion decisions (Kiker & Motowidlo, 1999), and that task and contextual performance have complex relationships with overall performance for different jobs (Conway, 1999).

The second implication regarding multidimensional job performance has to do with choosing the best predictors to explain performance. In other words, recognition of the multidimensional nature of performance has implications for determining the validity of selection measures and their impact on hiring outcomes. The current results show that there are different antecedents or predictors of each performance dimension. Contextual performance seems better predicted by personality measures, and task performance seems better predicted by cognitive ability. Therefore, the degree of observed test validity varies depending on the extent to which the strategy for selecting applicants is consistent with the definition of job performance adopted by a particular organization or for a particular job. For example, if an organization ignores the contribution of contextual performance to overall job performance, then the observed validity of personality variables will be diminished. On the other hand, the fact that many organizations do not specify contextual performance as an important criterion for success, but unknowingly allow it to influence overall job performance evaluations, provides an explanation for why personality (e.g., Conscientiousness) often predicts overall job performance, as seen in the current investigation.

Furthermore, the definition of job performance can vary for one particular job depending on how work is organized (e.g., individual vs. team), characteristics of the

organization (e.g., structure, policies), and the leadership of the organization (e.g., espoused values; Murphy & Shiarella, 1997). Therefore, organizing the job performance domain into task and contextual performance helps practitioners better understand the dimensions of job performance and helps them with choosing the best predictors of complex criteria. In addition, the present study widens the scope of job types to which this job performance model applies by demonstrating that cognitive ability is an antecedent of supervisory task performance and personality is an antecedent of supervisory contextual performance.

#### FOR Effects on Validity

Notwithstanding the marginal statistical significance, another implication of these findings is that criterion-related validity (and consequently, utility) of personality tests is enhanced when test-takers use an “at work” frame-of-reference when responding to test items. Likewise, if different applicants use different FORs it will lessen the predictive efficiency of a personality test. In other words, making self-presentation easier by using a more work-specific personality test appears to increase its validity and utility because error variance is reduced when applicants are able to focus on how they would behave in a work context. Therefore, test developers, personnel psychologists, and human resource professionals would do well to consider the frame-of-reference that applicants are using when responding to personality-related selection assessments. Specifically, validity and utility of personality tests for personnel selection are enhanced when applicants are provided with a specific FOR to

help them focus on work-related behaviors, such as when instructions and test items refer to a job-related FOR.

### Applicant Reactions

The implications of fairness perceptions to personality tests are not clear. First, the finding that applicant reactions moderated personality test validity may suggest to personnel psychologists and other human resource professionals that justice perceptions should be considered during test development and/or selection. The present study found that more positive procedural justice perceptions were associated with higher criterion-related validity of a personality test, and that an “at work” FOR personality test was perceived as less procedurally fair. Therefore, the current results might suggest that to increase operational validity of personality tests, selection specialists should find ways to increase applicants’ perceived procedural fairness. However, framing a personality test in an “at work” FOR may not be the way to do this.

Recall that the lack of procedural fairness of the FOR NEO was likely due to the fact that not all test items could be applied to an “at work” context. Assessment of the fairness perceptions of only the Conscientiousness dimension may have yielded different results. Consequently, assessing procedural justice perceptions of the whole test may have masked the true relationship that procedural justice perceptions of Conscientiousness had with validity. Therefore, more research is needed to better understand the interactions between procedural fairness and FOR for personality testing. For example, the findings from previous studies (e.g., Kravitz et al., 1996;

Smither et al., 1993) suggest that tests in general should be developed to be perceived as procedurally fair.

Therefore, to increase validity of personality tests used for personnel selection, developers should consider an "at work" FOR. However, if test developers are not careful to construct every test item with the FOR in mind, there may be a subsequent, but inadvertent decrease in perceived procedural justice.

### Limitations

The major drawback of the present study is that participants were job incumbents placed in a simulated hiring environment. In addition, as incumbents of an entry-level management job, participants' evaluations of tests and the results of subsequent analyses are not easily generalized to higher levels of management. Therefore, future research should examine the effects of frame-of-reference and applicant reactions using job applicants under actual selection situations for jobs at various organizational levels. However, for legal reasons, it would be difficult to compare two different FORs in an actual selection context.

The fact that procedural justice perceptions were assessed for the NEO-FFI as a whole, and some personality dimensions (e.g., Openness to Experience) were assessed with items that were not adaptable to an "at work" context may have produced unexpected results. For example, an item that asks test-takers to indicate the degree they appreciate poetry is not easily adaptable to a work-related context. Items like this may have given overall impressions that the test was not job-related. Therefore,

procedural justice perceptions of the FOR NEO may have been more positive if items that were easily applicable to the work context were administered.

The current study only focused on the validity of Conscientiousness since it is the personality dimension most studied in selection research. Other personality dimensions known to be predictive of job performance (e.g., Extraversion: see Barrick and Mount, 1991) should be explored for effects of FOR and applicant reactions.

Finally, perceived job autonomy may not have moderated personality test validity because it was not accurately measured. Only participants and not their managers rated job autonomy, and the items used to assess it did not consider the unique job of entry-level manager. Lastly, the size of this sample may not have provided the sufficient power to detect some effects, even though the a priori power analysis indicated sufficient statistical power.

