THE SUBSTANTIVE VALIDITY OF WORK PERFORMANCE MEASURES:

IMPLICATIONS FOR RELATIONSHIPS AMONG WORK BEHAVIOR

DIMENSIONS AND CONSTRUCT-RELATED VALIDITY

A Dissertation

by

NICHELLE CARLOTTA CARPENTER

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2012

Major Subject: Psychology

The Substantive Validity of Work Performance Measures: Implications for Relationships

among Work Behavior Dimensions and Construct-Related Validity

THE SUBSTANTIVE VALIDITY OF WORK PERFORMANCE MEASURES:

IMPLICATIONS FOR RELATIONSHIPS AMONG WORK BEHAVIOR

DIMENSIONS AND CONSTRUCT-RELATED VALIDITY

A Dissertation

by

NICHELLE CARLOTTA CARPENTER

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Approved by:

Chair of Committee,	Winfred Arthur, Jr.
Committee Members,	Christopher M. Berry
	Dan S. Chiaburu
	Ramona L. Paetzold
	Stephanie C. Payne
Head of Department,	Ludy T. Benjamin

August 2012

Major Subject: Psychology

ABSTRACT

The Substantive Validity of Work Performance Measures: Implications for Relationships Among Work Behavior Dimensions and Construct-Related Validity. (August 2012)

Nichelle Carlotta Carpenter, B.S., Grand Valley State University; M.S., University of Baltimore

Chair of Advisory Committee: Dr. Winfred Arthur, Jr.

Performance measurement and criterion theory are critical topics in the fields of I/O psychology, yet scholars continue to note several issues with the criterion, including empirically redundant behaviors, construct and measure proliferation, and definitions that conflict. These interconnected problems hinder the advancement of criterion measurement and theory. The goal of this study was to empirically examine the issues of theory/construct clarity and measurement as they exist regarding work performance behaviors.

This study's first objective was to clarify definitions of core performance behaviors, particularly to resolve issues of construct proliferation and conceptual conflict. Universal definitions of four core criterion constructs (i.e., task performance, citizenship performance, counterproductive work behavior, and withdrawal) were developed that integrated existing definitions of similar behaviors. Each definition reflects a parsimonious conceptualization of existing performance behaviors, which serves to clarify existing, and at times divergent, criterion conceptualizations. Importantly, these

integrated definitions represent commonly-held definitions of the constructs and replace the largely discrepant accumulation of definitions.

The second objective was to determine whether existing items assumed to measure the four core work performance behaviors were judged by raters to represent their respective constructs. The results showed that of the 851 items examined, over half were judged to *not* represent their respective constructs which, importantly, replicated previous research. Additionally, the results highlight items that match their respective construct definition and contain minimal overlap with non-posited constructs.

Finally, the third objective was to determine the implications of using the problematic items for both the empirical relationships among work performance behaviors and evidence of construct-related validity. The results provided preliminary evidence that while nomological networks are minimally affected, relationships among some work performance dimensions are significantly affected when problematic items are removed from measures of performance constructs.

This dissertation demonstrated the need for more attention to the construct labels placed on the behaviors described in work performance items, as there are potentially adverse consequences for theory and measurement. Ultimately, the results of this study showed that work performance behaviors/items have often been assigned incorrect construct labels which, subsequently, may cast considerable doubt on the theoretical and empirical understanding of the criterion domain.

DEDICATION

This dissertation is dedicated to my family members who are not here to celebrate and enjoy this time with me. To my grandparents, Willie & James Carpenter and Carlotta Suarez Elliott, I hope I've made you proud and surpassed what you thought was possible for us. To my dear dad, William Lynn Carpenter, I miss you and I wish you were here to celebrate like we planned. I know you're proud of me.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION: THE IMPORTANCE

OF RESEARCH

Criterion measurement and theory have been of fundamental interest to I/O psychology and organizational behavior and human resource management (OB/HRM) researchers and practitioners for nearly a century (Austin & Crespin, 2006). The critical need to understand and describe performance behavior, as well as to ultimately predict employee performance encompasses the purpose of research in most, if not all OB/HRM domains. Nevertheless, scholars continue to note conceptual and empirical issues with criterion constructs and behaviors. For example, there exist high intercorrelations among theoretically distinct work performance constructs and there are numerous competing theories of the criterion space. In addition, there is the proliferation of questionably distinct work performance behaviors as well as the scales used to measure these behaviors. In sum, problems still remain in the measurement of work performance.

_____

This dissertation follows the style of *The Journal of Applied Psychology.*

These issues are not trivial, as they each serve to impede the advancement of not only performance measurement, but also criterion theory. Theory development and refinement in any domain can only occur if researchers and theorists can translate abstract concepts and phenomena into *precisely-defined* theoretical constructs (Suddaby, 2010). Indeed, this essential construct validation process requires that researchers specify the behaviors that comprise a construct, develop instruments to measure the construct, and examine empirical relationships that result from the use of the particular construct instrument (Binning & Barrett, 1989). These processes are necessary not only for determining the meaningfulness of constructs but for advancing theory as well. However, the long-existing issue of "construct muddiness" in the criterion domain (Austin & Villanova, 1992; Cleveland & Colella, 2010; Le, Schmidt, Harter, & Lauver, 2010; Organ, 1997; Schwab, 1980) signals the existence of conflict and overlap in the extant theoretical frameworks and calls into question the assumption that constructs are precisely defined and measured. Ultimately, these problems cast doubt on whether researchers can adequately test and refine different theories regarding the criterion space.

The large degree of empirical overlap shown between presumably distinct work performance constructs and behaviors indicates that the root of the problem is likely intertwined in the construct clarity of the behaviors and the manner in which the behaviors are assessed. For instance, although task (e.g., completion of required behaviors) and citizenship (e.g., enactment of behaviors that support the organization and/or its members) performance are considered theoretically separate work performance constructs, they correlate as high as .74 (e.g., mean corrected correlation, Hoffman, Blair,

Meriac, & Woehr, 2007). That ostensibly *separate constructs* are so highly correlated is problematic, particularly since this value would serve as an acceptable index of alternate-form reliability.

There are two possible conclusions that can be drawn from these findings. First, perhaps criterion theory to this point is "incorrect" in specifying the conceptual nature and separation of task and citizenship performance. This would call for the development of new theory that either more accurately reflects their large degree of covariation or more cleanly specifies their distinctiveness. The second conclusion is that perhaps the source of the problem is not the theory underlying task and citizenship, but rather, problems with the measurement and specification of the behaviors comprising these constructs. For instance, if task and citizenship performance are assessed with instruments that reflect similar or overlapping behaviors, and thus do not precisely represent the theoretical distinctiveness of the constructs, then it is not surprising to observe a large degree of empirical overlap between the measures of the constructs. Criterion theory is at least temporarily stymied in either instance.

The important question of whether criterion measures actually represent behaviors in the theorized criterion domain was previously noted by Binning and Barrett (1989). Researchers evaluate the extent to which empirical evidence supports a number of inferences necessary for construct validation, which are presented in Figure 1. Inference 5 represents one of the primary assumptions in personnel selection decision making, specifically that predictor tests relate to (and predict) the work performance domain. A line of evidence that supports this inference is the relationship between predictor tests and

criterion "tests," or measures of performance (Inference 1). However, this evidence alone is insufficient in corroborating the conclusion that a selection test predicts work performance (Inference 5). It is also deficient to only explicate the *conceptual* relationship between predictor and criterion constructs (Inference 3). Rather, for researchers to be confident in assuming that predictor tests actually relate to the criterion domain (Inference 5), it is critical to additionally demonstrate that (a) the predictor instrument represents the predictor construct domain (Inference 2), and (b) the criterion instrument represents the criterion construct domain (Inference 4). Unfortunately, research attention has essentially neglected to pursue evidence supporting the inference that measures of criterion behaviors represent the theorized construct (Inference 4), and instead, has focused heavily on the predictor side of this issue (Binning & Barrett, 1989). Thus, in the absence of evidence that criterion instruments represent the proposed underlying construct, researchers are certainly limited in the ability to draw conclusions about both the predictors of work performance and work performance in general.

Of course, criterion measurement issues are further augmented and complicated by the existence of numerous and often divergent theories underlying work performance constructs. Some models posit sets of behavioral dimensions that are generally applicable across different jobs. For example, many models represent performance by some or all of the following construct dimensions: task performance, citizenship performance, withdrawal behavior, and counterproductive work behavior (CWB). Indeed, the criterion theories put forth by Borman and Motowidlo (1993), Campbell (1990), Sackett (2002), and Murphy (1989, 1990) represent at least some of these work performance constructs

and are quite commonly researched and highly regarded in terms of their representation of the performance domain.
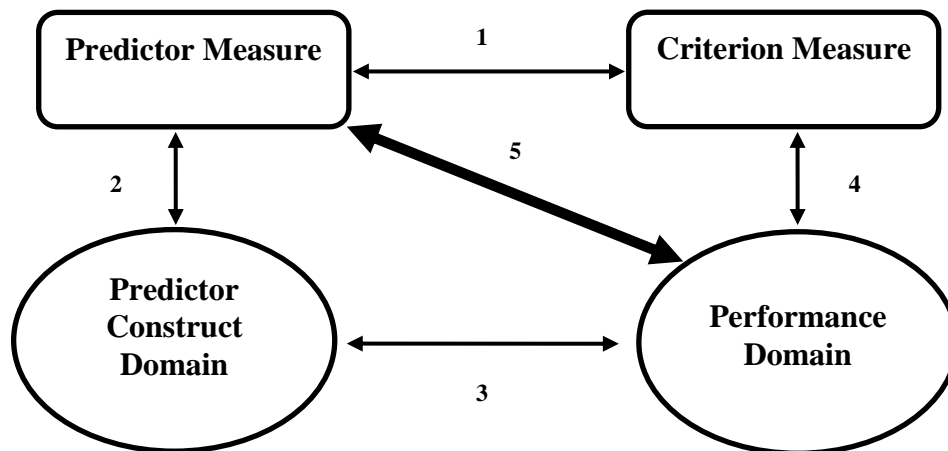
Figure 1. Inferences in construct validation and theory building. Adapted from "Validity of personnel decisions: A conceptual analysis of the inferential and evidential bases," by J. F. Binning and G. V. Barrett, 1989, *Journal of Applied Psychology,* 74, p. 480. Copyright 1989 by the American Psychological Association, Inc.

However, there also exist models of performance that pertain to specific occupations (e.g., service industry; Hunt 1996), as well as models that focus on a single behavior or construct posited to reflect work performance (e.g., adaptive performance; Pulakos, Arad, Donovan, & Plamondon, 2000). There exist many construct clarity issues across these types of models and single dimensions, as behaviors that are remarkably similar in their definition and description are assigned different labels (e.g., contextual, prosocial, extra-role, and citizenship performance), which may implicitly suggest that the behaviors are more different than similar. This in particular has led to the proliferation of construct instruments (e.g., Blalock, 1968; Le et al., 2010; Rousseau, 2007; Schmidt,

2010; Schwab, 1980), and the added consequence of items that reflect similar behaviors, yet are intended to reflect different constructs. This thwarts theoretical development because oftentimes researchers may not fully explicate the theory or conceptual framework underlying the measured behaviors and constructs or, further, may also "borrow" from different theories in determining the performance constructs to be measured. Altogether, what results are difficulties in understanding (a) the precise distinctions across constructs should they exist, and (b) the extent to which performance theories have even been tested.

The goal of this study is to explicate and empirically examine the entangled issues of theory/construct clarity and measurement as they exist regarding work performance constructs and behaviors. As described below, the aforementioned problems (e.g., high intercorrelations between constructs theorized to be separate) cannot be blamed on only inaccurate theory or problematic measurement—one issue certainly influences and is influenced by the other. As a result, the proposed study adds clarity to criterion theory, constructs, and measurement through the following: (a) developing non-overlapping definitions of the four core work performance constructs (i.e., task performance, citizenship performance, counterproductive work behavior, and withdrawal behavior) that integrate existing definitions of similar constructs (with different labels) while preserving the underlying meaning of the specified constructs; (b) assessing the match between the behavior reflected in existing performance items and the respective comprehensive definition of the construct the behavior is theorized to represent; and (c) obtaining construct-related validity evidence of the refined instruments of the performance

constructs through examinations of the intercorrelations among the behaviors (using multi-source ratings) and their respective nomological networks.

The results of this dissertation have both theoretical and practical implications. First, an outcome of this study will be a parsimonious and precise theoretical conceptualization of existing work performance constructs. This will contribute much needed theoretical clarity and distinctiveness to criterion conceptualizations and definitions. In terms of practical implications, the results are expected to highlight the extant instruments and items that (a) reference only the behaviors matching the respective construct definition, and (b) demonstrate minimal overlap with other constructs (i.e., the same behavior is *not* considered to represent multiple constructs). Thus, practitioners and researchers will be able to use these resulting measures with some assurance that the theorized construct is being effectively assessed. Furthermore, this means that researchers can be confident that the theory underlying the measures is being tested—an essential prerequisite for the advancement of criterion theory. Altogether, this study seeks to add clarity to criterion theory and measurement.

2. CRITERION PROBLEMS

2.1 Existence of Numerous Competing Theories

As noted above, an enduring problem in performance measurement is the presence of numerous conceptualizations of the work performance domain, each grounded in different theoretical and structural arrangements of the criterion space. This divergence across theories and models means that it is unlikely that researchers are speaking the "same language" when referring to different work performance constructs or behaviors (see Rotundo & Sackett, 2002 and Viswesvaran & Ones, 2000 for review). This is illustrated in Table 1 which presents examples of the different conceptualizations and theories for the constructs in the work performance domain that are present in the extant literature. It also illustrates the different labels used to denote conceptually similar constructs. Four of the conceptualizations—(a) Borman and Motowidlo's (1993) two-dimensional model; (b) Campbell's (1990) eight-dimensional model; (c) Murphy's (1989, 1990) four-dimensional model; and (d) Sackett's (2002) three-dimensional model—have received considerable research attention in the past 25 years. Each reflects a *general* model of performance, meaning that each model's proposed dimensions reflect constructs that are considered important across different jobs and organizations. Additionally, as is illustrated in Table 2, these models are similar in that they represent most of the following broad categories of employee organizationally-relevant behavior—(a) the completion of required tasks and duties, (b) positive work behaviors that may support the organization and its members, (c) negative behaviors that may harm the organization or its members, and (d) negative behaviors that reflect employees' avoidance of the

workplace or tasks. However, despite these important similarities, the models differ in terms of the number of dimensions posited to represent the criterion domain as well as in the labels and conceptualizations of the constructs that the similar behaviors and dimensions are intended to represent. Furthermore, the models also contain disconcerting points of overlap such that similar behaviors are defined and assigned to constructs that are quite different. These issues introduce confusion to the understanding of criterion behaviors.

To elaborate, the aforementioned models each specify different labels, definitions, and conceptualizations for similar constructs in the same category of work behavior (see Table 2). For example, for the category of positive and supportive work behaviors, *demonstrating effort* (Campbell, 1990) is defined as the effortful and motivational behaviors on the employee's part, and *interpersonal relations* (Murphy, 1990) is defined as the employee's level of cooperation and quality of interpersonal interactions with others. *Contextual performance* (Borman & Motowidlo, 1993) is defined as the actions that support the organization's functions, and *organizational citizenship behavior* (OCB; Organ, 1988; Sackett, 2002) describes positive behaviors that are not necessarily mandatory, but still contribute to the effectiveness of an organization (Organ, Podsakoff, & MacKenzie, 2006). Each of the definitions invoke similar consideration of the same general construct of positive work behaviors (LePine, Erez, & Johnson, 2002; Motowidlo, 2000; Organ 1997), but they also contain important differences that are not always recognized. For example, Organ (1997) attempted to change the conceptualization of OCB to be more commensurate with that of contextual performance by defining OCB

as a distinct and multidimensional category of work behavior that is *not* necessarily

discretionary. However, Stone-Romero, Alvarez, and Thompson (2009) and Motowidlo

(2000) have noted that this change still appears to have "fallen on deaf ears," and is not

fully acknowledged by researchers since OCB is often still defined as a discretionary

form of work behavior.