#### Implications for Research

Future research should address these limitations and confirm the findings of the present research with data from other cognitive ability and personality tests. Future research should also include other jobs such as non-managers and members of upper-management.

#### Multidimensional Job Performance

Researchers should continue to examine job performance to identify distinct performance dimensions along with their antecedents. For example, Van Scotter and Motowidlo (1996) suggested that the contextual performance dimension contains at least two facets: interpersonal facilitation and job dedication. Furthermore, Conway

(1999) suggested that there may be different facets of contextual performance for managers and for non-managers. For example, job dedication may be more important for the contextual performance of managers than for non-managers (Conway, 1999). These dimensions of contextual performance for different jobs should be identified. Accordingly, personality constructs other than Conscientiousness (e.g., Extraversion) should be explored for their use in predicting contextual performance and other job performance dimensions. Furthermore, it is implied by its definition that task performance is different for different types of jobs. Research should therefore investigate the efficacy of predictors for different types of task performance. For example, there are various theories of cognitive ability (e.g., Kranzler, 1991; Thurstone, 1938). It is possible that particular components of cognitive ability are better than others at predicting task performance in particular jobs.

In addition, advancements in the dimensionality of job performance dimensions should be accompanied by advancements in how the performance dimensions are measured. These measures should rely on detailed job analyses to develop new criterion measures that are job-related. For example, Raymark, Schmit, and Guion (1997) have developed a job analysis form to be used in making hypotheses about personality predictors of job performance.

The results of this study add to a short list of findings from other empirical studies (e.g., Borman et al., 1995; Campbell, 1990b, Campbell et al., 1993; Kiker & Motowidlo, 1999; MacKenzie et al., 1991; Motowidlo & Van Scotter, 1994) regarding the multidimensional nature of job performance. However, in addition to the current

investigation, only one study (i.e., Motowidlo & Van Scotter, 1994) measured contextual performance in a field setting with a scale specifically designed to do so.

Predictor validity. The current findings regarding the predictors of job performance domains indicate that the degree of test validity depends partly on how job performance is defined in a particular job or organization. Many validity studies inappropriately equate task performance with overall job performance (Hunter, 1986; Murphy, 1996). This perspective fails to acknowledge that the domain of job performance also includes a wide range of behaviors, such as teamwork and organizational citizenship (i.e., contextual performance), which have different antecedents (Borman & Motowidlo, 1993). Therefore, future research should continue to examine contextual performance and its implications for the validity of selection measures.

#### FOR and Personality Test Validity

Given the marginal statistical significance for Hypothesis 4, research is needed to confirm the current findings and to specify the mechanisms that explain why personality tests with an “at work” frame-of-reference may lead to greater criterion validity. For example, the type of job may impact whether the “at work” FOR enhances personality test validity. Predictive validity of an “at work” frame-of-referenced personality test may be enhanced in jobs associated with a high degree of autonomy.

In addition, the role of individual differences should be explored. For example, Schmit et al. (1995) suggest that other moderators, such as self-monitoring, may help

explain the effects of frame-of-reference (i.e., why applicants use different frames of reference). In a personnel selection situation, high self-monitors, who rely more on the immediate situation to guide their behaviors, may be more likely to refer to work-related experiences (i.e., an “at work” frame-of-reference) than low self-monitors when responding to unaltered personality items. Therefore, providing an “at work” frame-of-reference to test items may provide low self-monitors the context that allows them to more accurately indicate how they would behave at work.

Negative fairness perceptions of the FOR NEO. The current results show that the degree of personality (i.e., Conscientiousness) test validity varies depending on the frame-of-reference that test-takers have when responding to the items. In a similar study, Schmit et al. (1995) suggested that the moderating effect of frame-of-reference on personality validity was due to face valid test items that provided a specific situation where individuals’ behaviors were more predictable. However, they did not assess whether in fact their altered test items were actually perceived as more face valid by their student sample.

The present findings suggest that simply altering existing personality items to reflect an “at work” context will not necessarily lead to greater perceived face validity. In fact, such items in the present study were perceived as less procedurally fair. However, face validity and procedural justice are not synonymous. Face validity refers to the extent to which test items appear to measure a construct that is meaningful to laypersons or typical examinees (Crocker & Algina, 1986) and is only one dimension of fairness. Procedural justice refers to the fairness of procedures used to make

decisions (Gilliland, 1993). Therefore, it may be possible for individuals to perceive a test as face valid but not procedurally fair in other ways. Future research should examine the possibility that an altered FOR can be perceived as more face valid than a standard personality test but not as procedurally fair.

In addition, it is important to note that procedural justice perceptions were assessed for the NEO-FFI (FOR and standard) as a whole, and not only for the one dimension (e.g., Conscientiousness). As such, it is conceivable that the five personality dimensions measured could be associated with varying degrees of perceived procedural justice. As noted, some of the dimensions (e.g., Openness to Experience) contain items that are not readily altered to reflect an “at work” context. Consequently, the FOR NEO being perceived as having less procedural justice than the standard NEO may have been due to participants’ reactions to those items from certain subscales. In other words, the Conscientiousness dimension of the FOR NEO may not have been perceived as less procedurally fair than the Conscientiousness dimension of the standard NEO if it had been measured separately. As a result, the moderating effect of procedural justice on NEO validity may have been different (e.g., been even stronger). Therefore, future research should explore the possibility that dimensions being assessed in one personality test may have varying degrees of procedural justice, and that perceived procedural justice may be positively and negatively influenced when the FOR of a personality test is altered. In addition, research should examine FOR effects on procedural justice without personality test items that cannot be easily altered to an “at work” FOR. Furthermore, the moderating

effects of fairness on the validity of particular personality dimensions rather than for the whole personality test.

Generally, the finding that a context-specific personality test (i.e., “at work”) alters procedural justice perceptions fills a gap in the literature by demonstrating that not all personality tests are equivalent in terms of applicant reactions. In addition to frame-of-reference, future research should identify other personality test characteristics (e.g., response format) that may affect both procedural justice and distributive justice perceptions.

### Applicant Reactions

The current findings suggest that individual differences in procedural justice, test-taking motivation, and test-taking self-efficacy, should not be subsumed under the random error component of test performance because they do not always behave non-systematically (c.f., Chan, 1997). Research should continue to investigate the relationship between applicant reactions and test-taking motivation, test performance, test-taking self-efficacy, and test validity. Moreover, research should investigate the degree to which these attitudes about testing can be manipulated and the ensuing effect that may produce.

For example, research has found that there are differences in applicant reactions by ethnicity (Chan, 1997; Truxillo & Hunthausen, 1999). Consequently, moderating effects of applicant fairness perceptions may lead to differential prediction of job performance. Future research should investigate this possibility.

Applicant reactions and test validity. The current study examined the impact of frame-of-reference and procedural justice perceptions on the validity of Conscientiousness. Future research should also examine similar hypotheses with other dimensions of personality known to predict job performance (e.g., Extraversion; see Barrick and Mount, 1991). Furthermore, similar research should be done with smaller personality constructs than from the Big Five dimensions.

Research has found that cognitive ability tests also vary on perceived fairness (e.g., Smither et al., 1993). Finding that applicant reactions did not affect the validity of a cognitive ability test indicates the accuracy of prediction of job performance is not affected by procedural justice perceptions. However, the current study did collect data from actual job applicants. Therefore, future research should continue to examine the possible effects that applicant reactions may have on the validity of cognitive ability using real applicants.

Job-relatedness/content. The present findings confirm that there are at least two procedural justice dimensions of job-relatedness. Job-relatedness/predictive refers to test-takers' perceptions of how well a test will forecast performance on the job, and job-relatedness/content refers to how well the content of a test reflects the content of a particular job (Bauer et al., 1998b). As seen in the present findings these two constructs act differently on important outcomes (i.e., test-taking self-efficacy, test performance). Perhaps due to statistical suppression, job-relatedness/content was negatively associated with test-taking self-efficacy and test performance, while job-relatedness/predictive had no relationship with these constructs. In addition,

perceptions of job-relatedness/content were greater for the standard NEO than the FOR NEO. Together, these results highlight the need to measure these procedural justice dimensions separately. Future research should continue to measure these dimensions separately and explore differences between them as antecedent variables, outcome variables, and moderator variables.

### Conclusion

In sum, this dissertation demonstrates that there are many complex relationships within and between subsystems of a personnel selection system. The current study contributes to, and improves on, research in several ways. First, the dissertation uses field data to confirm that supervisory job performance is multidimensional. Moreover, at least two performance dimensions (i.e., task and contextual performance) have different antecedents (i.e., cognitive ability and personality). Second, this study supports Schmit et al.'s (1995) findings regarding the effect of FOR on the validity of a personality test. Providing test-takers of a personality test with a specific context does in fact seem to increase the accuracy of predicting behavior. Third, a more context-specific personality test may be perceived as less procedurally fair. However, high fairness perceptions may lead to more accuracy in predicting job behaviors. Therefore, the current findings indicate that personality tests are not created equally with regard to frame-of-reference and justice perceptions, and that frame-of-reference and procedural justice perceptions affect personality test validity. Lastly, this dissertation demonstrates that a systems perspective of personnel selection brings together branches of relevant research and

aids in identifying and understanding the inherent interactions and complexities of a selection system.

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Appendix A

Participant Cover Letter and Informed Consent Form

Dear Customer Service Manager:

The purpose of this project is to determine the effectiveness of two selection tests that may be used for hiring Customer Service Managers. In order to do that, we would like you to take the tests and give your opinion about them.

You **will not** be asked to put your name or employee number on any of the testing materials. However, you will be asked to put your name on a separate sheet of paper, and your manager will be asked to share your job performance ratings with the researcher (in order to determine the tests' validity).

Attached is an informed consent form explaining the purpose of the study and your involvement. Participation is strictly voluntary and all information collected is for **research purposes only**. It will be kept confidential and **will not** be placed in personnel files. Only the researcher (John Hunthausen) will have access to the data. The final report of this project will contain only group-level data.

Preliminary results of this project should be completed by April 1, 1999. A final report on the results of this project will be shared with the SVP of Domestic Field Services. A summary of the results will also be available from John Hunthausen upon request.

This is an opportunity for you to affect the quality of future managerial employees. We value and need your help. If you have any questions concerning this study, or its results, please feel free to contact John Hunthausen at ICS 967-3998. You may also contact the Chair of the Human Subjects Research Review Committee, Office of Research and Sponsored Projects, Cramer Hall, Portland State University, Portland, OR 97207, (503) 725-3417. In addition, you may contact Professor Donald Truxillo, Department of Psychology, Portland State University, (503) 725-8182.