Table 1

Description of Models of Work Performance in the Extant Literature

Reference	Dimension	Description
Katz & Kahn (1978)		
	Role performance	Meeting or exceeding the quantitative and qualitative standards of performance
	Innovative behavior	Facilitate the achievement of organizational goals
	Joining and staying with the organization	Low turnover and absenteeism
Murphy (1989, 1990)		
	Task performance	Success in completing the concrete tasks that the employee is expected to perform
	Interpersonal relations	Maintaining satisfactory interpersonal relations with coworkers, supervisors, and subordinates; interactions with customers and the public
	Destructive or hazardous behaviors	Actions that lead to productivity loss, damage, or other setbacks
	Downtime behaviors	The tendency of some workers to avoid the work setting; tendency to come to work in an impaired state that affects their job performance
Campbell (1990)		
	Job-specific task proficiency	Core technical tasks
	Non-job-specific task proficiency	Performance on tasks that are required but are common to other employees
	Written and oral communication proficiency	Proficiency on written and oral tasks
	Demonstrating effort	Daily effort in completing tasks and persistence under adverse conditions
	Maintaining personal discipline	Avoidance of negative behaviors such as substance abuse, rule infractions, and excessive absenteeism
	Facilitating peer and team performance	Support and assist peers

Table 1 Continued

Reference	Dimension	Description
	Supervision and leadership	Influence, setting goals, rewarding and punishing
	Management and administration	Organize people and resources
Borman & Motowidlo (1993)		
	Task performance	Formally required tasks that are specified by job descriptions or job analysis
	Contextual Performance	Behaviors that contribute to the organizational environment and enhance completion of job tasks
Welbourne, Johnson, & Erez (1998)		
	Job role	Activities specifically related to one's job description
	Career role	Obtaining the necessary skills to progress through one's organization
	Innovator role	Creativity and innovation in one's job and the organization as a whole
	Team role	Working with coworkers and team members, toward success of the firm
	Organization role	Going above the call of duty in one's concern for the firm
Johnson (2003)		
	Task performance	
	- Job-specific task proficiency	Core technical tasks
	- Non-job-specific task proficiency	Performance on tasks that are required but are common to other employees
	- Written and oral communication proficiency	Proficiency on written and oral tasks
	- Management/ administration	Organize people and resources
	- Supervision	Influence, setting goals, rewarding and punishing
	- Conscientiousness initiative	Persisting with extra effort despite difficult conditions
	Citizenship performance	
	- Conscientiousness initiative	Persisting with extra effort despite difficult conditions; Taking the initiative to do all that is necessary to accomplish objectives
	- Organizational support	Favorably representing the organization by defending, supporting, and promoting it as well as expressing satisfaction and showing loyalty by staying with the organization despite temporary hardships.

Table 1 Continued

Reference	Dimension	Description
	- Personal support	Helping others by offering suggestions, cooperating, and teaching them useful knowledge or skills, directly performing some of their tasks, and providing emotional support for their personal problems.
	Adaptive performance	Dealing with uncertain and unpredictable work situations
Schmitt, Cortina, Ingerick, & Wiechmann (2003)		
	Task performance	Task-related behaviors that contribute to the technical core of the organization
	Citizenship performance	Behaviors that support the environment in which the technical core must function
	Adaptive performance	Dealing with uncertain and unpredictable work situations
Griffin, Neal, & Parker (2007)		
	Individual task proficiency	Meets the known expectations and requirements of his or her role as an individual
	Individual task adaptivity	Copes with, responds to, and/or supports changes that affect their roles as individuals.
	Individual task proactivity	Self-starting, future-oriented behavior to change their individual work situations, their individual work roles, or themselves.
	Team member proficiency	Meets expectations and requirements of his or her role as a member of a team
	Team member adaptivity	Copes with, responds to, and/or supports changes that affect their roles as members of a team.
	Team member proactivity	Self-starting, future-directed behavior to change a team's situation or the way the team works
	Organizational member proficiency	Meets expectations and requirements of his or her role as a member of an organization
	Organizational member adaptivity	Copes with, responds to, and/or supports changes that affect their roles as organization members.
	Organizational member proactivity	Self-starting, future-directed behavior to change her or his organization and/or the way the organization works.
	Organizational member proactivity	Self-starting, future-directed behavior to change her or his organization and/or the way the organization works.

Table 2

Example of Conceptual Overlap in Four Common Models of Work Performance

	General category of work behavior	
Conceptual model	Construct label	Construct definition
Completion of required tasks and duties		
Borman & Motowidlo (1993)	Task performance	Formally required tasks that are specified by job descriptions or job analysis
Campbell (1990)	Job-specific task proficiency	Degree to which required tasks are completed
	Non-job-specific tasks	Performance on tasks that are required but are common to other employees
	Written and oral communication	Proficiency on written and oral tasks
Murphy (1989, 1990)	Task performance	Success in completing the concrete tasks that the employee is expected to perform
Sackett (2002; Rotundo & Sackett, 2002)	Task performance	Behaviors that contribute to the production of a good or the provision of a service; not restricted to include only those behaviors that are listed in the job description
Positive work behaviors that support the organization and its members		
Borman & Motowidlo (1993)	Contextual performance	Behaviors that contribute to the organizational environment and enhance completion of job tasks
Campbell (1990)	Demonstrating effort	Daily effort in completing tasks and persistence under adverse Conditions

Table 2 Continued

	General category of work behavior	
Conceptual model	Construct label	Construct definition
Murphy (1989, 1990)	Interpersonal relations	Maintaining satisfactory interpersonal relations with coworkers, supervisors, and subordinates; interactions with customers and the public
Sackett (2002; Rotundo & Sackett, 2002)	OCB	Behavior that contributes to the goals of the organization by contributing to its social and psychological environment
Negative work behaviors that harm the organization and its members		
Campbell (1990)	Maintaining personal discipline	Avoidance of negative behaviors such as substance abuse, rule infractions, and excessive absenteeism
Murphy (1989, 1990)	Destructive/hazardous behaviors	Actions that lead to productivity loss, damage, or other setbacks
Sackett (2002; Rotundo & Sackett, 2002)	CWB	Voluntary behavior that harms the well-being of the organization
Negative work behaviors that reflect work-avoidance		
Murphy (1989, 1990)	Down-time behavior	The tendency of some workers to avoid the work setting; tendency to come to work in an impaired state that affects their job performance
Sackett (2002; Rotundo & Sackett, 2002)	CWB	Voluntary behavior that harms the well-being of the organization

Note. CWB = counterproductive work behavior; OCB = organizational citizenship behavior.

2.2 Construct Clarity Issues

An additional problem in criterion theory and measurement, which derives from the first, is that conceptualizations of a particular work performance construct overlap with definitions of *different* constructs, increasing the likelihood that constructs are neither precisely defined nor clearly understood. For example, an employee's level of effort has been included as a prominent component of each of the four work performance constructs, such that the reduction or lack of effort represents an employee distancing him or herself from the organization or the task (e.g., withdrawal) or harming the organization by halting production (e.g., CWB); lack of effort may also indicate unsatisfactory completion of required tasks or unfulfilled role expectations (e.g., task performance). Conversely, an employee's extra and/or sustained effort can indicate employees who go above and beyond to assist others or the organization (e.g., OCB). This demonstrates that theoretically separate constructs contain overlapping descriptions and definitions (e.g., effort), thus making it difficult to make a clear distinction between them. Without a clear articulation of how "poor effort" in regards to task performance differs from and is similar to "poor effort" in CWB and/or withdrawal, it is difficult to use "effort" as one means to differentiate these constructs. Furthermore, without a clear conceptual distinction it is also unlikely that the constructs will be clearly measured. Indeed, attempts to measure and interpret the aspect of work behaviors reflecting relatively similar conceptualizations of poor effort (e.g., withdrawal, CWB, and task performance), for example, are likely to be confusing and to highlight difficulties in defining, understanding, and measuring performance constructs and behaviors.

The proliferation of performance constructs and measures only creates additional confusion regarding the understanding and meaning of criterion behaviors. For example, as described above, there are a number of extant performance behaviors reflecting the general construct of positive and supportive workplace behavior (e.g., contextual performance [Borman & Motowidlo, 1993], extra-role behavior [Van Dyne, Cummings, & Parks, 1995], OCB [e.g., Bateman & Organ, 1983; Smith, Organ, & Near, 1983], organizational compliance [e.g., Smith et al., 1983], organizational loyalty [Graham, 1989], civic virtue [Graham, 1991], organizational spontaneity [George & Brief, 1992], and prosocial organizational behavior [Brief & Motowidlo, 1986]). Although these behaviors are conceptually similar and likely represent the same general construct, they are regarded in the literature as being distinct (e.g., Motowidlo, 2000; Podsakoff, MacKenzie, Paine, & Bachrach, 2000).

As another example, CWB, workplace antisocial behavior, and workplace deviance represent conceptualizations of the same general construct reflecting negative and harmful workplace behavior, yet each contains slightly different conceptual definitions from the others. To illustrate, CWB is often defined as *intentional* negative actions that harm the organization or those within it (e.g., Robinson & Bennett, 1995; Spector & Fox, 2005), but some CWB scholars have removed "intention to harm" as a requirement for defining CWB (see Sackett & DeVore, 2001). Therefore, CWB and citizenship performance are unfortunately similar in that the extent to which the shifting conceptual definitions are acknowledged by researchers is unclear, which means that construct clarity is further compromised. The overarching issue here is that although the

researchers who develop new constructs and measures surely identify and recognize the subtle and obvious differences between different conceptualizations, it is unfortunately highly unlikely that all researchers who examine these constructs are as intimately familiar with their fine distinctions. This means that theoretically distinct constructs may be assumed to be more similar than different, thus hindering the ability to conceptually distinguish the constructs.

Construct clarity is further clouded when instruments are developed and used to measure the proliferating and overlapping constructs. Consequently, constructs theorized as separate may be measured with scales and items that reference very similar behaviors. For example, the item "Taken an additional or longer break than is acceptable at your workplace" reflects behavior expected to represent CWB (Bennett & Robinson, 2000), while a similar (and reverse-scored) item, "Does not take extra breaks" is used to measure OCB (Podsakoff et al., 1990; Smith et al., 1983). Furthermore, this issue of content and behavior overlap is not just restricted to work performance constructs. For example, the item, "It would take very little change in my present circumstances to cause me to leave this organization" is used to measure organizational commitment (Mowday, Steers, & Porter, 1979), yet a similar item, "At the present time, I am actively searching for another job in a different organization" is used to measure withdrawal or turnover intention (Mowday, Koberg, & MacArthur, 1984; see Bozeman & Perrewe, 2001). Without clearly-defined constructs as well as efforts to ensure that behaviors and instruments represent only one construct, this issue of item-overlap is likely to continue.

3. THE IMPACT OF CRITERION PROBLEMS

3.1 The Impact of Criterion Problems on Criterion Theory

Unfortunately, the issues regarding construct clarity and the divergent criterion theories and models hinder the advancement of criterion theory. Indeed, not being fully aware of the points of overlap and distinction across similar criterion models and constructs hinders the ability of researchers to fully understand and study these behaviors. Kelley (1927) described the two ways—the jingle and jangle fallacies—in which the use of conflicting and overlapping labels and conceptualizations lead to contaminated theorizing.

The *jingle fallacy* represents the use of a common label to refer to multiple constructs as though they are similar when empirical evidence supporting the similarities has not been (or has yet to be) shown (Kelley, 1927). For example, CWB is often used as an umbrella term for a variety of negative workplace behaviors, such as sexual harassment, workplace incivility, antisocial work behavior, workplace deviance, and workplace aggression. Although the extent to which these respective behaviors are similar and different is unclear (e.g., Herschcovis, 2011), the general use of the CWB term implies that each of these behaviors should be regarded and perhaps theorized as similar. In this case, the use of a single construct label hinders theoretical development since it blurs important and meaningful conceptual distinctions—if any—among the behaviors.

Next, the *jangle fallacy* represents the use of *different* labels to convey that concepts are distinct, when in reality they are not meaningfully different (Kelley, 1927).

This is not to say that the constructs are not posited to have differences between them; however, these distinctions are usually modest at best and a focus on these distinctions may not always be necessary. This issue of construct proliferation is illustrated by the aforementioned examples of the number of similar citizenship performance behaviors in the literature. OCB and contextual performance have previously been distinguished in terms of whether the behavior was discretionary (e.g., not required) and not rewarded (i.e., OCB) versus considered a part of the task requirements (i.e., contextual performance); however, in the grand scheme of things, it is uncertain whether this distinction is meaningful. An important question Kelley (1927) notes regarding this issue is whether it is reasonable to expect a meaningful differentiation of individuals on the basis of the theorized conceptual difference. That is, would we expect to differentiate employees on the basis of their enactment of contextual performance versus OCB behaviors at work? Indeed, the answer is likely "no," as employees who engage in a great deal of one behavior are also likely to engage in a great deal of the other. Therefore, although a practically meaningful or empirical distinction between these similar constructs probably does not exist, the use of different labels implies the need to expound on these distinctions and that each of the behaviors needs a separate theory. However, in reality a single model or conceptual definition would sufficiently represent the behaviors.

In sum, issues of criterion construct clarity mean that researchers may not only be speaking "different languages" when referencing and measuring similar constructs or behaviors (i.e., jangle fallacy) but also that researchers are likely erroneous in speaking the "same language" when referring to behaviors that may be distinct (i.e., jingle fallacy).

Either case introduces confusion and makes it less likely to develop a clear theory of work performance.

Finally, criterion issues make it unclear how to regard the new criterion constructs that researchers define and put forth as part of the criterion domain. For example, adaptive performance (e.g., Pulakos et al., 2000) and change-oriented discretionary behaviors (e.g., voice behavior [LePine & Van Dyne, 2001], personal initiative [Frese, Fay, Hilburger, Leng, & Tag, 1997], and taking charge [Morrison & Phelps, 1999]) have recently been regarded as important work behaviors.

Adaptive performance is defined as the set of behaviors employees engage in to meet the demands of a new situation or a change in the environment (Pulakos et al., 2000) and entails making quick decisions with clear thinking, generating new and innovative ideas, and being open-minded when interacting with others. Change-oriented discretionary behaviors are defined as constructive efforts to identify and implement changes in work procedures and policies to bring about improvement (Bettencourt, 2004; Choi, 2007). Behaviors may include communication directed towards improving the work situation (i.e., LePine & Van Dyne, 2001) and constructive efforts to bring about change in how tasks are completed (i.e., Morrison & Phelps, 1999). It is difficult to cleanly integrate these constructs into the criterion domain because it is not clear where they fit conceptually (as well as empirically) in relation to task performance, OCB, CWB, and withdrawal. It is also important to consider whether a global construct that represents their integration should also be included in the criterion domain (e.g., Parker & Collins, 2010) of these Adaptive behavior has been conceptualized as a component of employees'

contextual performance behaviors (e.g., Motowidlo & Schmit, 1999), while other researchers conceptualized adaptive performance as a core component of employee work performance altogether separate from task performance (Campbell, 1999; Griffin, Neal, & Parker, 2007; Hesketh & Neal, 1999; Pulakos et al., 2000). Similarly, change-oriented discretionary work behaviors are considered aspects of employees enactment of OCB (e.g., Choi, 2007; LePine & Van Dyne, 2001), but it is also reasonable that these behaviors could be considered an entirely distinct dimension of performance. Without a clear, non-overlapping conceptual framework or theory regarding core criterion constructs (e.g., task performance, citizenship, CWB, and withdrawal), it is difficult to clearly integrate new constructs into the theory or compare new and existing constructs, particularly without a clear understanding of how the new constructs are similar or different from existing ones.

In summary, the understanding of work performance behaviors has been plagued by at least two issues. The conflicting and overlapping criterion theories and the resulting lack of construct clarity have made it increasingly difficult to clearly understand the nature and theoretical underpinnings of the work performance constructs. However, this is only one aspect of the problem. In addition to the hindered ability to clearly understand the constructs *conceptually*, these issues hamper the ability to clearly *measure* work performance constructs, through their effect on the content of items. Specifically, the behaviors reflected in the content of performance items are likely used to represent and measure multiple constructs. The following sections highlight (a) why item-content is likely affected, (b) previous research examining how item-content is affected, and (c)

why it is important for the content of items (i.e., behaviors) to clearly reflect their respective construct definitions.

3.2 The Effect of Criterion Problems on the Content of Performance Measures

Because the divergent criterion theories have led to overlap in conceptualizations both within construct categories (e.g., overlap in behaviors within the positive and supportive behavior category) and between constructs (e.g., withdrawal, CWB, and task performance), it is not surprising that the content of items used to measure work performance behaviors show overlap in these ways as well. *Item content-representativeness*, or the extent to which the content of items (i.e., the behavior described in the item) represents the theorized construct, plays an important role in these criterion measurement and theoretical issues as it serves as both an influence and consequence of the conflicting theories and conceptualizations. There are numerous performance theories, constructs, and conceptual definitions, and it cannot be assumed that researchers are fully aware of the points of overlap and distinctiveness across these different constructs. Furthermore, bearing in mind that researchers often combine various items (likely derived using different conceptualizations) to create scales, it is unlikely that close attention is always paid to whether the behavior referenced in the measure fits the definition of the intended construct (MacKenzie, 2003). Thus, the scales used to measure work performance constructs may reflect behaviors the construct may not have been intended to represent.

Several examples in the literature illustrate that many instruments used to measure a particular performance construct overlap with different unintended constructs. For

example, researchers have extensively examined employees' role definitions, finding that many of the behaviors contained in OCB instruments are perceived by employees and supervisors to reflect task performance (e.g., Morrison, 1994). Dalal (2005) and Spector et al. (2010) have each examined the overlap between reverse-scored OCB measures (e.g., "does not take extra breaks") and the items used to measure CWBs (e.g., "taken an additional or longer break than is acceptable at your workplace"). Researchers have also noted the overlap that exists across the measures of different OCB dimensions (e.g., LePine et al. 2002), as well as the overlapping items used to measure both CWB and withdrawal behaviors (Carpenter & Berry, 2011). Thus, researchers have acknowledged that work performance items likely reflect behaviors that overlap with unintended constructs.