Attached are the tests and questionnaires. The whole process should take at most 45 minutes.

Thank you very much for your participation.

Sincerely,

John Hunthausen  
Consultant, Organization Performance & Employee Development  
MD 5110, HDQ  
ICS 967-3998

Informed Consent Form

I, \_\_\_\_\_, agree to take part in this test validation research project.

I understand that the study involves taking two tests and relating my test score to my job performance ratings. Thus, in addition, I consent to my manager sharing my job performance ratings with John Hunthausen (the investigator).

I understand that, because of this study, I will need to give approximately 45 minutes of my work time. I have also spoken to the researcher, John Hunthausen, about this study; he has offered to answer any questions about the study and what I am required to do. The researcher has promised that my responses will be kept confidential to the extent permitted by law and that the names of all people in the study will remain confidential. Specifically, I understand that my individual responses will not be shared with my manager or any other employee of [company name] other than the researcher, John Hunthausen. While John Hunthausen is an [company name] employee, he will not have access to subjects' names or the list of matching identifiers after data are entered into a data base.

I may not receive any direct benefit from taking part in this study. However, this project may increase knowledge that may help others in the future (e.g., a valid selection system for managers).

I understand that I do not have to take part in this study and that participation will not affect my employment. I may discontinue my participation in the study at any time.

I have read and understood the above information and agree to take part in this study.

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

If you have any concerns or questions about this study, you may contact the Chair of the Human Subjects Research Review Committee, Office of Research and Sponsored Projects, Cramer Hall, Portland State University, Portland, Oregon, 97207, (503) 725-8182.

## GENERAL INSTRUCTIONS

The two tests that you will be asked to take are: 1) the Wonderlic Personnel Test; and 2) the NEO-FFI. You will also be asked some questions prior to taking each test, and at the end. Most of these questions have to do with your opinion of each test. Some of the questions have only subtle differences and may seem redundant. However, all the questions are important to the research objectives.

The Wonderlic Personnel Test is a 12-minute timed test consisting of 50 multiple-choice and fill-in-the-blank questions. The questions include word comparisons, following directions, number comparisons, and problems requiring mathematics or logic solutions. The researcher has a stop watch and will inform you when timing of test begins and ends.

The NEO-FFI is a non-timed 60-item measure that assesses normal adult personality. It takes about 10 to 15 minutes to complete.

You will be given specific verbal and written instructions for each test and questionnaire.

Appendix B

Pre-Test Measure

## Pre-Test Questions

Please CIRCLE your response to each of the items below.

|   | Strongly<br>Disagree | Disagree | Neither<br>Agree or<br>Disagree | Agree | Strongly<br>Agree |
|---|----------------------|----------|---------------------------------|-------|-------------------|
| 1. I want to do well on these tests.                                | 1                    | 2        | 3                               | 4     | 5                 |
| 2. I will try my best on these tests.                               | 1                    | 2        | 3                               | 4     | 5                 |
| 3. I want to be among the top scorers on these tests.               | 1                    | 2        | 3                               | 4     | 5                 |
| 4. I will push myself to work hard on these tests.                  | 1                    | 2        | 3                               | 4     | 5                 |
| 5. I care how I do on these tests.                                  | 1                    | 2        | 3                               | 4     | 5                 |
| 6. I will put a lot of effort into these tests.                     | 1                    | 2        | 3                               | 4     | 5                 |
| 7. While taking these tests, I will concentrate and try to do well. | 1                    | 2        | 3                               | 4     | 5                 |
| 8. I am confident in my ability to do well on tests.                | 1                    | 2        | 3                               | 4     | 5                 |
| 9. When it comes to taking tests, I generally do well.              | 1                    | 2        | 3                               | 4     | 5                 |
| 10. I tend to do better on tests than most people.                  | 1                    | 2        | 3                               | 4     | 5                 |

Appendix C

Personality Test Instruction Sheet

## Testing Instructions for the NEO Five-Factor Inventory

The NEO Five-Factor Inventory is a potential pre-employment screening device for selecting new CSMs. It consists of 60 statements that you respond to by selecting an option that best represents your opinion.

### IMPORTANT:

- For each of the 60 items on the test, think about how you are AT WORK in general.

### FOR EXAMPLE:

⇒ Item # 22 reads: “I like to be where the action is.” When responding to this item, think about the way you generally are AT WORK.

In addition to the instructions described here, please read the instructions provided on the front cover of the test booklet.

### Testing Instructions for the NEO Five-Factor Inventory

The NEO Five-Factor Inventory is a potential pre-employment screening device for selecting new CSMs. It consists of 60 statements that you respond to by selecting an option that best represents your opinion. Please read the instructions on the front cover of the test booklet.

Appendix D

Post-Test I Measure

Post-Test 1 Questions

Think about the test you just completed when you circle your response to each of the items below.

|   | Strongly<br>Disagree | Disagree | Neither<br>Agree or<br>Disagree | Agree | Strongly<br>Agree |
|---|----------------------|----------|---------------------------------|-------|-------------------|
| <b>Job-Relatedness</b>  |                      |          |                                 |       |                   |
| 1. It would be clear to anyone that this test is related to the Customer Service Manager job. | 1                    | 2        | 3                               | 4     | 5                 |
| 2. The content of the test was clearly related to the Customer Service Manager job.           | 1                    | 2        | 3                               | 4     | 5                 |
| 3. Doing well on this test means a person can do the Customer Service Manager job well.       | 1                    | 2        | 3                               | 4     | 5                 |
| 4. A person who scores well on this test will be a good Customer Service Manager.             | 1                    | 2        | 3                               | 4     | 5                 |
| <b>Opportunity to Perform</b>   |                      |          |                                 |       |                   |
| 5. This test gave me the chance to prove myself.  | 1                    | 2        | 3                               | 4     | 5                 |
| 6. I could really show my skills and abilities through this test.                             | 1                    | 2        | 3                               | 4     | 5                 |
| 7. This test allowed me to show what my job skills are.                                       | 1                    | 2        | 3                               | 4     | 5                 |
| 8. This test gives applicants the opportunity to show what they can really do.                | 1                    | 2        | 3                               | 4     | 5                 |
| 9. I was able to show what I can do on this test.   | 1                    | 2        | 3                               | 4     | 5                 |
| <b>Propriety of Questions</b>   |                      |          |                                 |       |                   |
| 10. Nothing in the content of the test offended me.   | 1                    | 2        | 3                               | 4     | 5                 |
| 11. The content of the test did not appear to be prejudiced.                                  | 1                    | 2        | 3                               | 4     | 5                 |
| 12. The test was not unfair.  | 1                    | 2        | 3                               | 4     | 5                 |
| 13. The test itself did not seem too personal or private.                                     | 1                    | 2        | 3                               | 4     | 5                 |
| 14. The content of the test seemed appropriate.   | 1                    | 2        | 3                               | 4     | 5                 |
| <b>Self-Presentation</b>  |                      |          |                                 |       |                   |
| 15. This test gives applicants the opportunity to give answers that make them look good.      | 1                    | 2        | 3                               | 4     | 5                 |

|  | Strongly Disagree | Disagree | Neither Agree or Disagree | Agree | Strongly Agree |
|--|-------------------|----------|---------------------------|-------|----------------|
| 16. It was easy to make myself look good on this test.   | 1                 | 2        | 3                         | 4     | 5              |
| 17. This test gives applicants the opportunity to tell employers what they want to hear.           | 1                 | 2        | 3                         | 4     | 5              |
| 18. I could easily see what they were looking for on this test.                                    | 1                 | 2        | 3                         | 4     | 5              |
| 19. It was obvious what the "correct" responses on this test were.                                 | 1                 | 2        | 3                         | 4     | 5              |
| Overall Fairness of this Test  |                   |          |                           |       |                |
| 20. I think that this test is a fair way to select people for the job of Customer Service Manager. | 1                 | 2        | 3                         | 4     | 5              |
| 21. I think that this test is fair.  | 1                 | 2        | 3                         | 4     | 5              |
| 22. Overall, this method of testing is fair.   | 1                 | 2        | 3                         | 4     | 5              |
| Other Opinions   |                   |          |                           |       |                |
| 23. I want to do well on these tests.  | 1                 | 2        | 3                         | 4     | 5              |
| 24. I will try my best on these tests.   | 1                 | 2        | 3                         | 4     | 5              |
| 25. I want to be among the top scorers on these tests.   | 1                 | 2        | 3                         | 4     | 5              |
| 26. I will push myself to work hard on these tests.  | 1                 | 2        | 3                         | 4     | 5              |
| 27. I care how I do on these tests.  | 1                 | 2        | 3                         | 4     | 5              |
| 28. I will put a lot of effort into these tests.   | 1                 | 2        | 3                         | 4     | 5              |
| 29. While taking these tests, I will concentrate and try to do well.                               | 1                 | 2        | 3                         | 4     | 5              |
| 30. I am confident in my ability to do well on tests.  | 1                 | 2        | 3                         | 4     | 5              |
| 31. When it comes to taking tests, I generally do well.  | 1                 | 2        | 3                         | 4     | 5              |
| 32. I tend to do better on tests than most people.   | 1                 | 2        | 3                         | 4     | 5              |
| 33. I believe I did well on the test I just took.  | 1                 | 2        | 3                         | 4     | 5              |
| 34. I believe that I will get a good score on the test I just took.                                | 1                 | 2        | 3                         | 4     | 5              |
| 35. Have you ever taken this test before? (circle one)   | YES               | NO       |                           |       |                |

Appendix E  
Post-Test 2 Measure

## Post-Test 2 Questions

Think about the test you just completed when you circle your response to each of the items below.