The current study builds on Carpenter, Newman, and Arthur (2011), which examined the extent to which the content of over 900 performance items in the extant literature was perceived to reflect their intended constructs. Raters were presented with theoretical construct definitions of task performance, citizenship performance, CWB, and withdrawal (from Murphy, 1989, 1990), asked to (a) read the content of each item and then (b) indicate the one construct they judged the item to best represent. The findings showed that over 50% of the work performance items were judged to reflect non-theorized performance constructs, with many of the items judged *unanimously* in this manner. For example, many items intended to measure OCB were judged to represent task performance, while many items intended to measure withdrawal were judged to reflect multiple performance constructs.

If the content of performance measures does not represent the theorized construct, then it is simply unclear whether the theorized constructs are being measured as originally theorized or intended. Indeed, one of the goals of measuring work performance behaviors is to test the sufficiency of criterion theory. If constructs are measured with items that reflect behaviors that are not representative of the construct, this not only means that the assessment is contaminated with construct-irrelevant variance, but it also means that the theory underlying the construct has yet to be tested. This point is discussed in detail below, but it is important to emphasize that item content-representativeness is particularly important as it forms the basis for the interpretation of the empirical relationships between constructs and behaviors as well as the current understanding of existing criterion theories. This is evident when one considers the mismatch between the empirical and conceptual relationship between task performance and citizenship performance. Such a large degree of covariation (e.g., mean corrected correlation of .74; Hoffman et al., 2007) is at odds with the posited conceptual distinctiveness of the behaviors. That previous research has shown the content of many OCB instruments to overlap with the construct definition of task performance (e.g., Carpenter et al., 2011; Kamdar, McAllister, & Turban, 2006; Kwantes, Karam, Kuo, & Towson, 2008; Morrison, 1994), is supportive of the proposition that this overlap is one plausible explanation for the high observed correlation. Indeed, this is one of the empirical questions this study seeks to examine.

3.3 Why Should Criterion Measures Reflect Criterion Theory?

The purpose of this study is to demonstrate the need for measures of work performance behaviors to reflect their theorized definitions. This measurement issue is certainly important in all scientific disciplines, but it is particularly critical for the assessment of work performance (Binning & Barrett, 1989). Blalock (1968) discussed the critical disconnect between theories in the social sciences and the empirical research intended to examine these theories; he outlined how improved measurement of theoretical constructs comprised an important and necessary means of bridging this gap. The gap between science and practice has often been observed in the organizational literature, as scholars have specifically noted that constructs are conceptualized as having complex theoretical distinctions, yet empirical findings usually reveal simpler patterns of strong, overlapping relationships (e.g., Schmidt, 2010). It is imperative that the content of a work performance measure represents the intended theory, because it has several implications for the very theory on which the measure is based. For example, Blalock (1968) noted that when numerous competing and alternative theories and definitions regarding a phenomenon exist, it is essential that items assessing the phenomenon are carefully and precisely developed to reflect their theorized definitions. Without so doing, it is difficult to reject or adapt the underpinnings of the theories because there is no indication of whether the measures reflect behaviors that are even indicative of the theorized construct. Furthermore, if it is shown that measures are *not* judged to represent their theorized construct, then this implies that the theory underlying the construct has not yet been adequately tested (Blalock, 1968).

This fundamental issue of construct-related validity is especially relevant in regards to the measurement of work performance constructs, particularly given the existence of numerous criterion theories, construct definitions, as well as the proliferation of constructs and measures. To use OCB as an example, Podsakoff et al. (2000) counted more than 30 conceptualizations of OCB (e.g., altruism, Smith et al., 1983; contextual performance, Borman & Motowidlo, 1993; interpersonal helping, Moorman & Blakely, 1995; prosocial organizational behavior, Brief & Motowidlo, 1986), and noted that each was defined a bit differently. In order to establish the nomological networks for these different forms of OCB, it is first essential that the measures used to assess these purportedly distinct constructs reflect the underlying differences in their definitions. This ensures that differences or similarities between the theoretical definitions are captured. It is only when the degree to which measures are judged to be content-representative is known that researchers can move towards modifying either the construct definitions, construct items, or both.

Furthermore, Blalock (1968) noted that an implicit, yet critical assumption of construct measurement is that the measure not only serves as the appropriate operational definition of the construct in question, but that it also *embodies* the construct. Binning and Barrett (1989) echo this sentiment in their assertion of the necessity that predictor and criterion instruments represent the intended construct. Again, this is a fundamental question of construct-related validity, and also forms the basis for determining whether the inferences regarding core work performance constructs are sound. Indeed, the current understanding of the relationships between task and citizenship performance, CWB and

citizenship performance, and CWB and withdrawal behavior is predicated on the

assumption that the construct measures reflect only the behaviors that represent the

intended construct (Binning & Barrett, 1989). Unfortunately, it is likely the case that

measures of work behaviors contain construct-irrelevant variance and subsequently, that

current understanding of the constructs is based on measures/items that are contaminated

and do not accurately depict and represent the conceptual definition of the constructs.

Thus, it is necessary to examine the extent to which measures are judged to be consistent

with their theoretical construct definitions and furthermore, how the degree of "fit" leads

to changes in construct-related validity.

4. SUBSTANTIVE VALIDITY ASSESSMENTS OF ITEM CONTENT-REPRESENTATIVENESS

An objective of the present study is to conduct a substantive validity analysis to evaluate the content-representativeness of work performance items in the extant literature. Substantive validity is a form of content-related validity that speaks to whether item content (i.e., the behavior reflected in an item) represents the theorized construct, a non-theorized construct, or multiple constructs (e.g., Anderson & Gerbing, 1991). As part of the analysis, raters are first presented with work performance items and the definitions of performance constructs, and then asked to rate each item on the extent to which it is consistent with each of the construct definitions. The present study consists of an evaluation of a representative selection of items theorized to reflect each of four categories of work behaviors (i.e., task performance, CWB, withdrawal, and citizenship performance) in the organizational literature. This not only permits an examination of the degree to which numerous work performance items are perceived to overlap with their theorized constructs, but it also allows an examination of the extent to which item content is judged to reflect *multiple* constructs. As described in a subsequent section, this serves as a key extension of earlier research that has focused on the content overlap of performance measures (e.g., Morrison 1994; Vey & Campbell, 2004). Further, this analysis also permits a more effective and conclusive estimate of how observed empirical overlap across the four categories of work behaviors may be due in part to the content of the individual items used to operationalize the constructs.

As previously noted, substantive validity refers to the extent to which individuals perceive a measure to represent a particular construct definition (Anderson & Gerbing, 1991; Holden & Jackson, 1979). A substantive validity assessment highlights (a) the items with *high substantive validity*, meaning the item-content is judged to be significantly more representative of the theorized construct than other constructs, (b) those with *low substantive validity*, meaning item-content is judged to be significantly more representative of a non-theorized construct than the theorized construct and other non-theorized constructs, and (c) the items that are *confounded*, meaning the item-content may be judged to be significantly representative of multiple constructs. Importantly, substantive validity is considered a necessary condition for construct-related validity, as measures perceived to represent non-theorized constructs (and thus, lack acceptable substantive validity), in most cases cannot have adequate construct-related validity (Anderson & Gerbing, 1991; Hinkin, & Tracey, 1999; Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). Therefore, substantive validity evaluations should occur *before* a scale or item is used to measure a given construct, as these analyses will pinpoint items that may perform poorly in a subsequent confirmatory factor analysis (CFA). In reality, however, very few studies report the extent to which such examinations of item content occur (cf. Bauer, Truxillo, Sanchez, Craig, Ferrara, & Campion, 2006; Chen, Gully, & Eden, 2001; Ferris, Brown, Berry, & Lian, 2008; MacKenzie, Podsakoff, & Fetter, 1991), and CFA results are usually the forms of evidence most often presented to indicate that items are appropriate reflections of the theorized construct.

Given the prevalent use of CFA to determine whether construct measures are indeed representing the intended construct, it begs the question of whether there is a need for substantive validity analysis. For example, researchers typically remove items from scales on the basis of CFA results, as these results are regarded as indicative of the extent to which items best represent the underlying construct. CFA is certainly useful in determining whether items share sufficient variance to be regarded as representing a single factor, but it does not actually indicate whether the assumed construct is represented by the measures. This is problematic for a number of reasons. First, measures may contain shared variance for a number of reasons (e.g., common method/source) and the mere existence of a common factor for items does not in and of itself indicate that the presumed construct has been measured or represented by the items. Second, the use of CFA for scale refinement is only appropriate for reflexive indicators of a construct, whereby the underlying construct causes the indicators, and should not be used for measurement models comprised of formative or causal indicators, where the measures actually cause the construct (e.g., Bollen & Lennox, 1991). These formative models may be composed of indicators that are not necessarily related, and therefore a CFA could erroneously lead a researcher to remove items with a central role in defining the given construct. For example, CWB is often defined as a formative construct (Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006), indicating that common internal consistency measures and factor analytic techniques are inappropriate. Thus, for work constructs that are formative rather than reflexive, the use of CFA to evaluate whether to retain measures is a problem, as the items are not necessarily intended to be related.

A third problem with relying only on CFA to determine whether items represent their intended constructs is that CFA does not provide essential information about the construct-related validity of the measures. Items that are retained by a CFA certainly may be contaminated or deficient with regards to a respective construct definition, yet this is not indicated in a CFA. Although items may "hang together" in a factor analysis in the theorized manner, the contamination or deficiency that may be unaccounted for means that the construct, as defined, has not been appropriately measured, thus undermining the credibility of hypotheses and theory. Indeed, CFA does not reveal whether the items used to measure a particular construct were, in fact, judged as representing the construct, as this is only accomplished through a substantive validity analysis. Thus, only when a substantive validity analysis occurs in addition to a CFA can researchers be more assured that empirical evidence derived from a CFA actually reflects the intended construct.

In general, substantive validity consists of an item-level assessment of the extent to which item content represents a theorized construct; it does *not* represent the actual performance of the behaviors represented in the item. That is, substantive validity analysis only focuses on judgments regarding the item content. Advantages of substantive validity analysis include the requirement of a substantially smaller sample (e.g., approximately 20 people are required for each subset of items, according to Anderson and Gerbing [1991]) than that required for factor analysis; additionally, in some cases, the analysis requires respondents to have only a simple understanding of the phenomena of interest in order to skillfully complete the assessment (e.g., Anderson & Gerbing, 1991; Hinkin, 1998; Schriesheim et al., 1993).

4.1 Approaches to Substantive Validity Analysis

Researchers have used different methods to assess the substantive validity of items. Hemphill and Westie (1950) developed an early index of substantive validity, termed the *index of homogeneity of placement*, derived from raters' judgments of the extent to which each item was relevant to a taxonomy of social group characteristics (e.g., autonomy, homogeneity, permeability). Specifically, for each of the 14 group categories, judges indicated whether each of 1,100 items: (a) matched the category, (b) did not match the category, and (c) was unable to be categorized (i.e., judges were undecided). This meant that judges rated each of the 1,100 items 14 times, once for each of the 14 group characteristics of interest. In addition to the laborious nature of the assessment, a critique of this approach was that the value of the index was dependent in part on the number of judges and the number of characteristics against which the item content was judged. In addition, there was no established metric for determining which items should be retained, as the authors retained items based on an arbitrarily chosen value of the index (Hinkin & Tracey, 1999).

Lawshe's (1975) *index of content validity* provided a quantitative measure of the extent to which a personnel selection test overlapped with the performance domain. Specifically, the index reflected judges' assessments of the extent to which the knowledge or skill referenced in each item was (a) essential, (b) useful but not essential, or (c) not necessary to job performance. The result of this assessment was a *content-validity ratio*. Items judged by more than half of raters to be essential for job performance were considered to have at least some degree of content validity, and evidence of content

validity was strengthened as the number of judges increased. Importantly, Lawshe (1975) also produced critical values for the ratio, which indicated the proportion of "essential" ratings needed to obtain statistically significant evidence that the particular item should be retained. However, in terms of the current study, this approach is not appropriate because the judgments were made only in regards to the extent to which the particular knowledge and skills were essential for job performance in general. Indeed, Lawshe stated that the purpose of the approach was to assess and subsequently improve the content-related validity of selection tests, and the index was intended to supplement the job analytic techniques used to define the job performance domain in a particular job or organization.

Anderson and Gerbing's (1991) approach to substantive validity assessment was put forth as a "pretest" of the appropriateness of items for CFA and differed from the aforementioned validity indices in two key ways. First, the substantive validity assessment was a comparative rating task in which judges read each item once and assigned it to the label and definition of the construct they perceived it to best represent. Therefore, the task was considered less arduous than previous assessments in which judges rated the set of items numerous times depending on the number of construct definitions (e.g., Hemphill & Westie, 1950). Second, the authors developed two indices of substantive validity—*proportion of substantive agreement*, which is the proportion of judges who assign the item to its theorized construct, and *substantive-validity coefficient,* which represents the extent to which judges assigned an item to its theorized construct more than to any other construct. This latter index represents an important extension of

previous approaches to examining substantive validity, as it accounts for the extent to which item content converges on the definition of the theorized construct as well as with the definitions of non-theorized constructs. Furthermore, the substantive validity coefficient can be tested for statistical significance. Anderson and Gerbing (1991) showed a great deal of convergence between the substantive validity indices they obtained and a subsequent CFA, such that items rejected by the substantive validity analysis would have eventually been rejected on the basis of the CFA loadings. However, it remains important to emphasize that these findings do not suggest that the CFA alone is sufficient to infer whether items represent their intended constructs.

Schriesheim et al.'s (1993) *index of content adequacy* differs from Anderson and Gerbing's (1991) approach as it does not consist of a sorting task or forced-choice rating, but instead utilizes Likert ratings. Judges rated the degree of correspondence between each item and each of the particular construct definitions. These data were analyzed in two different ways (e.g., consisting of either principal components analysis or principal axis factor analysis) and subsequently, the authors evaluated the factor loadings from both analyses to determine which items should be retained. Both approaches yielded the same results and demonstrated how the factor analysis of Likert ratings could be used to investigate the content representativeness of items.

Hinkin and Tracey (1999) further expanded on Schriesheim et al.'s (1993) work by applying an analysis of variance (ANOVA) technique to substantive validity. The use of ANOVA provided an objective standard for judging whether items should be retained, in contrast to the subjective evaluation of factor loadings. For example, if the average

rating of the degree to which an item represents its theorized construct is significantly greater than the item's average ratings for the non-theorized constructs, then this particular item should be retained, as its content is judged as representative of the theorized construct definition. An additional advantage of the use of ANOVA is that it requires a much smaller sample compared to that required by factor analysis, and the authors also pointed to the reduced sample size as a conservative means to assess the practical and statistical significance of items' content-representativeness.

Hinkin and Tracey (1999) utilized the same Likert rating format as Schriesheim et al. (1993), but analyzed these data using both ANOVA and the same factor analyses used in Schriesheim et al. The authors compared the results from both approaches and showed that the ANOVA method provided a more conservative test of the extent to which item content was judged to be representative of the construct in question, as it revealed additional items to be rejected. Notably, the authors pointed out that these rejected items would have been retained using the factor-analytic approach in Schriesheim et al. The current study proposes to use Hinkin and Tracey's (1999) approach as the use of Likert ratings in the assessment of the content-representativeness of performance items is more precise than a nominal sorting task.

4.2 How the Present Study Extends Previous Research

Although they had a relatively narrow focus, four studies have recently examined the issue of overlapping items in the work performance domain. These studies are reviewed in this section and, additionally, the present study's extension of these studies and this body of work in general, is highlighted. First, Vey and Campbell (2004) showed

that individuals with and without supervisory experience considered several OCB items to represent required task performance behavior (i.e., an expected part of the job). However, one limitation is that Vey and Campbell's assessment centered on a single measure of OCB. Furthermore, the items administered were modified to represent behaviors that pertained to a supermarket cashier position (e.g., "maintaining a clean register area"). Therefore, it cannot be determined whether the overlap observed in this study is analogous to that which would be observed for the original items that reflect behaviors that apply to a large range of jobs. The present study used only the original versions of work performance items to investigate the extent to which measures—as currently used—display overlapping content.

An additional critique of Vey and Campbell (2004) is that the two categories into which the OCB items were sorted, (a) above and beyond job requirements, and (b) an expected part of the job, appear to be deficient in terms of the theorized conceptual definitions of OCB and task performance (Stone-Romero, Alvarez, & Thompson, 2009). Consequently, the present study addressed both of these limitations by developing non-overlapping construct definitions of four core performance constructs from extant criterion theories and subsequently examining the extent to which performance items overlap with these definitions of the behaviors. This serves as an important extension of Vey and Campbell because the present study assessed the extent to which the content of OCB measures is judged to represent multiple theorized and non-theorized constructs (i.e., task performance, CWB, withdrawal).