|   | Strongly<br>Disagree | Disagree | Neither<br>Agree or<br>Disagree | Agree | Strongly<br>Agree |
|---|----------------------|----------|---------------------------------|-------|-------------------|
| <b>Job-Relatedness</b>  |                      |          |                                 |       |                   |
| 1. It would be clear to anyone that this test is related to the Customer Service Manager job. | 1                    | 2        | 3                               | 4     | 5                 |
| 2. The content of the test was clearly related to the Customer Service Manager job.           | 1                    | 2        | 3                               | 4     | 5                 |
| 3. Doing well on this test means a person can do the Customer Service Manager job well.       | 1                    | 2        | 3                               | 4     | 5                 |
| 4. A person who scores well on this test will be a good Customer Service Manager.             | 1                    | 2        | 3                               | 4     | 5                 |
| <b>Opportunity to Perform</b>   |                      |          |                                 |       |                   |
| 5. This test gave me the chance to prove myself.  | 1                    | 2        | 3                               | 4     | 5                 |
| 6. I could really show my skills and abilities through this test.                             | 1                    | 2        | 3                               | 4     | 5                 |
| 7. This test allowed me to show what my job skills are.                                       | 1                    | 2        | 3                               | 4     | 5                 |
| 8. This test gives applicants the opportunity to show what they can really do.                | 1                    | 2        | 3                               | 4     | 5                 |
| 9. I was able to show what I can do on this test.   | 1                    | 2        | 3                               | 4     | 5                 |
| <b>Propriety of Questions</b>   |                      |          |                                 |       |                   |
| 10. Nothing in the content of the test offended me.   | 1                    | 2        | 3                               | 4     | 5                 |
| 11. The content of the test did not appear to be prejudiced.                                  | 1                    | 2        | 3                               | 4     | 5                 |
| 12. The test was not unfair.  | 1                    | 2        | 3                               | 4     | 5                 |
| 13. The test itself did not seem too personal or private.                                     | 1                    | 2        | 3                               | 4     | 5                 |
| 14. The content of the test seemed appropriate.   | 1                    | 2        | 3                               | 4     | 5                 |

|  | Strongly<br>Disagree | Disagree | Neither<br>Agree or<br>Disagree | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------------------------------|-------|-------------------|
| <b>Self-Presentation</b>   |                      |          |                                 |       |                   |
| 15. This test gives applicants the opportunity to fake answers to make them look good.             | 1                    | 2        | 3                               | 4     | 5                 |
| 16. It was easy to make myself look good on this test.   | 1                    | 2        | 3                               | 4     | 5                 |
| 17. This test gives applicants the opportunity to tell employers what they want to hear.           | 1                    | 2        | 3                               | 4     | 5                 |
| 18. I could easily see what they were looking for on this test.                                    | 1                    | 2        | 3                               | 4     | 5                 |
| 19. It was obvious what the "correct" responses on this test were.                                 | 1                    | 2        | 3                               | 4     | 5                 |
| Overall Fairness of this Test  | 1                    | 2        | 3                               | 4     | 5                 |
| 20. I think that this test is a fair way to select people for the job of Customer Service Manager. | 1                    | 2        | 3                               | 4     | 5                 |
| 21. I think that this test is fair.  | 1                    | 2        | 3                               | 4     | 5                 |
| 22. Overall, this method of testing is fair.   | 1                    | 2        | 3                               | 4     | 5                 |
| <b>Other Opinions</b>  |                      |          |                                 |       |                   |
| 23. I wanted to do well on these tests.  | 1                    | 2        | 3                               | 4     | 5                 |
| 24. I tried my best on these tests.  | 1                    | 2        | 3                               | 4     | 5                 |
| 25. I wanted to be among the top scorers on these tests..  | 1                    | 2        | 3                               | 4     | 5                 |
| 26. I pushed myself to work hard on these tests.   | 1                    | 2        | 3                               | 4     | 5                 |
| 27. I care how I did on these tests.   | 1                    | 2        | 3                               | 4     | 5                 |
| 28. I put a lot of effort into these tests.  | 1                    | 2        | 3                               | 4     | 5                 |
| 29. While taking these tests, I concentrated and tried to do well.                                 | 1                    | 2        | 3                               | 4     | 5                 |
| 30. I am confident in my ability to do well on tests.  | 1                    | 2        | 3                               | 4     | 5                 |
| 31. When it comes to taking tests, I generally do well.  | 1                    | 2        | 3                               | 4     | 5                 |
| 32. I tend to do better on tests than most people.   | 1                    | 2        | 3                               | 4     | 5                 |

|   | Strongly Disagree | Disagree     | Neither Agree or Disagree | Agree         | Strongly Agree     |
|---|-------------------|--------------|---------------------------|---------------|--------------------|
| 33. I believe I did well on the test I just took.   | 1                 | 2            | 3                         | 4             | 5                  |
| 34. I believe that I will get a good score on the test I just took.                                       | 1                 | 2            | 3                         | 4             | 5                  |
| 35. Have you ever taken this test before?(circle one)   | YES               | NO           |                           |               |                    |
| Questions About my Job  |                   |              |                           |               |                    |
| 36. My job requires a lot of problem-solving.   | 1                 | 2            | 3                         | 4             | 5                  |
| 37. You have to be able to solve problems to do my job.   | 1                 | 2            | 3                         | 4             | 5                  |
| 38. My job has a large problem-solving component.   | 1                 | 2            | 3                         | 4             | 5                  |
|   |                   | Very Little  | A Moderate Amount         |               | Very much          |
| 39. How much are you left on your own to do your own work?  | 1                 | 2            | 3                         | 4             | 5                  |
| 40. To what extent are you able to act independently of your supervisor in performing your job functions? | 1                 | 2            | 3                         | 4             | 5                  |
| 41. To what extent are you able to do your job independently of others?                                   | 1                 | 2            | 3                         | 4             | 5                  |
| 42. How free are you to do pretty much what you want on your job?   | 1                 | 2            | 3                         | 4             | 5                  |
| 43. How much opportunity for independent thought and action is there on your job?                         | 1                 | 2            | 3                         | 4             | 5                  |
| 44. How much control do you have over the pace of your work.  | 1                 | 2            | 3                         | 4             | 5                  |
|   | less than 1 year  | 1 to 3 years | 3 to 5 years              | 5 to 10 years | More than 10 years |
| 45. How long have you worked for American Airlines?   | 1                 | 2            | 3                         | 4             | 5                  |
| 46. How long have you been a CSM?   | 1                 | 2            | 3                         | 4             | 5                  |
| 47. What is your gender? (circle one)   | Male              | Female       |                           |               |                    |

48. With which one of the following racial/ethnic groups do you most identify?

|                  |                        |           |          |                 |       |
|------------------|------------------------|-----------|----------|-----------------|-------|
| African American | Asian/Pacific Islander | Caucasian | Hispanic | Native American | Other |
| 1                | 2                      | 3         | 4        | 5               | 8     |

49. What is the highest education level that you have attained?

|                                       |              |   |                   |                 |
|---------------------------------------|--------------|---|-------------------|-----------------|
| High school diploma/GED or equivalent | Some College | Associates Degree or Vocational/Technical Certificate | Bachelor's Degree | Graduate Degree |
| 1                                     | 2            | 3   | 4                 | 5               |

Next, please indicate how well you believe you perform in your job.

First, please rate yourself on Task Job Performance. Task performance is the proficiency with which you perform activities that are formally recognized as part of you job. These are activities that relate to objectives of your job such as: ensuring on-time dependability, providing quality service, meeting profitability and cost control goals, ensuring operational compliance with government regulations, and providing employees with the necessary tools and resources to meet operational performance goals.

|                           |      |                          |         |                       |             |
|---------------------------|------|--------------------------|---------|-----------------------|-------------|
|                           | Poor | Lacking or below average | Average | Good or above average | Exceptional |
| 50. Your Task Performance | 1    | 2                        | 3       | 4                     | 5           |

Second, please rate yourself on Contextual Job Performance. Contextual job performance is the degree with which you engage in activities that contribute to organizational effectiveness in ways other than successfully completing your job tasks. These are such things as: volunteering to do tasks that are not formally a part of the job, persisting with extra enthusiasm or effort to complete tasks successfully, helping and cooperating with others, following organizational rules and procedures even when they're not convenient, and endorsing, supporting and defending organizational objectives.

|                                 |      |                          |         |                       |             |
|---------------------------------|------|--------------------------|---------|-----------------------|-------------|
|                                 | Poor | Lacking or below average | Average | Good or above average | Exceptional |
| 51. Your Contextual Performance | 1    | 2                        | 3       | 4                     | 5           |

Please rate your overall job performance.

52.

|  |   |   |   |   |
|--|---|---|---|---|
| I do not meet standards for<br>job performance |   | I meet standards for job<br>performance |   | I exceed standards for job<br>performance |
| 1  | 2 | 3                                       | 4 | 5   |

53.

|  |   |   |   |   |
|--|---|---|---|---|
| I perform at a low level<br>compared to other CSMs |   | I perform at an average level<br>compared to other CSMs |   | I perform at a high level<br>compared to other CSMs |
| 1  | 2 | 3   | 4 | 5   |

54.

|   |   |   |   |   |
|---|---|---|---|---|
| I contribute less to station<br>effectiveness than most |   | I make an average<br>contribution to station<br>effectiveness |   | I contribute more to station<br>effectiveness than most |
| 1   | 2 | 3   | 4 | 5   |

Any comments? What do you think about these tests for selecting CSMs?

THANK YOU VERY MUCH FOR YOU TIME. IT'S GREATLY APPRECIATED.

Appendix F

Job Performance Evaluation Form

## SUPERVISOR Selection Project

Dear General Manager or Shift Manager:

The purpose of this project is to determine the effectiveness of two selection tests that may be used for hiring Supervisors. In order to do that, we need to collect base-line data. Supervisors have been volunteering to take the tests, but we also need job performance ratings to compare to the test data. Therefore, we would like you to complete the attached evaluation form(s) for the SUPERVISOR(s) identified.

By virtue of your receiving this letter, the SUPERVISOR(s) that we are asking you to evaluate has agreed to being evaluated for the purposes of this project. The information being collected is for research purposes only and will not be used for compensation or advancement decisions. All data will be kept confidential and will not be placed in personnel files. Only the investigator (John Hunthausen) will have access to the data. The final report of this project will contain only group-level data.

This is an opportunity for you to affect the quality of future managerial employees. We value and need your help. It would be greatly appreciated if you would take the time to participate. If you have any questions concerning this project, or its results, please feel free to contact John Hunthausen at ICS 967-3998. Thank you very much for your participation.

Sincerely,

John Hunthausen, Consultant, Organization Performance & Employee Development

**INSTRUCTIONS:**

Attached is the evaluation form(s) which consists of 34 questions. The first 15 questions on this form are the same questions currently used by [the company] to evaluate managerial employees. However, the five-point scale used to answer these questions has been inverted so that 1 = Poor and 5 = Exceptional:

- |                          |  |
|--------------------------|--|
| 1. Poor                  | Unsatisfactory performance. Performance is clearly below what is expected at the current position.           |
| 2. Continued Development | Needs development in current position. Performance is somewhat lower than expected for the current position. |
| 3. Fully Competent       | Solid performance. Consistently meets expectations.  |
| 4. Strong                | Excellent performance. Frequently exceeds expectations for current position and management level.            |
| 5. Exceptional           | Clearly outstanding performance. Always exceeds expectations for current position and management level.      |

Questions 16 through 31 ask you to evaluate the SUPERVISOR with regards to how likely he/she would behave in a certain way. The last three questions assess overall job performance.