Next, to explicate the relationship between task and contextual performance, Stone-Romero et al. (2009) examined the overlap between the items used to measure contextual performance and the job descriptions provided in the Occupational Information Network (O*NET) and the Dictionary of Occupational Titles (DOT; U. S. Department of Labor, 1991). Specifically, Stone-Romero et al. (2009) questioned whether items measuring the *conscientiousness* dimension of OCB, which includes behaviors such as "punctuality" and "does not take unnecessary time off work," represented actions that employees would consider themselves as having a great deal of discretion in enacting. Thus, Stone-Romero et al. posited that these behaviors would be judged as more representative of task performance than contextual performance. Stone-Romero et al. (2009) showed considerable overlap between the job descriptions in the DOT and O*NET and items used to measure contextual performance. For example, a job description requiring a worker to meet deadlines, irrespective of the number of hours required to do so maps onto the contextual performance item, "Put in extra hours to get work done on time." The results highlighted the overlap between contextual performance items and actual task requirements of jobs. However, one important limitation of this study was that the judgment of overlap was determined by a single rater. This is problematic since their findings could be due to the idiosyncratic bias or error of the rater. The present study's use of multiple raters is an important extension, as it is an assessment of whether the judgments of overlap generalize across many raters, thus providing stronger evidence that the issue likely resides with the items or definitions, rather than the rater. Additionally, like Vey and Campbell (2004), Stone-Romero et al.'s study focused

only on the overlap between OCB/contextual performance measures and task performance conceptualizations which, as previously described, is a limitation the present study also addressed.

Spector, Bauer, and Fox (2010) examined the overlapping content in OCB and CWB items using an experiment to isolate item-related artifacts (e.g., the type of response scale) that could influence the magnitude of the relationship between the behaviors. Spector et al. (2010) and Dalal (2005) noted that many CWB and OCB items reflect the same behaviors but with reversed wording. For example, the (reverse-scored) item, "Takes undeserved breaks" (Smith et al., 1983) would be used to measure OCB, while a corresponding CWB item would be "Taken a longer break than you were allowed to" (Spector et al., 2006).

Spector et al. (2010) collected ratings of the behaviors and showed that a number of existing conclusions regarding the relationship between CWB and OCB and their respective nomological relationships were affected by the inclusion of content-overlapping items in the scales used to measure the behaviors. For example, the correlation between self-reported CWB and OCB when overlapping items were used was -.57 compared to -.00 when such overlapping items were not included (using an agreement response format). The correlation for supervisor-reported behaviors was -.75 for overlapping items compared to -.42 for non-overlapping items (agreement response format). For both supervisor and self-ratings, the frequency response format showed the same pattern of results. However, one limitation of Spector et al. (2010) was the use of shortened CWB and OCB measures, which means that neither the complete scales nor the

theorized dimensions of the behaviors were measured. Therefore, although the findings of Spector et al. were certainly informative in demonstrating the inflating effect of item overlap on the magnitude of construct and nomological relationships for CWB and OCB, the present study's use of complete construct scales and an expanded view of the criterion is likely to provide a more comprehensive examination of this issue.

Carpenter et al. (2011) attempted to address the limitations of Spector et al. (2010), Stone-Romero et al. (2009), and Vey and Campbell (2004), by examining the extent to which over 900 items—intended to measure task performance, citizenship performance, CWB, and withdrawal behavior—were judged to reflect theoretical construct definitions (see Murphy 1989, 1990). As previously noted, Carpenter et al. (2011) showed that over half of the items assessed were judged by multiple raters to reflect non-theorized behaviors, and in some cases these judgments were *unanimous* across raters.

Although Carpenter et al. (2011) was the first (to the best of the authors' knowledge) to examine the extent to which performance measures overlap with multiple definitions of performance constructs, the study was not without its limitations. First, as would be expected, the measures evaluated represented a number of different theoretical frameworks, yet the construct definitions used in the assessment were based on a single theoretical framework of the behaviors—Murphy's (1989, 1990) construct definitions. Therefore, an alternative explanation for their results could be that the items were not judged to reflect Murphy's (1989, 1990) theoretical definition of the constructs because they were not originally intended to. To address this concern, the current study developed

precise, non-overlapping definitions of the four work performance constructs. These definitions link multiple perspectives of each respective construct such that the definition reflects the *core* meaning of the construct.

An additional critique of Carpenter et al. (2011) is that items were sorted into one of the four categories representing the constructs. Thus, even if a rater perceived a particular item to equally represent multiple constructs, it could not be reflected in the assessment. The present study used the ANOVA approach to substantive validity analysis (see Hinkin & Tracey, 1999) and thus highlighted the *degree* to which a particular item is judged to reflect a given construct more or less than others. Finally, Carpenter et al. (2011) conducted their assessment using a sample of undergraduate students. Although they demonstrated that there were no material differences in the sort patterns of participants who did and did not have any work experience, it is important to determine whether such results generalize to a sample of currently-employed incumbents and supervisors.

4.3 Hypotheses

The issues presented in the preceding sections highlight that it is unlikely that work performance items uniformly represent their intended constructs. Indeed, researchers' observations regarding conflicting conceptualizations, overlapping constructs and measures, as well as the findings of previous research collectively provide the conceptual basis for the pattern of findings expected in this study. For example, although Spector et al. (2010) showed that negatively-worded OCB items overlap with CWB, it is expected that OCB items such as, "does not take unnecessary time off work"

(Smith et al., 1983), and "rarely misses work even when he/she has a legitimate reason for doing so" (Moorman & Blakely, 1995), which reflect negative attendance behaviors, are likely to be perceived to reflect task performance significantly more often than CWB and other constructs. First, as noted by Stone-Romero et al. (2009), such attendance behaviors are likely to be perceived as *required* parts of the work role, or components of task performance. Second, Carpenter et al.'s (2011) results indicated that such OCB items were perceived as task performance, although their use of a nominal item-sort task precluded an assessment of the *extent* to which raters perceived the negatively-worded OCB items to represent task performance relative to other constructs. Therefore, it is posited that raters will judge negatively-worded OCB items to reflect task performance significantly more than OCB, CWB, and withdrawal. For the same reasons outlined by Stone-Romero et al., it is also posited that in general, OCB items with content reflecting attendance and effortful work behaviors—typically designated as OCB towards the organization—will be perceived to represent task performance significantly more often than CWB, OCB, and withdrawal.

> *Hypothesis 1:* Raters will judge negatively-worded OCB items to be significantly more representative of task performance than OCB, CWB, or withdrawal.
>
> *Hypothesis 2:* Raters will judge OCB items reflecting attendance and effortful actions to be significantly more representative of task performance than OCB, CWB, or withdrawal.

Overall, it is expected that the content of items used to measure task performance will be judged to be significantly more representative of the theorized construct. As

shown in Table 2, the construct definitions for task performance are very similar across

widely different conceptualizations of the criterion domain, indicating that most authors

consider task performance to represent the performance of core tasks that are specific to

the job or role. Similarly, as shown in Table 3, the content of many task performance

items also appears to most closely reflect the definitions of task performance. This

suggests that there is less ambiguity in the conceptual definition of task performance, and

that raters will judge task performance items to be significantly more representative of

the definition.

> *Hypothesis 3*: Raters will judge task performance items to reflect the theorized
>
> construct significantly more than other non-theorized constructs (i.e., OCB, CWB,
>
> and withdrawal).

Although previous research has focused on the presence of overlapping behaviors

in the items used to measure CWB and OCB, little attention has been paid to the degree

of overlapping behaviors contained in the items used to measure CWB and withdrawal,

two negative workplace behaviors. Carpenter and Berry (2011) highlighted the confusion

in the conceptualizations of CWB and withdrawal. For example, CWB and withdrawal

are sometimes defined as largely overlapping and redundant (e.g., Fox & Spector, 1999;

Hanisch & Hulin, 1991; Rotundo & Spector, 2010), but they are also often regarded as

distinct sets of behaviors (e.g., Lehman & Simpson, 1992; Murphy, 1989, 1990).

Carpenter and Berry (2011) provided examples of overlapping behaviors contained in the

items used to assess both constructs. These included behaviors such as (the lack of)

attendance and effort, and theft. Because the conceptualizations of the negative

workplace behaviors are sometimes considered quite similar, it is expected that raters will

judge items theorized to measure CWB and withdrawal to be significantly more

representative of either CWB or withdrawal compared to task performance and OCB.

Table 3

Examples of Task Performance, Citizenship Performance, CWB, and Withdrawal Items in the Extant Literature

---

Task Performance
    Adequately completes assigned duties. [f]
    Carried out the core parts of your job well [b]
    Ensured your tasks were completed properly [b]
    Fulfills responsibilities specified in job description. [f]
    Meets formal performance requirements of the job. [f]

Citizenship Performance
    Assisting co-workers with personal matters [a]
    Assists supervisor with his/her work (when not asked). [f]
    Demonstrating respect for organizational rules and policies [a]
    Does not take unnecessary time off work [d]
    Endorsing, supporting, or defending organizational objectives [a]

CWB
    Be absent from work without a legitimate excuse [c]
    Come to work under the influence of drugs [c]
    Conduct personal business during work time [c]
    Intentionally do work badly or incorrectly [c]
    Took money from your employer without permission [e]

Withdrawal
    Came to work late without permission [e]
    Left work earlier than you were allowed to [e]
    Stayed home from work and said you were sick when you were not [e]
    Taken a longer break than you were allowed to take [e]

Note. [a] Coleman and Borman (2000); [b] Griffin et al. (2007); [c] Gruys and Sackett (2003); [d] Smith et al. (1983); [e] Spector et al. (2006); [f] Williams and Anderson (1991).

Hypothesis 4: Raters will judge CWB and withdrawal items to be significantly more representative of either CWB or withdrawal compared to task performance or citizenship performance.

In general, it is expected that the relationships between performance constructs will be stronger if the constructs are measured with items that reflect overlapping behaviors. For example, the correlation between task and citizenship performance is expected to be stronger when citizenship performance is measured with items/scales found to represent task performance, compared to when only non-overlapping items are included. This expectation draws from Dalal (2005) and Spector et al. (2010), who both found that the strong correlation between OCB and CWB was an artifact of overlapping items. Dalal (2005) found that the OCB-CWB corrected correlation was -.66 when overlapping items were used, compared to -.19 when non-overlapping items were used; Spector et al.'s (2010) results (see previous section) mirror these findings. However, the nature of the effect of overlapping content may not be straightforward. Indeed, Carpenter and Berry's (2011) meta-analysis showed an opposite effect of content-overlapping CWB and withdrawal items. Therefore, it is unclear how content-overlapping items influence construct relationships. For example, an inflated correlation could result when similar behaviors are included in items measuring both constructs, perhaps due to consistent responding patterns (i.e., consistency motif; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Schmitt, 1994). However, when the overlapping items are removed from measures of the constructs, it is unclear if the resulting correlation would be inflated or attenuated

(Nicholls, Licht, & Pearl, 1982), since it is currently unknown how the contamination due to item overlap influences relationships between constructs.

In addition to examining the intercorrelations among the work performance constructs as evidence of the effect of overlapping performance items, the present study also examined the extent to which the magnitude and pattern of relationships between performance constructs and their respective nomological networks (e.g., relationships with personality, job attitudes, justice perceptions) change as a function of the inclusion or removal of overlapping items. For example, the corrected correlation between agreeableness and citizenship behavior (.14 [mean corrected]; Chiaburu, Oh, Berry, Li, & Gardner, 2011), may differ when citizenship is measured with non-overlapping items. Therefore, the following research questions are examined:

> *Research Question 1:* How does the inclusion and removal of content-overlapping items influence the magnitude and direction of relationships among work performance constructs?

> *Research Question 2:* How does the inclusion and removal of content-overlapping items influence the magnitude and direction of the relationships between work performance constructs and the variables in their respective nomological networks?

The research questions and hypotheses were investigated in two studies. The objective of Study 1 was to determine the extent to which the instruments used to measure work performance constructs refer to behaviors that are inconsistent with the theoretical definition of the respective construct. As a result of Study 1, specific items

were designated as either (a) a representative of the theorized construct; or (b) inconsistent with the theorized construct. The objective of Study 2 was to examine the extent to which relationships among work behaviors as well as nomological networks differed when constructs were measured with (a) the original instruments (i.e., containing items that may or may not be representative of the theorized construct); or (b) instruments that were revised by removing the items that were inconsistent with the construct (i.e., containing only items judged as representing the construct).

5. METHOD – STUDY 1

5.1 Substantive Validity Assessment

Study 1 consisted of an evaluation of the extent to which the content of items measuring four work performance constructs (i.e., task performance, citizenship performance, CWB, and withdrawal) was judged to represent the respective theorized construct. The substantive validity assessment consisted of two phases. In Phase 1, construct definitions were developed using the extant literature and the set of work performance items were selected. In Phase 2, the substantive validity of these items was assessed.

5.1.1 Phase One: Development of Construct Definitions and Selection of Performance Items

The first step in the substantive validity assessment was to develop definitions for each construct. Using the extant literature, short yet comprehensive definitions of each construct were developed to capture the core meaning of the behavior. However, it was necessary to determine that each definition was satisfactory in its representation of the respective construct, meaning that it was neither deficient nor contaminated. Thus, to determine the adequacy of the construct definitions, a brief survey was sent to seminal scholars in the work performance domain ($N = 13$). These scholars were identified and subsequently contacted if they had either (a) published a theoretical model or conceptualization of the work performance domain; or (b) published theoretical definitions of at least one of the four core constructs. Many of these scholars had also

developed measures of the core constructs. Of the 13 raters who were contacted, 11 provided feedback and/or ratings (85% response rate).

Respondents were asked to review each construct definition and then, using a five-point rating scale (1 = very unsatisfactory, 5 = very satisfactory), rate the extent to which they judged each definition to be satisfactory in terms of its completeness (i.e., neither contaminated nor deficient). Respondents were also provided the opportunity to indicate the specific text or ideas that should be added or deleted if they had any concerns about the definitions.

Next, the respondents in the sample who had developed scales or items to measure any of the four work performance behaviors were asked to use a five-point rating scale (1 = very unsatisfactory, 5 = very satisfactory) to rate the extent to which the particular construct definition satisfactorily represented the construct they intended their scale/items to measure. The questionnaire the scholars completed is presented in Appendix A. Appendix B presents the original definitions, ratings, and comments from respondents, as well as how the original definitions were refined in response to the feedback that was received.

For task performance (mean rating = 3.78, SD = 1.09), comments from raters reflected the original definition's overlap with citizenship performance and overall job performance. For citizenship performance (M = 3.11, SD = 1.27), the raters pointed out the overlap of "persistence and extra effort" with task performance and the need to more clearly specify the targets of citizenship behavior. For CWB (M = 3.44, SD = 1.42), raters questioned whether CWB reflected intentional behavior. Finally, for withdrawal (M =

3.00, *SD* = 1.50), raters noted that behavior was not indicated by the use of "intentions

and desires" and "attempts" in the definition. Raters also provided suggestions regarding

the inclusion of additional conceptualizations of withdrawal. A number of revisions were

made to the definitions on the basis of the raters' feedback. The construct definitions

resulting from this process are presented in Table 4.

Table 4

Revised Construct Definitions

Task performance
Performance of the core tasks that are formally required in the employee's role or job.
Task performance reflects the degree to which an employee meets the requirements of his
or her individual role or job. Behaviors may include the activities and requirements that
are specified in a job description, and these activities may be specific to one job.

Citizenship performance
Performance of behaviors that are completed in addition to the employee's core tasks.
These behaviors support the work environment. Citizenship performance behaviors may
include actions that benefit or support others in the organization, or that benefit or
support the organization itself.

Counterproductive work behavior (CWB)
Performance of behavior that violates organizational interests and norms, and that may
harm the organization itself, coworkers/supervisors, or both. Some example behaviors
include theft, abuse of the company's information, time, or resources, and engaging in
harmful actions towards others.

Withdrawal Behavior
Performance of behaviors that represent an employee's disengagement from the work
environment and/or tasks. Withdrawal behavior reflects the extent to which an employee
reduces attendance, attention, or effort and, therefore, escapes or avoids work. Some
examples may include poor attendance, quitting, or daydreaming.

The necessary next step was to determine whether each revised definition was

satisfactory in its representation of the respective construct. Therefore, a convenient

sample consisting of faculty members, alumni, and current graduate students (with at least a Master's degree) of industrial/organizational (I/O) psychology or management programs was surveyed. Seventy individuals were initially contacted and 47 responded (67% response rate). Similar to the questionnaire completed by the scholars, respondents were asked to review each of the construct definitions, and then use a five-point rating scale (1 = very unsatisfactory, 5 = very satisfactory) to rate the extent to which the particular definition was satisfactory (i.e., accurate and complete). Respondents were also provided the opportunity to comment on the definitions. Finally, respondents reported their highest degree earned (mode = PhD in I/O Psychology), the number of years since earning their terminal degree (i.e., PhD; mode = 8 [2009]), their experience with rating employee performance ($M = 3.57$, $SD = 1.33$; five-point scale), and their familiarity with the definitions of performance constructs ($M = 4.63$, $SD = 0.48$; five-point scale). The questionnaire that was administered as well as the descriptive statistics for the sample characteristics are presented in Appendix C.

Additional revisions were made to the construct definitions in response to the feedback obtained from the general sample of I/O psychology and management scholars. For example, for the task performance definition ($M = 4.38$, $SD = .77$), "may or may not be specific to one job" was removed because it was deemed as unnecessary. For citizenship performance ($M = 4.13$, $SD = .90$), clearer examples were provided along with the clarification that citizenship behaviors were "distinct from" the core tasks. For withdrawal behavior ($M = 4.29$, $SD = .80$), minor changes were made to the examples. Finally, no changes were made to the CWB definition ($M = 4.17$, $SD = 1.00$).

Importantly, the mean ratings for the general sample were higher than in the scholar

sample, which suggested that each of the four definitions was an improvement from the

original version. A comparison of the mean ratings across the two samples is presented in

Figure 2. The final version of the construct definitions is presented in Table 5.
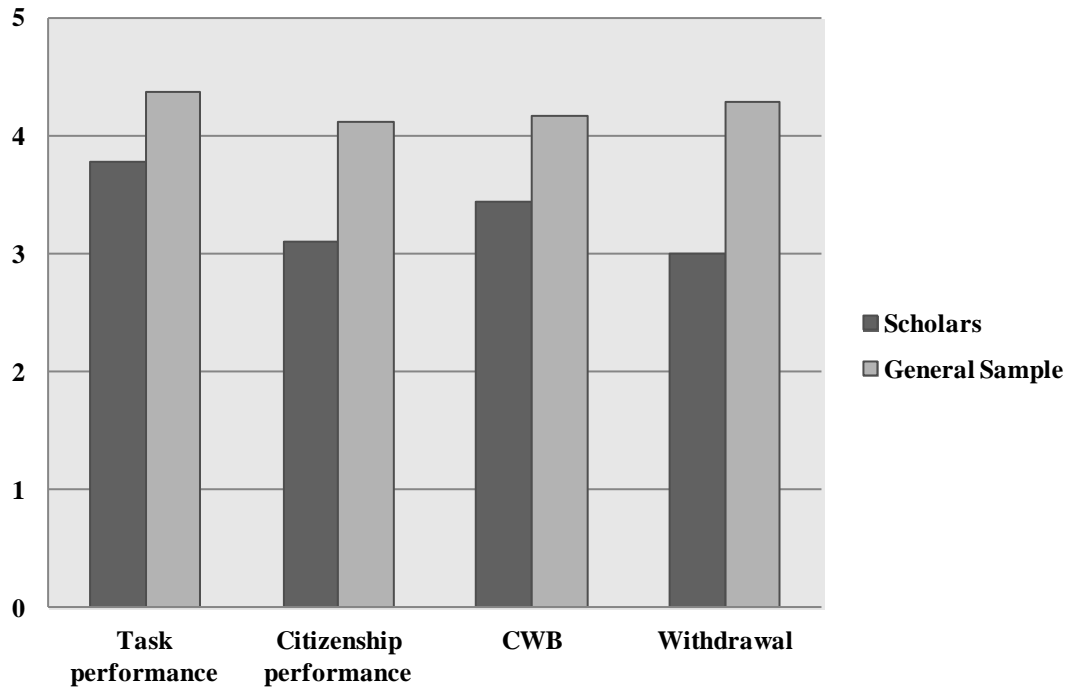
Figure 2. Comparison of work performance expert and OB/HR scholars ratings of the construct definitions.

Table 5

Final Version of Construct Definitions

Task performance

Performance of the core tasks that are formally required in the employee's role or job. Task performance reflects the degree to which an employee meets the requirements of his or her individual role or job. Behaviors may include the activities and duties that are specified in a job description.

Citizenship performance

Performance of behaviors that are distinct from the employee's core tasks. These are positive behaviors that support the work environment. Citizenship performance behaviors may include actions that benefit or support others in the organization, or that benefit or support the organization itself. Examples include assisting a coworker and presenting a positive image of the organization to others.

Counterproductive work behavior (CWB)

Performance of behavior that violates organizational interests and norms, and that may harm the organization itself, coworkers/supervisors, or both. Examples include theft, abuse of the company's information, time, or resources, and engaging in harmful actions towards others.

Withdrawal Behavior

Performance of behaviors that represent an employee's disengagement from the work environment and/or tasks. Withdrawal reflects the extent to which an employee reduces attendance, attention, or effort and, therefore, escapes or avoids work. Examples include poor attendance, daydreaming, and turnover (quitting).

5.1.2 Phase 2: Substantive Validity Assessment

The purpose of Phase 2 was to assess the extent to which work performance items were judged to represent the construct definitions that were developed in Phase 1. There were 851 items (identical to those assessed in Carpenter et al., 2011) that were rated by employees and supervisors. In general, respondents rated a subset of items on the extent to which each item was representative of each of the four construct definitions.

The comprehensive set of work performance instruments consisted of 851 work performance items and the substantive validity assessment required respondents to rate a

given item four times. Thus, to reduce the likelihood of respondent fatigue and also ensure that respondents maintained attention on the task, it was deemed necessary to divide the total set of items into smaller subsets for the assessment. Two pilot studies were conducted to determine the appropriate length of these subsets.

5.1.2.1 Pilot Study 1. In the first pilot study, item subsets consisting of (a) 40, (b) 50, (c) 75, and (d) 100 items were randomly selected. Importantly, these items overlapped across subsets. That is, the 50-item subset contained the same items from the 40-item subset, the 75-item subset contained the items in the 50-item subset, and the 100-item subset contained the items in the 75-item subset. Respondents ($N = 42$) were undergraduate students in an upper-level course who participated to obtain extra credit. Respondents completed the same substantive validity task but were randomly assigned to one of the four item subset lengths as follows: (a) 40 items ($n = 12$); (b) 50 items ($n = 10$); (c) 75 items ($n = 8$); and (d) 100 items ($n = 12$). Thus, respondents in the 40-item condition rated each of the 40 items 4 times for the construct definitions (task performance, citizenship performance, CWB, and withdrawal). To control for ordering effects, both (a) the order in which the items were presented; and (b) the order in which the construct definitions were presented were randomized. To assess the extent to which respondents may have become fatigued or distracted on the task, response times were recorded and distractor items (e.g., "Please select 'Not at all'") were included. Respondents were also given the opportunity to provide comments about the task.

For each of the different item subsets conditions (e.g., 40 items, 75 items), within-subjects ANOVAs revealed that there were no significant differences in the average time

participants took to complete the ratings of the four construct definitions. Specifically, results for the 100-item subset (F [3, 33] = .13, $p > .05$, $\eta^2 = 0.01$), 50-item subset (F [3, 27] = .83, $p > .05$, $\eta^2 = 0.08$), and 40-item subset (F [3, 33] = 1.18, $p > .05$, $\eta^2 = 0.10$) indicated no significant differences in the time needed to complete the ratings. The 75-item subset did show significant differences (F [3, 21] = 3.23, $p < .05$, $\eta^2 = 0.32$), but post-hoc paired sample t-tests revealed no significant differences across any of the different conditions (i.e., all p-values were > .05). Thus, this indicates that there was little evidence of survey fatigue. For the 100-item subsets, however, there were respondents who took over 90 minutes to complete the task, and many respondents who completed either the 75- or 100-item subsets indicated that the task was too long and that they had become fatigued during the task. There was a similar number of participants in each of the conditions who also failed to correctly answer the distractor items. Altogether, the results of the pilot indicated that the 75- and 100-item subsets were too long for respondents to complete, but that the 50-item subsets were likely an appropriate length for the task.

5.1.2.2 Pilot Study 2. The first pilot study also revealed that many respondents did not understand the directions of the task. Several participants indicated that they completed 50% of the task before realizing the nature of the task and what they were required to do. Therefore, it was necessary to conduct a second pilot study with just the 50-item subset, but with more detailed instructions and examples of the task. As part of the revised instructions, participants read a brief statement explaining the purpose and use of work performance items, and a brief overview of the respondent's task. Participants

were then provided step-by-step task instructions as well as accompanying examples. Specifically, the substantive validity assessment was presented as containing three steps: (a) *reading the definitions of the four work performance constructs*. All four definitions were presented to respondents as a preview of what they would see when completing the task; (b) *rating how well each work performance item represents the definition*. A screenshot of the actual task layout was also presented to familiarize respondents with the task. Participants were also explicitly reminded that they were *not* rating their own performance of the behavior in the item; and (c) *rating the same sets of items for each of the four definitions.* The importance of paying close attention to the definitions throughout the entire task was also emphasized. At the end of the revised instructions, participants were encouraged to refer to previous pages and re-read any part of the instructions that remained unclear. The revised instructions are included in their entirety in Appendix D.

The second pilot study consisted of the 50-item subset and the revised assessment instructions. Respondents ($N = 12$) were undergraduate students in an upper-level psychology course who participated for extra credit. The participants in the second pilot study did not participate in the first pilot study. Except for the revised instructions, the task was the same as in the first pilot study. Within-subjects ANOVAs revealed that there were no significant differences in the time participants took to complete ratings for the four construct definitions, $F (3, 33) = .391$, $p > .05$, $\eta^2 = 0.03$. Participants also appeared to maintain attention to the task, as nearly all of the distractor items (88%) were passed successfully by all participants. The only incorrect responses were provided by a single

participant who answered two items incorrectly. Finally, participants did not note any difficulty in understanding the directions for the task. Thus, this version of the substantive validity assessment containing the revised instructions and the 50-item subset was used in the subsequent procedure.

5.1.2.3 Participants. The sample, which was international in nature, consisted of 826 currently-employed participants (63.6% male) who were recruited from the Mechanical Turk website, where participants complete tasks and surveys online for small payments. Sixty-seven percent of persons were from India, 20% from the US, and a combined 12% from Canada, Australia, and the United Kingdom. The average age of participants was 30.27 ($SD = 9.04$), and over half of participants were employed in supervisory or managerial positions (55.7%). Participants worked in a variety of industries, examples including banking (10.7%), customer service or retail (16.9%), education (14.7%), sales (10.7%), and health care (7.3%). Participants reported an average organization tenure of about five years ($SD = 6.13$).

5.1.2.4 Procedure. Participants responded to a post on Mechanical Turk offering a brief survey regarding the questionnaires (i.e., work performance items) used to measure job performance. At the beginning of the survey were the detailed instructions regarding the nature of the task developed in Pilot Study 2. Consistent with the steps outlined in Hinkin and Tracey (1999), participants evaluated every item in their respective subset four times for each of the four construct definitions (see Table 5). Specifically, participants rated the extent to which each item was consistent with the definition of task performance, citizenship performance, CWB, and withdrawal using a

five-point rating scale (1 = not at all, 5 = completely). The order of the items in each subset and the order in which the construct definitions were presented were randomized. In addition, each subset administered in the substantive validity assessment contained 16 distractor items, and participants' work was only accepted and subsequently compensated if at least 13 (81.25%) of these distractor items were answered correctly.

*5.1.2.5 Analyses***.** Although Hinkin and Tracey's (1999) approach suggests the use of ANOVA and significance testing, effect sizes were used for two important reasons. First, because 50-item subsets were used, 27 separate surveys were administered to ensure that each item was evaluated by at least 30 respondents. As a result, items were rated by between 30 and 100 respondents. Given this circumstance, relying on significance testing could provide misleading results regarding the mean differences across ratings of the definitions. Second, the purpose of this study was to document and interpret for each item the *magnitude* of the mean differences of ratings of each construct definition. For example, it was important to understand *how much* an item was judged to represent its posited construct compared to other non-posited constructs.

Therefore, standardized mean differences (*d*) were calculated for each item. At least three *d*s were calculated to correspond with each mean difference between the posited construct and the three remaining non-posited constructs. To illustrate, for an item posited to measure CWB, the *d* for the comparisons between: (a) CWB and task performance; (b) CWB and withdrawal; and (c) CWB and citizenship were evaluated against the standard of 0.80. The value of .80 was used as a standard because in most settings this value would be considered to be a fairly large effect. Thus, this 0.80 standard

represents a conservative test of the degree of overlap. Subsequently, items with ds

greater than or equal to 0.80 for each of the relevant comparisons were designated as

representing the posited construct. Items that did not meet this criterion were further

evaluated to determine if they were (a) *confounded*, meaning that items had low ds for all

possible comparisons; (b) *tied*, meaning that items had ds above 0.80 for two of three

comparisons, but a d below 0.80 for one comparison, indicating that many participants

were unable to decide between two constructs as the best representative of the particular

item. For example, the ds for CWB may be above 0.80 for the comparisons with task

performance and citizenship, but not for the comparison with withdrawal, indicating a

"tie" between CWB and withdrawal; and finally, (c) *non-posited matches*, meaning that

the items met the d criterion for a non-posited construct. In this case, a posited CWB item

may not meet the standard for CWB d comparisons, but may have ds greater than or

equal to .80 for the relevant withdrawal comparisons. Finally, as an additional analysis,

the results of Study 1 were also compared with those from Carpenter et al. (2011) to

determine the extent to which the pattern of results replicated.

6. RESULTS – STUDY 1

The results indicated that of the 851 items evaluated, about 43% (366 items) met the d criterion (e.g., ds greater than .80 for the three relevant comparisons) for the posited construct, about 11% (93 items) met the d criterion for a non-posited construct, and 46.06% (392 items) were initially judged to be confounded. Of these confounded items, 54 (13.78%) were judged to represent at least three constructs, while 338 (86.22%) were judged to be *tied*, meaning that the standardized difference between the mean ratings of two constructs was less than .80. A summary of these results is presented in Table 6, and a visual depiction of these results is presented in Figure 3. In addition, CWB items had the highest mean d for the posited construct (= 3.47), followed by task performance (= 2.52), citizenship performance, (= 2.32), and withdrawal (= 1.82). This indicates that compared to the other constructs, CWB items had higher mean ratings for the posited construct compared to non-posited constructs, indicating that CWB items were more strongly perceived to represent the posited construct definition. These average ds are presented in Table 7 and the full item-level results are presented in Appendix E.

Table 6

Summary of Construct-Level Results

| Posited Construct | # of items | Perceived Construct ($d \geq 0.80$) | | | | |
		CWB	Citizenship	Task Performance	Withdrawal	Confounded
CWB	319	**50%**	< 1%	0%	9%	41%
Citizenship	304	0%	**43%**	10%	0%	46%
Task Performance	170	2%	12%	**30%**	4%	52%
Withdrawal	58	2%	3%	0%	**43%**	52%

Note. CWB = counterproductive work behavior
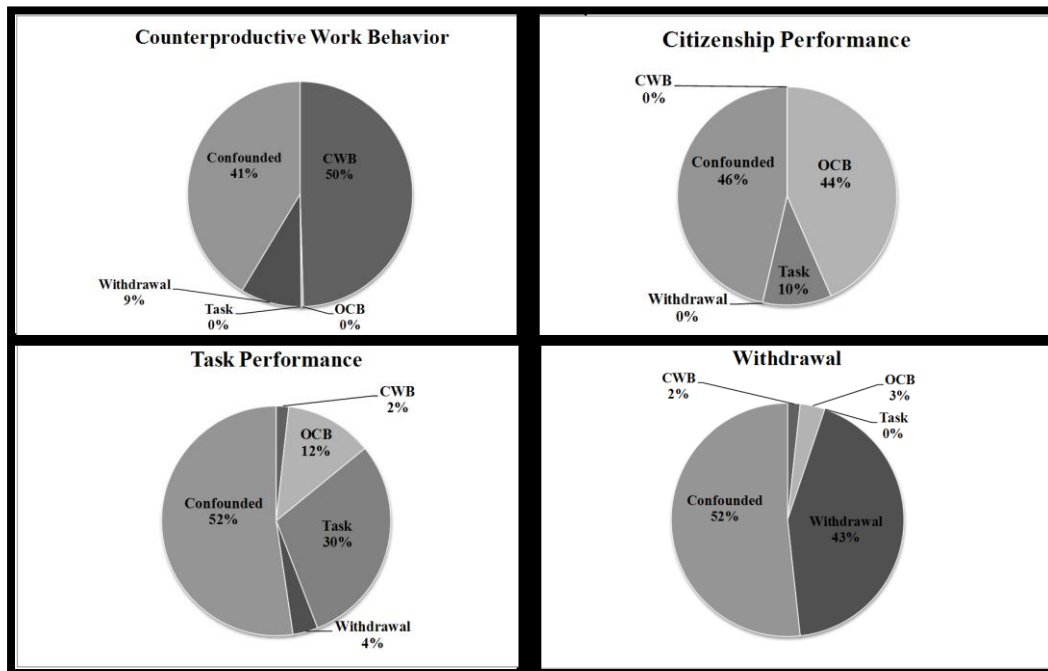
Figure 3. Summary of *d* criterion results regarding how raters perceived items posited to measure each construct.

Table 7

Comparison of Average d-statistics

Posited Construct	Overall posited construct	Items matching posited construct	Items not matching posited construct
CWB	3.47	5.14	1.84
Citizenship	2.32	3.45	1.44
Task Performance	2.52	4.51	1.66
Withdrawal	1.82	3.15	0.82

Note. refers to the average *d* for each item's relevant comparisons. CWB = counterproductive work behavior.