When you are finished, please board mail the completed form(s) to John Hunthausen, MD 5110, HDQ.

**THANK YOU!**

SUPERVISOR Performance Evaluation form - Research Purposes Only

Name of SUPERVISOR: \_\_\_\_\_

For each item, please CIRCLE the number that best represents your judgment of this person's job performance.

|  | Poor | Continued Development | Fully Competent | Strong | Exceptional |
|--|------|-----------------------|-----------------|--------|-------------|
| 1. Written Communication Skills          | 1    | 2                     | 3               | 4      | 5           |
| 2. Oral Communication Skills             | 1    | 2                     | 3               | 4      | 5           |
| 3. Organizational Ability                | 1    | 2                     | 3               | 4      | 5           |
| 4. Negotiating Skills                    | 1    | 2                     | 3               | 4      | 5           |
| 5. Technical Skills                      | 1    | 2                     | 3               | 4      | 5           |
| 6. Quantitative Skills                   | 1    | 2                     | 3               | 4      | 5           |
| 7. Decision Making Ability               | 1    | 2                     | 3               | 4      | 5           |
| 8. Analytical Ability/Problem-Solving    | 1    | 2                     | 3               | 4      | 5           |
| 9. Customer Focus                        | 1    | 2                     | 3               | 4      | 5           |
| 10. Teamwork                             | 1    | 2                     | 3               | 4      | 5           |
| 11. Employee Development                 | 1    | 2                     | 3               | 4      | 5           |
| 12. Flexibility                          | 1    | 2                     | 3               | 4      | 5           |
| 13. Initiative, perseverance, enthusiasm | 1    | 2                     | 3               | 4      | 5           |
| 14. Leadership                           | 1    | 2                     | 3               | 4      | 5           |
| 15. Continuous improvement               | 1    | 2                     | 3               | 4      | 5           |

While performing his or her job, how likely is it that this person would:

|   | Not at all Likely | 1 | 2 | 3 | 4 | Extremely Likely |
|---|-------------------|---|---|---|---|------------------|
| 16. comply with instructions and rules even when a manger is not present. | 1                 | 2 | 3 | 4 | 5 |                  |
| 17. cooperate with others in a team.                                      | 1                 | 2 | 3 | 4 | 5 |                  |
| 18. persist in overcoming obstacles to complete a task.                   | 1                 | 2 | 3 | 4 | 5 |                  |
| 19. display proper [company] appearance and conduct.                      | 1                 | 2 | 3 | 4 | 5 |                  |
| 20. volunteer for additional tasks.                                       | 1                 | 2 | 3 | 4 | 5 |                  |

While performing his or her job, how likely is it that this person would:

|  | Not at all<br>Likely | 2 | 3 | 4 | Extremely<br>Likely |
|--|----------------------|---|---|---|---------------------|
| 21. follow proper procedures and avoid unauthorized shortcuts.   | 1                    | 2 | 3 | 4 | 5                   |
| 22. look for a challenging assignment.   | 1                    | 2 | 3 | 4 | 5                   |
| 23. offer to help others accomplish their work.  | 1                    | 2 | 3 | 4 | 5                   |
| 24. pay close attention to important details.  | 1                    | 2 | 3 | 4 | 5                   |
| 25. defend supervisors' decisions.   | 1                    | 2 | 3 | 4 | 5                   |
| 26. render proper [company] courtesy.  | 1                    | 2 | 3 | 4 | 5                   |
| 27. support and encourage a coworker with a problem.   | 1                    | 2 | 3 | 4 | 5                   |
| 28. take the initiative to solve a work problem.   | 1                    | 2 | 3 | 4 | 5                   |
| 29. exercise personal discipline and self-control.   | 1                    | 2 | 3 | 4 | 5                   |
| 30. tackle a difficult work assignment enthusiastically.   | 1                    | 2 | 3 | 4 | 5                   |
| 31. voluntarily do more than the job requires to help others or to contribute to organization effectiveness. | 1                    | 2 | 3 | 4 | 5                   |

Please rate this SUPERVISOR's overall job performance.

32.

|  |   |  |   |  |
|--|---|--|---|--|
| <b>Does not meet standards for<br/>job performance</b> |   | <b>Meets standards for job<br/>performance</b> |   | <b>Exceeds standards for job<br/>performance</b> |
| 1  | 2 | 3  | 4 | 5  |

33.

|  |   |   |   |   |
|--|---|---|---|---|
| <b>Performs at a low level<br/>compared to other<br/>Supervisors</b> |   | <b>Performs at an average level<br/>compared to other<br/>Supervisors</b> |   | <b>Performs at a high level<br/>compared to other<br/>Supervisors</b> |
| 1  | 2 | 3   | 4 | 5   |

34.

|  |   |   |   |  |
|--|---|---|---|--|
| <b>Contributes less to station<br/>effectiveness than most</b> |   | <b>Makes an average<br/>contribution to station<br/>effectiveness</b> |   | <b>Contributes more to station<br/>effectiveness than most</b> |
| 1  | 2 | 3   | 4 | 5  |

THANK YOU!