6.1 Substantive Validity Results for Each Construct

6.1.1.Citizenship Performance

Of the 304 items posited to represent citizenship performance, about 43% ($n = 132$) were judged to represent the posited construct. About 10% ($n = 31$) were judged to represent a single non-posited construct. Importantly, *each* of these 31 items was judged to represent task performance. Next, about 46% ($n = 141$) of citizenship items were judged to be confounded. Of these confounded items, about 83% ($n = 117$) were tied between task performance and OCB, while 1 item indicated a tie between CWB and withdrawal, and 1 item each indicated a tie between OCB and CWB, and between OCB and withdrawal. The remaining 15% of confounded items were judged to represent at least three constructs. Hypothesis 1 predicted that negatively-worded items (e.g., "does not take unnecessary time off work") would be judged to represent task performance, and not OCB, withdrawal, or CWB. There were 17 items that were negatively worded, and only 1 was judged to represent citizenship performance. Three items (18%) were judged to represent task performance, while 71% of the negatively worded items ($n = 12$) were judged to represent both citizenship and task performance. Therefore, Hypothesis 1 (Raters will judge negatively-worded OCB items to be significantly more representative of task performance than OCB, CWB, or withdrawal) was partially supported.

Next, Hypothesis 2 expected that posited citizenship performance items reflecting attendance and effortful behaviors would be judged to represent task performance more than other constructs. There were 25 citizenship performance items reflecting attendance behaviors (e.g., "Is always on time"), and only 2 of these items were judged to reflect the

posited construct. Five of these items were judged to represent task performance, while 16 (64%) were judged to represent both task and citizenship performance. The remaining items were confounded with more than two constructs. There were 20 posited citizenship performance items that reflected employees' effort (e.g., "putting forth extra effort on own job"). Nine of these items were judged to represent the posited construct, two were judged to represent task performance, and five were judged to represent both task and citizenship performance. The pattern of these results provides partial support for Hypothesis 2 (Raters will judge OCB items reflecting attendance and effortful actions to be significantly more representative of task performance than OCB, CWB, or withdrawal).

6.1.2 Task Performance

Of the 170 items posited to represent task performance, about 30% ($n = 51$) were judged to represent the posited construct. About 18% ($n = 30$) were judged to represent a non-posited construct. Specifically, 21 items (12.35%) were judged to represent citizenship performance, 6 items (3.5%) were judged to represent withdrawal, and 3 items (1.77%) were judged to represent CWB. More than 50% ($n = 89$) of items posited to represent task performance were judged to be confounded. Notably, about 83% ($n = 74$) of these confounded items were tied between citizenship and task performance, meaning that although these items were clearly judged to not represent CWB and withdrawal, there was no difference between the mean ratings for representing task or citizenship behavior. About 11% ($n = 10$) of the confounded items were tied between CWB and withdrawal, and there was one item that indicated a tie between task

performance and CWB. Finally, there were three items that were confounded with at least three constructs. Although it was expected in Hypothesis 3 that task performance items would most often be judged to represent the posited construct, this hypothesis was not supported.

6.1.3 CWB

There were 319 items posited to represent CWB, and about 50% ($n = 158$) were judged to represent the posited construct. About 9% ($n = 29$) were judged to represent a non-posited construct. With the exception of one item (which was judged to represent citizenship), each of these items was judged to represent withdrawal. Approximately 41% ($n = 132$) of CWB items were judged to be confounded. Of the confounded items, about 78% ($n = 103$) were judged to be tied between CWB and withdrawal, and one item indicated a tie between OCB and CWB. The remaining 20.45% of confounded items were judged to represent at least three constructs.

6.1.4 Withdrawal

Of the 58 items posited to represent withdrawal, about 43% ($n = 25$) were judged to represent the posited construct. Only three items (5.17%) were judged to represent a single non-posited construct. Two items were judged to represent citizenship performance, one item was judged to represent CWB, and one item was judged to represent task performance. Of the withdrawal items, about 52% ($n = 30$) were judged as confounded. Of these confounded items, about 63% ($n = 19$) were judged to be tied between CWB and withdrawal, while about 17% ($n = 5$) were judged as tied between OCB and task performance, 1 item was judged as tied between OCB and withdrawal, and

2 items were tied between task performance and withdrawal. The remaining three items were judged to represent at least three constructs. In sum, the results for both CWB and withdrawal supported Hypothesis 4, which stated that CWB and withdrawal items would be judged to represent either of these two constructs significantly more than task or citizenship performance.

6.2 Description of Confounded Items

Importantly, the use of Likert rating scales provided a more clear understanding of the places of overlap for items designated as confounded. In Figure 4, the specific points of overlap for the confounded items are presented. For example, the results show that the majority (i.e., 83%) of confounded citizenship performance items were judged as representing both citizenship and task performance, while a much smaller proportion were judged to overlap with withdrawal and/or CWB. A similar pattern was observed for the confounded task performance items. The majority of confounded CWB items were perceived to represent both CWB and withdrawal, and a lesser proportion was judged to represent the remaining constructs. Finally, the confounded withdrawal items were most often perceived to represent both CWB and withdrawal (i.e., 63%), a non-trivial proportion of items were judged to represent task performance and OCB (i.e., 17%), and the remaining items were judged to represent different combinations of multiple constructs.
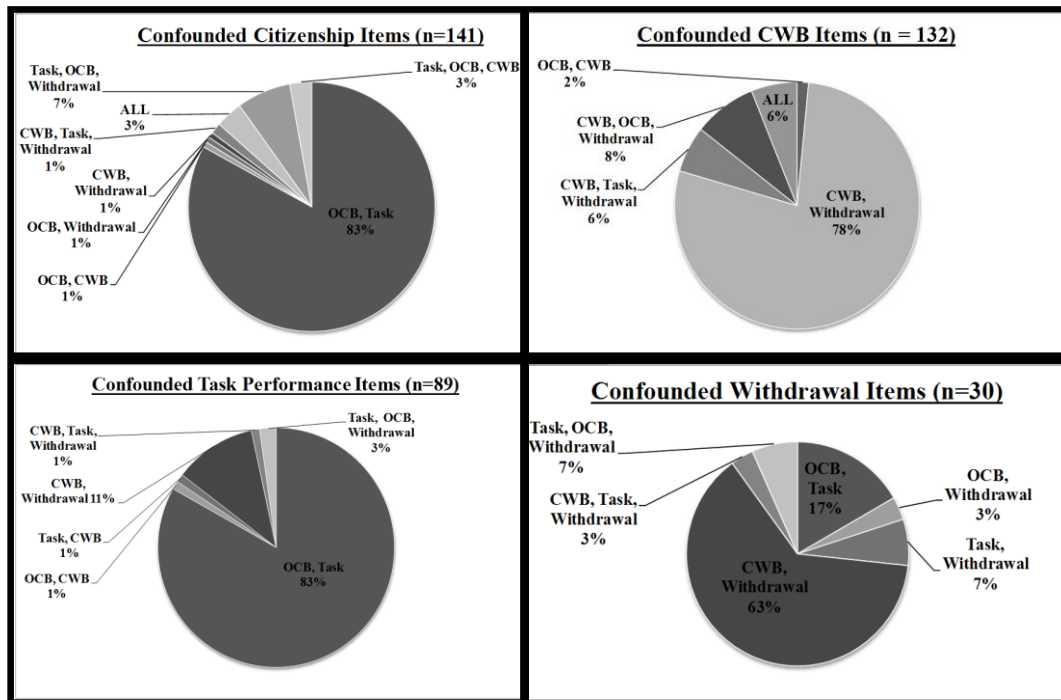
Figure 4. Summary of overlap patterns for the confounded items for each construct.

Although the purpose of this study was to neither exalt nor indict the specific items and scales that were or were not judged to represent the definition of the posited construct, it was nevertheless important and informative to provide examples of item content that was judged to represent the posited or non-posited construct. Thus, Figure 5 presents examples of item content that were judged to represent each construct—including posited and non-posited items that were judged to represent a particular construct. And likewise, Figure 6 also presents examples of items that were judged to represent two competing constructs (i.e., ties).
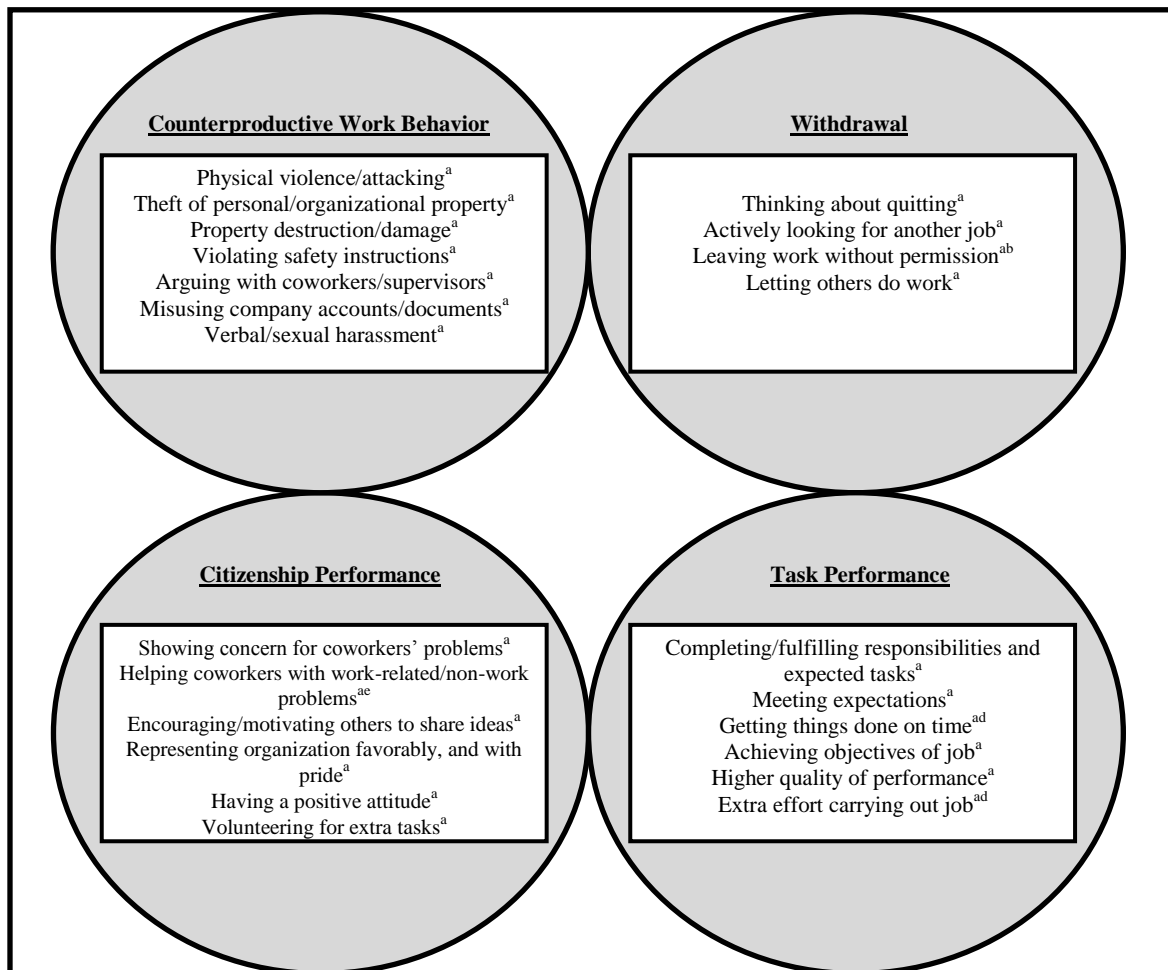
Figure 5. Examples of item content judged to represent a (posited or non-posited) work performance construct. [a] Items that were judged to represent the posited construct; [b] items that were posited to represent counterproductive work behavior (CWB); [c] items that were posited to represent withdrawal; [d] items that were posited to represent citizenship performance; [e] items that were posited to represent task performance.

Figure 6. Examples of item content judged to overlap with multiple work performance constructs. [a] Items that were posited to represent counterproductive work behavior (CWB); [b] items that were posited to represent withdrawal; [c] items that were posited to represent citizenship performance; [d] items that were posited to represent task performance.

6.3 Comparison of Results with Previous Findings

Next, to determine if the results from Study 1 replicated those from Carpenter et al. (2011), I examined whether Carpenter et al.'s items with a significant for the posited construct—indicating that items were judged to match the posited construct—also met the three *d* criteria for the posited construct in Study 1. I also examined whether Study 1

items designated in Carpenter et al. as having a significant for a non-posited construct—reflecting items judged to match a non-posited construct—also met the *d* criterion for a non-posited construct or were *tied* (on the basis of the *d* criterion) and, thus, showed the same pattern of overlap observed in Carpenter et al. Importantly, because Study 1 consists of substantial changes made to the type of ratings made as well as the construct definitions, the term "replication" is used loosely, and refers to the comparison of the general trends of perceptions of items across the work performance constructs. Indeed, as the definitions in Study 1 are more comprehensive and complete relative to those used in Carpenter et al., it was expected that there would be some differences in the results, as moving to more representative definitions should lead to more items being perceived to represent the posited construct.

To begin, there were 643 items in Carpenter et al. (2011) with a significant for the posited construct (*n* = 410) or for a non-posited construct (*n* = 233). Of these items with a significant , 407 items (63.30%) in Study 1 displayed the same results, either being perceived as representing a posited or a single non-posited construct. Specifically, of the 407 items from Carpenter et al. (2011) that were judged to represent the posited construct, 60.93% (*n* = 248) met the *d* criterion for the posited construct. Of the 233 items from Carpenter et al. (2011) with a significant for a non-posited construct, 68.24% (*n* = 159) met the *d* criterion in Study 1 and were judged to represent the same non-posited construct as indicated in Carpenter et al (2011). Altogether, this comparison demonstrates that for nearly half of the 851 items evaluated, there is a consistent pattern in the perceptions of the extent to which work performance items represent their intended

constructs. A summary of this comparison of construct-level results is presented in Table 8.

Table 8

Summary of Construct-level Findings from Carpenter et al. (2011) and Replicated in Study 1

Posited Construct	Number of Items Matching Perceived Construct ($d \geq 0.80$ and $C_{sv}\, p < .05$)				Total
	CWB	Citizenship	Task Performance	Withdrawal	**Total**
CWB	**133**	0	—	49	182
Citizenship	—	**66**	90	—	156
Task Performance	3	10	**43**	6	62
Withdrawal	1	—	0	**6**	7

Note. CWB = counterproductive work behavior

7. DISCUSSION – STUDY 1

Study 1 addressed three important limitations of Carpenter et al. (2011) and also demonstrated that many work performance items were consistently judged as representing either the posited or non-posited construct. Importantly, these findings were not only shown in a sample composed of current supervisors and incumbents but they were also demonstrated both for the construct definitions that were more narrow representatives of the construct in question (i.e., Carpenter et al., 2011) as well as integrated construct definitions that reflect different perspectives of the same core construct. Importantly, although each of the 851 items was posited to represent a single work performance construct, nearly half of the evaluated items were actually judged to represent multiple constructs.

The integrated definitions of the four constructs used in Study 1 resulted in a broader and more complete conceptualization of each construct, particularly evidenced by the results for citizenship performance and withdrawal. The items posited to reflect these constructs performed poorest in Carpenter et al.'s (2011) substantive validity assessment; this was likely due to a less-inclusive mapping and definition of each respective construct domain. The results of Study 1 showed considerable improvement for both of these constructs, as nearly half of both withdrawal and citizenship performance items were now judged to represent the posited construct definition, which suggests that the definitions used in Study 1 were more representative of the core underlying constructs.

Interestingly, the proportion of posited task performance items that was judged as representing the posited construct in Study 1 was smaller than that shown in Carpenter et al. (2011). Given that the citizenship performance definition in Study 1 was a more complete representation of the construct domain, this likely means that when task and citizenship performance are more comprehensively defined, their overlap is more clearly shown. For example, the definition of citizenship performance used in Carpenter et al. (2011) was more closely focused on the interpersonal aspects of citizenship (e.g., interactions and cooperation with others) and not the organizational component of citizenship performance. Since the organizational aspect of citizenship is most often regarded as conceptually overlapping with task performance (e.g., Stone-Romero et al., 2009), this suggests that the definition used in Carpenter et al.—which did *not* reflect organizationally-targeted citizenship—likely led task performance items to be more often perceived to represent the posited construct. However, the integrated citizenship definition that was used in Study 1, which included examples of both interpersonal and organizational parts of citizenship, likely highlighted the overlap between task performance and organization-targeted OCB, and thus increased the likelihood that posited task performance items would be perceived as representing task and citizenship performance.

Finally, the use of Likert ratings in Study 1 also served as an important extension of Carpenter et al. (2011), as the points of overlap were able to be ascertained for items that were judged to be confounded. For example, although about half of items posited to represent CWB were judged to be consistent with the integrated construct definition of

CWB, a large proportion of confounded CWB items showed overlap between only CWB and withdrawal. Similar patterns of overlap were shown for withdrawal items, and the findings also demonstrated that most of the task and citizenship items that were confounded were perceived to represent both constructs (i.e., tied).

8. METHOD – STUDY 2

Although Study 1 explicated the extent to which work performance items reflect behaviors that are inconsistent with the definition of the respective construct, it was also imperative to determine the extent to which the use of such "inconsistent" items influences construct-related validity. Thus, the purpose of Study 2 was to examine whether empirical bivariate relationships among work performance constructs and with nomological networks (e.g., job attitudes) change when items designated in Study 1 as inconsistent with the theoretical construct definition (i.e., non-posited matches, tied, or confounded) are removed from their respective scales. If empirical relationships remain relatively unchanged, this indicates that the content of work performance items may not be an artifact that influences empirical relationships. Furthermore, it signals that removing the problematic items is not likely to constitute a change to the construct represented by the measure. On the other hand, a change in the magnitude or direction of empirical relationships indicates that removing the problematic items may constitute an important change to the construct represented by the measure.

8.1 Examination and Comparison of Construct-Related Validity

The purpose of Study 2 was to examine the construct-related validity of performance ratings provided on a subset of the work performance items evaluated in Study 1. Specifically, using self-ratings of work performance behaviors, correlation coefficients from the full scales measuring work performance were obtained and these were then compared to the coefficients obtained from a revised set of items based on the results of Study 1.

Next, the nomological networks of each work performance construct were examined. The work performance constructs examined in this study—task performance, citizenship performance, CWB, and withdrawal—have each been linked to a number of dispositional and attitudinal antecedents such as Big Five personality traits (e.g., Berry et al., 2007; Chiaburu et al., 2011), job satisfaction (e.g., Dalal, 2005; Edwards, Bell, Arthur, & Decuir, 2008; Judge, Thoresen, Bono, & Patton, 2001), organizational commitment (e.g., Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), and organizational justice perceptions (e.g., Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Therefore, an important purpose of Study 2 was to examine the pattern and magnitude of these nomological relationships first using the full scales measuring work performance constructs and then compare these findings with those obtained using the refined scales in which problematic items (i.e., identified in Study 1) were removed.

Analyses were conducted among both the measures of the broad constructs (i.e., task performance, citizenship performance, CWB, and withdrawal) and the measures of the narrow dimensions of the constructs, where applicable (e.g., OCB-I, OCB-O, CWB-I, CWB-O, psychological withdrawal). Although the focus of Studies 1 and 2 has remained on the constructs at a broad level of abstraction, it was also important to account for the dimensions, as some of the empirical overlap issues have also been attributed to dimensions. For example, researchers have pointed to the conceptual similarities between (a) withdrawal and CWB-O (e.g., Fox & Spector, 1999; Spector et al., 2006), and (b) task performance and OCB-O (e.g., Stone-Romero et al., 2009), and suggested that these similarities are reasons for the covariation between the constructs. Therefore, it was

important to examine whether refining the performance measures resulted in changes in the empirical relationships for the broad and narrow representations of the constructs.

8.1.1 Participants

The sample consisted of 242 employees recruited from undergraduate psychology courses to complete an online survey. The sample was 58% female and 73.6% White, and the average age of respondents was 19.50 (SD = 3.20). Respondents reported working an average of 15.57 hours per week (SD = 8.99), having an average of 1.50 years tenure (SD = 1.79) on their current job, and an average of 2.07 years (SD =2.40) work experience.

8.1.2 Measures of Work Performance

The data analyzed in Study 2 were from an unpublished dataset (Carpenter & Berry, 2011). Employees provided self-ratings of their task performance, citizenship performance, CWB, and withdrawal using a subset of the work performance measures evaluated in Study 1. This subset of items was chosen because data were available on all of the items comprising the respective scales, thus allowing for scale revisions based on the findings of Study 1.

First, Williams and Anderson's (1991) seven-item scale (α = .80) was used to measure employees' task performance. Employees used a seven-point rating scale (1 = strongly disagree, 7 = strongly agree) to rate the extent to which they agreed with items such as "Adequately completes assigned duties."

Citizenship performance was measured using Lee and Allen's (2002) 16-item measure (α = .93). This measure accounted for Williams and Anderson's designation of OCB directed towards individuals (OCB-I) or towards the organization (OCB-O).

Employees used a seven-point rating scale (1 = strongly disagree, 7 = strongly agree) to rate their agreement with items such as "Helps others who have been absent (i.e., OCB-I, $\alpha = .90$)," and "Defends the organization when other employees criticize it (i.e., OCB-O, $\alpha = .93$)."

CWB was measured using Bennett and Robinson's (2000) 19-item measure ($\alpha = .92$). These items were intended to measure the distinction of CWB either targeted towards individuals (CWB-I) or towards the organization (CWB-O). Employees used a seven-point rating scale (1 = never, 7 = daily) to indicate the extent to which they engaged in behaviors such as "Cursed at someone at work (i.e., CWB-I, $\alpha = .90$)," and "Dragged out work in order to get overtime (i.e., CWB-O, $\alpha = .89$)."

Employees' withdrawal was measured with two scales. First, Lehman and Simpson's (1992) five-item measure ($\alpha = .83$) was used to measure psychological withdrawal (i.e., neglectful behaviors such as daydreaming and putting little effort into work tasks) and included items such as "Daydreaming." Spector et al.'s (2006) four-item measure was also used to measure withdrawal ($\alpha = .88$), and included items such as "Stayed home from work and said you were sick when you were not." Respondents indicated the extent to which they engaged in the withdrawal items using a seven-point rating scale (1 = never, 7 = very often).

8.1.3 Measures of Correlates

Big Five personality was measured using the Mini-IPIP scales (Donnellan, Oswald, Baird, & Lucas, 2006), which consisted of four items for each of the five personality traits: agreeableness ($\alpha = .66$), extraversion ($\alpha = .78$), conscientiousness ($\alpha =$

.72), neuroticism (α = .63), and openness (α = .63). Employees used a five-point rating scale (1 = not at all, 5 = completely) to rate the extent to which each item described them.

Job satisfaction was measured with a six-item measure (Agho, Price, & Mueller, 1992) on which employees used a five-point rating scale (1 = strongly disagree, 5 = strongly agree) to indicate their agreement with statements such as, "I find real enjoyment in my job (α = .89)."

Organizational commitment was measured with Allen and Meyer's (1990) 24-item measure. Using a seven-point rating scale (1 = strongly disagree, 7 = strongly agree), participants responded to items such as, "I would be very happy to spend the rest of my career with this organization (i.e., affective, α = .79);" "If I got another offer for a better job elsewhere, I would not feel it was right to leave my organization (i.e., normative, α = .78);" and "I feel that I have too few options to consider leaving this organization (i.e., continuance, α = .78)."

Organizational justice was measured with Niehoff and Moorman's (1993) nine-item measure. Respondents used a seven-point rating scale (1 = strongly disagree, 7= strongly agree), to rate their agreement with items such as "Overall, the rewards I receive here are quite fair (i.e., distributive justice, α = .90)," and "Job decisions are made by the manager in an unbiased manner (i.e., procedural justice, α = .93)."

8.1.4 Analysis

After correlations were obtained using the full scales of work performance constructs, items that did not meet the *d* criterion in Study 1—meaning items that did not have a *d* value above .80 for all relevant comparisons—were removed from their

respective scales before another set of correlations was obtained. The items as well as the

overlapping constructs for these items are presented in Table 9. Specifically, two items

were removed from the task performance measure as they were judged as tied with task

and citizenship performance. The two items removed from the OCB measure (and

posited to represent OCB-O) were tied between task and citizenship performance. A total

of five items judged as tied between CWB and withdrawal were removed from the

withdrawal measures. Seven items were removed from the CWB measure, one item that

was tied between OCB and CWB, and six which were tied between CWB and

withdrawal. The bivariate correlation between the measures of work performance and

their correlates were assessed with both the full and refined measures of work

performance.

Table 9

Items Removed from Measures of Work Performance

Item wording	Posited construct	Results
Neglects aspects of the job you are obligated to perform (R)	Task performance	Task/OCB
Fails to perform essential duties (R)	Task performance	Task/OCB
Keeps up with developments in the organization	Citizenship (OCB-O)	Task/OCB
Demonstrate concern about the image of the organization	Citizenship (OCB-O)	Task/OCB
Spent work time on personal matters	Psy withdrawal	CWB/withdrawal
Put less effort into job than should have	Psy withdrawal	CWB/withdrawal
Came to work late without permission	Withdrawal	CWB/withdrawal
Taken a longer break than you were allowed to take.	Withdrawal	CWB/withdrawal
Left work earlier than you were allowed to	Withdrawal	CWB/withdrawal
Publicly embarrassed someone at work	CWB (ID)	OCB/CWB
Spent too much time fantasizing or daydreaming instead of working	CWB (OD)	CWB/withdrawal
Taken an additional or longer break than is acceptable at your workplace	CWB (OD)	CWB/withdrawal
Come in late to work without permission	CWB (OD)	CWB/withdrawal
Neglected to follow your boss's instructions	CWB (OD)	CWB/withdrawal
Intentionally worked slower than you could have worked.	CWB (OD)	CWB/withdrawal
Put little effort into your work	CWB (OD)	CWB/withdrawal

9. RESULTS – STUDY 2

9.1 Comparison of Nomological Networks

The first purpose of Study 2 was to determine the extent to which the understanding of nomological networks changed when work performance constructs were measured using a full scale—likely containing items judged to represent either the posited or non-posited constructs—compared to when the scales were refined by removing the items with poor substantive validity for the posited construct, as designated in Study 1. The raw correlations for the nomological networks are presented in Table 10. The next step was to use Fisher's r-to-z transformation and then determine whether there was a significant difference between the correlations computed using the full versus refined measure of work performance. The z-scores of the comparisons for each nomological relationship are presented in Table 11. The results indicated that only the relationship between job satisfaction and CWB-O showed a significant difference between the correlation using the full measure of CWB-O (r = -.34) and the refined measure of CWB-O (r = -.09, z = 2.85, p < .05). This demonstrates that for this respective scale, the removal of CWB-O items judged to overlap with CWB and withdrawal resulted in a negligible relationship between CWB-O and job satisfaction. Although similar patterns of relationships were shown for the relationships CWB-O had with affective and normative commitment, as well as for withdrawal's relationships with job satisfaction and affective commitment, the differences were not significant.

Table 10

Comparison of Correlations between Work Performance Dimensions and Nomological Networks (Full versus Revised Scales)

Correlate	TP		OCB		OCB-O		CWB		CWB-I		CWB-O		WD		PsyWD	
	Full	Revised	Full	Revised	Full	Revised	Full	Revised	Full	Revised	Full	Revised	Full	Revised	Full	Revised
Extraversion	.19	.16	.18	.19	.17	.18	-.11	-.11	-.09	-.08	-.11	-.13	-.06	-.02	-.05	.00
Agreeableness	.21	.16	.25	.26	.18	.18	-.21	-.25	-.25	-.24	-.13	-.21	-.08	-.06	-.07	-.05
Conscientiousness	.30	.26	.16	.16	.15	.15	-.25	-.21	-.23	-.23	-.22	-.13	-.33	-.31	-.33	-.30
Neuroticism	-.13	-.08	-.07	-.07	-.01	.00	.05	.08	.07	.08	.02	.07	.13	.20	.16	.20
Openness	.19	.12	.15	.16	.11	.11	-.14	-.15	-.11	-.10	-.14	-.19	-.11	-.05	-.05	.01
NA	-.24	-.13	-.15	-.15	-.09	-.08	.25	.24	.22	.21	.23	.21	.35	.38	.35	.36
PA	.23	.20	.32	.32	.26	.26	-.12	-.10	-.09	-.09	-.12	-.09	-.20	-.20	-.22	-.19
Job satisfaction	.30	.32	.56	.54	.62	.62	-.33	-.22	-.25	-.26	-.34	-.09	-.58	-.64	-.63	-.66
Affective Com	.14	.13	.53	.51	.62	.63	-.21	-.15	-.16	-.15	-.22	-.08	-.37	-.46	-.43	-.48
Continuance Com	.05	.06	.03	.03	.06	.07	-.01	.02	-.00	-.00	-.02	.05	-.16	-.20	-.20	-.21
Normative Com	.14	.12	.43	.42	.46	.46	-.20	-.12	-.10	-.10	-.24	-.11	-.30	-.32	-.32	-.31
Org Justice	.29	.30	.46	.45	.45	.44	-.24	-.23	-.26	-.27	-.19	-.10	-.28	-.36	-.31	-.37
Distributive Justice	.26	.27	.39	.38	.39	.39	-.23	-.22	-.23	-.24	-.19	-.11	-.26	-.31	-.28	-.32
Procedural Justice	.29	.29	.47	.46	.44	.44	-.22	-.21	-.25	-.25	-.16	-.07	-.27	-.35	-.30	-.36
# of Items	7	5	16	14	8	6	19	12	7	6	12	6	9	4	5	3

Note. TP = task performance; OCB = citizenship performance; OCB-O = OCB towards the organization; CWB = counterproductive work behavior; CWB-I = CWB towards individuals; CWB-O = CWB towards the organization; WD = withdrawal; PsyWD = psychological withdrawal; NA = negative affectivity; PA = positive affectivity; Affective Com = affective commitment; Continuance Com = continuance commitment; Normative Com = normative commitment; Org Justice = organizational justice. Full = the complete construct measure was used; Revised = items with poor substantive validity were removed from the construct measure.

Table 11

Test of Differences (z-scores) Between Nomological Relationships Using Full versus Revised Scales

	Correlates												
	E	A	C	N	O	NA	JSat	ACom	CCom	NCom	OJ	DJ	PJ
Task performance	.36	.59	.39	.45	.78	1.28	-.18	.14	-.11	.20	-.10	-.12	-.05
Citizenship performance	-.06	-.08	.00	-.01	-.11	-.02	.34	.34	.02	.13	.10	.08	.08
OCB-O	-.14	.03	-.01	-.15	-.09	-.13	.07	-.09	-.09	-.07	.04	.00	.01
CWB	-.02	-.55	.37	-.37	-.08	.10	1.30	.77	-.30	.91	.16	.17	.13
CWB-I	.07	.19	.00	-.05	.10	.02	-.06	.03	.00	.02	-.09	-.12	-.05
CWB-O	-.21	-.85	1.04	-.48	-.47	.25	**2.85**[*]	1.55	-.68	1.50	1.04	.93	1.00
Withdrawal	.44	.18	.23	-.78	.69	-.49	-1.15	-1.19	-.40	-.24	-.89	-.60	-1.04
Psychological Withdrawal	-.55	-.23	-.36	-.40	-.68	-.14	-.64	-.67	-.10	.05	-.70	-.58	-.73

Note. E = extraversion; A = agreeableness; C = conscientiousness; N = neuroticism; O = openness to experience; NA = negative affectivity; JSat = job satisfaction; ACom = affective commitment; CCom = continuance commitment; NCom = normative commitment; OJ = organizational justice; DJ = distributive justice; PJ = procedural justice; OCB-O = OCB targeted towards the organization; CWB = counterproductive work behavior; CWB-I = CWB towards individuals; CWB-O = CWB towards the organization. *p < .05

9.2 Comparison of Relationships among Work Behavior Dimensions

The next part of Study 2 was to determine if the magnitude or patterns of relationships among the work behavior dimensions significantly changed when the full or refined measures of the work behaviors were used. The intercorrelations among the behaviors, using both the full and refined scales, are presented in Table 12. Using Fisher's r-to-z transformation, it was next determined whether the correlations using the full or refined scales were significantly different. The z-scores for these comparisons are presented in Table 13. Contrary to the results for the nomological networks, the results indicated that there were significant differences between the relationships among work performance dimensions when full and refined scales were used. First, there was a significant difference between the magnitude of relationship between task performance and CWB-O when the full measures of both dimensions were used ($r = -.37$) compared to when the refined measures were used ($r = -.17$, $z = 2.27$, $p < .05$). This indicates a significant decrease in the relationship between task performance and CWB-O when the overlapping items from measures of both constructs were removed.

Next, there was also a significant difference between the magnitude of the relationship between CWB and withdrawal when the full measures were used ($r = .62$) and when the refined measures were used ($r = .42$, $z = -3.06$, $p < .05$). Similar patterns of relationships were shown for the narrow dimensions of CWB and withdrawal. For example, there was a significant difference between the size of the relationship between CWB and psychological withdrawal when the full ($r = .55$) and refined scales were used ($r = .38$, $z = -2.42$, $p < .05$). There also was a significant difference between the

relationship between CWB-O and withdrawal when the full ($r = .68$) and refined scales

were used ($r = .33$, $z = -5.31$, $p < .05$).

Table 12

Intercorrelations among Work Behavior Dimensions

	TP		OCBO		OCB		PsyWD		WD		CWB		CWBI		CWBO
	revised	full	revised	full	revised	full	revised	full	revised	full	revised	full	revised	full	revised
TP full	.92	*.80*													
OCBO revised	.37	.35	*.90*												
OCBO full	.37	.35	.99	*.93*											
OCB revised	.48	.45	.88	.88	*.92*										
OCB full	.47	.44	.91	.91	.99	*.93*									
PsyWD revised	-.29	-.33	-.44	-.44	-.37	-.39	*.75*								
PsyWD full	-.34	-.39	-.41	-.42	-.36	-.38	.94	*.83*							
WD revised	-.33	-.38	-.44	-.44	-.38	-.39	.98	.94	*.76*						
WD full	-.38	-.44	-.36	-.36	-.34	-.35	.87	.94	.92	*.88*					
CWB revised	-.20	-.30	-.12	-.12	-.12	-.12	.38	.42	.42	.48	*.90*				
CWB full	-.25	-.35	-.20	-.20	-.18	-.19	.50	.55	.55	.62	.95	*.92*			
CWBI revised	-.17	-.24	-.12	-.12	-.12	-.12	.38	.41	.40	.43	.94	.87	*.89*		
CWBI full	-.17	-.25	-.12	-.12	-.12	-.12	.38	.40	.40	.43	.95	.89	1.0	*.90*	
CWBO revised	-.17	-.32	-.09	-.09	-.09	-.09	.26	.30	.33	.41	.81	.79	.55	.58	*.90*
CWBO full	-.26	-.37	-.24	-.24	-.20	-.21	.52	.58	.58	.68	.78	.92	.62	.64	.83
# of items	5	7	6	8	14	16	3	5	4	9	12	19	6	7	6

Note. Coefficient alphas are located on the diagonal, in italics, with the exception of refined task performance (α = .81) and refined CWB-O (α = .90); TP = task performance; OCB = citizenship performance; OCBO = OCB towards the organization; CWB = counterproductive work behavior; CWBI = CWB towards individuals; CWBO = CWB towards the organization; WD = withdrawal; PsyWD = psychological withdrawal; Full = the complete construct measure was used; Revised = items with poor substantive validity were removed from the construct measure. CWBO full was measured with 12 items.

Table 13

Test of Differences (z-scores) between Dimensional Interrelationships Using Full versus Revised Scales

	Task Performance	OCB	OCB-O	CWB	CWB-I	CWB-O
Task performance	—					
OCB	.46	—				
OCB-O	.21	—	—			
CWB	1.76	.73	.94	—		
CWB-I	.87	.03	.06	—	—	—
CWB-O	2.27*	1.33	1.62	—	—	—
Withdrawal	1.52	-.39	-.92	-3.06*	-.34	-5.31*
Psychological withdrawal	1.29	0.14	-.29	-2.42*	-.25	-4.39*

Note. OCB = citizenship performance; OCB-O = OCB towards the organization; CWB = counterproductive work behavior; CWB-I = CWB towards individuals; CWB-O = CWB towards the organization. *$p < .05$

10. DISCUSSION – STUDY 2

The purpose of Study 2 was to conduct an initial examination of the extent to which important work performance nomological relationships, including antecedents and work performance dimensions, were influenced by the inclusion of items—determined in Study 1 to represent non-theorized constructs—in the scales used to measure the work performance behaviors. The results regarding the relationships between work performance and important antecedents (e.g., job satisfaction, Big Five personality) showed little difference between the magnitude of the relationships when the full work performance scales were used and the relationships when items with low substantive validity were removed from the scale. Indeed, only the relationship between job satisfaction and CWB-O showed a significant difference. In contrast, the examination of relationships among work performance dimensions revealed some initial evidence that the removal of items that are perceived to represent non-theorized constructs from scales may influence the magnitude of relationships. The relationships CWB-O has with task performance and withdrawal significantly decreased when overlapping items were removed, while the relationship between CWB and withdrawal also showed a marked decrease.

Although the general trend of these initial findings may suggest that there may not be a substantial effect of overlapping item content on empirical relationships, a number of limitations hinder the ability to draw these strong conclusions and, instead, provide opportunities for future research. For example, the work performance dimensions were each measured with a single scale, which means that each construct may not have been

adequately mapped by the included items. Additionally, although the sample consisted of employees, they were also undergraduate students at a single university. Future research that administers multiple performance measures to a sample that is more diverse in age, location, and educational attainment may reveal different patterns of findings. Finally, the correlations examined in Study 2 were actually dependent, as they were based on the same sample. This means that the use of Fisher's *r-to-z* transformation to test whether there was a significant difference between the correlations was likely inappropriate. Future research that examines the significance between such dependent correlations should utilize appropriate tests (e.g., Dunn & Clark, 1969; Hotelling, 1940) that account for the fact that the correlations tested are themselves correlated.

11. GENERAL DISCUSSION AND CONCLUSIONS

The first purpose of this study was to examine the extent to which the issues of construct clarity and measurement have influenced the instruments used to measure work performance constructs, and the second purpose was to examine the effect of the instruments on the understanding of nomological relationships as well as the relationships among work behavior dimensions. Study 1 demonstrated that work performance instruments are indeed affected by construct clarity issues, as many work performance items were shown to have poor substantive validity, meaning they were judged to represent non-theorized constructs. Study 2 also provided initial evidence that including items with poor substantive validity in the instruments used to measure task performance, citizenship performance, CWB, and withdrawal may affect empirical relationships among work performance dimensions. Altogether, these studies indicate that many of the issues that have been noted regarding the work performance domain—diverging theories, inconsistent labeling, highly intercorrelated behaviors, as examples—are certainly not trivial and, indeed, may have consequences for the understanding of the criterion domain.

Study 1 demonstrated that less than half of the 851 items currently used to measure work performance constructs were judged to represent the posited construct, while the remaining majority were judged to represent either a non-posited construct or multiple non-posited constructs. The findings of Study 1 also serve as an important extension of Carpenter et al. (2011), as three critical modifications were made to the research design. First, the construct definitions used in Study 1's substantive validity assessment represent a more *universal* model of the criterion space, as these definitions

were created, evaluated, and subsequently refined using multiple conceptualizations of the particular work performance construct. Thus, the findings of Study 1 are not restricted to a single conceptualization of the construct of interest. Second, respondents rated the degree to which items represented a given construct using Likert rating scales, which enabled a more clear understanding of how well an item represented a particular construct, as well as the specific construct(s) with which an item overlapped. Indeed, these precise ratings indicated that many task performance and citizenship performance items are judged as overlapping with the two constructs, while similar findings were shown for CWB and withdrawal behavior. Third, the substantive validity assessment in Study 1 was completed by a sample of incumbents and supervisors, which was a key extension of Carpenter et al.'s use of undergraduate students. The results demonstrate that both undergraduate students, with presumed limited work experience, and currently-working employees and supervisors make similar judgments regarding the extent to which work performance items represent their intended constructs.

In sum, Study 1 stands as an important replication and extension of Carpenter et al.'s (2011) work, which initially demonstrated that many work performance measures have poor substantive validity for the intended construct. The substantial changes made to the construct definitions in Study 1 also provide an explanation for why certain items may not have been rated similarly in both studies. For example, the results showed that, in some instances, items may have been initially misclassified in Carpenter et al. because of the narrow construct definitions that were used, as some of these items were actually judged to represent the posited construct when rated using the broad, universal construct

definitions in Study 1. Still, Study 1 demonstrated the pervasiveness of the problems with item content representation, as perceptions regarding the content of the majority of items in Study 1 remained the same as those shown in Carpenter et al. Ultimately, these consistent findings indicate that the content of many items currently- and commonly-used to measure work performance constructs is inconsistent with the definitions—broad and narrow—of such constructs.

Although it was certainly important to document the existence of work performance items with poor substantive validity, the important next step was to examine how the use of these "bad" items affects empirical relationships regarding the nomological networks of work performance constructs as well as the intercorrelations among work performance dimensions. Thus, Study 2 provided an initial examination of the extent to which these relationships are different when the full work performance scales are used compared to when the "bad" items are removed from these scales. The results provided preliminary evidence that although the nomological networks may not appear to be affected by measuring work performance constructs with overlapping items, several relationships among work performance dimensions do appear to be affected by item content.

First, Study 2 demonstrated that nomological relationships—with the exception of the relationship between job satisfaction and CWB-O—stay largely the same when problematic item content is removed. Additionally, a *post hoc* sensitivity analysis revealed that the sample size ($n = 242$) sufficient enough to detect a minimum z-score of 3.61. This seems to suggest that the removal of items may not change the nature of the

particular construct measured to the extent that the magnitude of its relationship with a correlate of interest changes. For example, if nomological relationships had shown a consistent pattern of marked decrease upon the removal of the problematic items, one plausible explanation could be that the behaviors referenced in the removed items contributed necessary variance to the relationship. However, it appears this may indeed be the case for the relationship between job satisfaction and CWB-O. After removing CWB-O items that were judged to also overlap with withdrawal behavior (see Table 9), the relationship with job satisfaction reduced from -.34 to -.09, indicating that almost a negligible relationship exists when overlapping content in CWB-O measures is removed. It is important to emphasize that the removal of overlapping content from withdrawal items did *not* result in a commensurate reduction in its correlation with job satisfaction (see Table 11). This suggests that it may be incorrect to regard job satisfaction as a part of CWB-O's nomological network. For example, job satisfaction was more strongly related to withdrawal behavior than CWB-O and, furthermore, removing traces of withdrawal behaviors from CWB-O items also eliminated the moderate relationship often shown between job satisfaction and CWB-O (e.g., Berry et al., 2007). However, these conclusions are tempered given that the findings of Study 2 are based on a single scale for each construct and, thus, more research using additional scales is needed to comprehensively determine the extent to which nomological networks change when items with poor substantive validity are removed from scales.

Study 2 also demonstrated that the use of overlapping work performance measures may influence the size of relationships among work performance dimensions.

First, task performance and CWB-O become weakly related when the overlapping items used to measure the constructs are removed, with the relationship decreasing from -.37 to -.17. Next, although it is not yet clear how to regard the separateness of CWB and withdrawal (Carpenter & Berry, 2011), Study 2 provides initial evidence that one reason for the large degree of empirical overlap shown between the two constructs may be the use of overlapping items to measure the constructs. There was a significant decrease in the CWB-withdrawal relationship (from .62 to .42) when overlapping items were removed, which represents more than a 50% decrease in their proportion of shared variance (a parallel finding was also shown between CWB and psychological withdrawal). Similarly, the relationship between withdrawal and CWB-O also diminished considerably (i.e., from .68 to .33), further suggesting that the constructs may not be as redundant as has been suspected and that a large component of their observed covariation may be due to the use of overlapping items to measure both constructs. Again, the conclusions that can be drawn from these findings are certainly limited because a single scale was used to measure each dimension. Nevertheless, Study 2 provides preliminary evidence that the understanding of some work behavior relationships is affected by item content.

11.1 Contributions

This study provides three important contributions to the work performance literature and domain. First, and perhaps most importantly, this study provides an integrated four-dimensional conceptualization of the criterion domain, complete with construct definitions that were evaluated both by work performance scholars specifically,

but also by general OB/HRM scholars. Indeed, clear and concise conceptualizations and definitions are necessary to address many of the work performance issues that have been the impetus for and focus of the present study (MacKenzie, 2003). A long-standing criticism of the work performance domain is that researchers are speaking a "different language" about conceptually similar constructs (Kelley, 1927), an issue that promotes the proliferation of work performance models, constructs, and instruments, thus leading to a lack of clarity regarding the similarities and differences across similarly-conceived constructs. Specifically, this *jangle fallacy* represents the use of different labels to convey that concepts/constructs are distinct, when in reality the concepts are not meaningfully different (Kelley, 1927). This study's integration of the different existing perspectives of the four constructs appears to support this assertion, as conceptually-similar yet differently-labeled constructs (e.g., contextual performance, citizenship performance, prosocial behavior) that were perhaps regarded as distinct were merged into a single, universal definition of the underlying core construct. Additionally, the scholars who evaluated the definitions also indicated the presence of overlap across the construct definitions; therefore, the changes to the definitions that were made in response to the scholars' feedback resulted in each construct definition containing minimal overlap with the other definitions. Thus, an important contribution of this study is a concise conceptualization of the work performance domain, which provides much-needed conceptual clarity to a domain that has been hindered in its ability to develop new and refine existing theory due to the existence of numerous conceptually-similar constructs.

This study also contributes a greater understanding of the specific item content that is judged to be most consistent with a given construct, as well as the content that overlaps with different constructs (see Figures 5 and 6). For example, CWB should be measured with items reflecting behaviors about *active* efforts to harm the organization or others—for example, violence, theft, arguing, and harassment. Withdrawal, on the other hand, should be measured with items reflecting negative behavior that is more *passive*, such as turnover behavior or intentions, shirking work responsibilities, and spending time away from the job or work space. Task performance should be measured with items referencing the employee's completion of tasks, quality and timeliness of work, and effort displayed on the job, while citizenship performance measures should refer to efforts to get along with and care about fellow coworkers, as well as how employees represent the organization. Thus, for researchers who use the integrated definitions, this study provides further understanding of the type of items that should be used to measure the constructs. This study also makes clear the type of content that should *not* be used, as behaviors representing multiple constructs were also highlighted.

Finally, this study showed that the issues regarding the substantive validity of work performance items are not without consequence. Although additional research that further and more conclusively explicates the effects of items with poor substantive validity on empirical relationships is called for, it is nevertheless likely that there is an effect of using overlapping items to measure work performance constructs. Spector et al. (2010) initially showed that the use of items referencing both CWB and (negatively-worded) OCB artificially inflated the empirical relationships between CWB and OCB.

The current study mirrors and extends these findings by showing that (a) the existence of overlapping work performance items is not confined to only OCB and CWB but rather, to multiple constructs in the work performance domain; and (b) that relationships between different work performance dimensions other than CWB and OCB are likely affected by the inclusion of overlapping items. Additionally, Spector et al. (2010) focused on select measures of CWB and OCB and, although different scales were used in Study 2, the same effects of overlapping items were shown in the present study. Thus, it appears that further examination of work performance scales may yield similar results demonstrating that the use of overlapping items inflates at least some of the relationships among work performance dimensions.

11.2 Limitations and Future Research Directions

This study is not without limitations that provide avenues for future research. One limitation is that the findings are based on two cross-sectional samples of employees recruited from a university setting and an online survey database. Norms for what behaviors are considered to represent a particular construct may differ based on the industry or organizational context, but it has yet to be shown if perceptions of item content differ across specific fields or organizations. For example, helping behaviors directed towards organizational members or customers that are typically considered to represent citizenship performance may very well be perceived to represent task performance by employees or managers in customer service positions or service industries that focus on helping others. In addition, an important next step is to determine the extent to which the researchers who develop the work performance constructs and

conceptualizations as well as OB/HRM scholars have perceptions of work performance items similar to employees and supervisors. It is reasonable to expect that researchers are more attuned to the nuanced differences between the definitions of work performance constructs than managers and employees and that perceptions of item content may also differ accordingly.

Additionally, the sample in Study 1 was international in nature, such that the majority of respondents were from India, making it important to comment on the possible limitations of the sample. Such diversity in the respondents' country of origin, age, and industry, for example, certainly serves as a strength of this study, as the findings suggest that perceptions of work performance item content are not necessarily bounded by country of origin. However, it remains unclear whether there are cultural differences in the perceptions and interpretations of the construct definitions as well as item content. For example, respondents from either individualistic or collectivistic cultures may have different corresponding perceptions and expectations of citizenship performance behaviors. Indeed, citizenship behaviors may not be regarded as "over and above" the task requirements in collectivistic cultures (Moorman & Blakely, 1995), which suggests the need for future research to further delineate the extent to which cultural differences influence the substantive validity of items.

A second limitation of this study is that the substantive validity of items posited to represent proactive, change-oriented, and adaptive work performance constructs was not examined, although these constructs have more recently become more integrated into the general criterion domain space. This is certainly an important area for future research, as

many of the noted criterion issues have made it difficult to discern how these constructs should be regarded relative to the four constructs examined in this study. For example, adaptive behavior has been conceptualized as a component of employees' contextual performance behaviors (e.g., Motowidlo & Schmit, 1999), while other researchers conceptualize adaptive performance as altogether separate from task performance (Campbell, 1999; Griffin, Neal, & Parker, 2007; Hesketh & Neal, 1999; Pulakos et al., 2000). Similarly, change-oriented discretionary work behaviors are considered aspects of employees' enactment of OCB (e.g., Choi, 2007; LePine & Van Dyne, 2001), but it is also reasonable to consider these behaviors as an entirely distinct dimension of performance. Future research consisting of substantive validity assessments incorporating definitions and items representing adaptive, proactive, and/or change-oriented behaviors will serve as a needed first step in determining the extent to which the constructs overlap, as well as in adding further clarity to the broader work performance domain.

A third limitation is that Study 2 was based on single-source self ratings of the work performance dimensions. Self-ratings of work performance are usually discouraged due to concerns of raters over-reporting (or underreporting, in the case of CWB and withdrawal) the extent to which they engage in behaviors, perhaps due to social desirability bias. Although recent meta-analyses have shown that self-ratings are not as bad as presumed for the rating of CWB (Berry, Carpenter, & Barratt, 2012) and OCB (Carpenter, Houston, & Berry, 2012), future research that utilizes multisource ratings of work behaviors may illuminate important boundary conditions of the effects of poor substantive validity items on empirical relationships.

Finally, as mentioned earlier, the results of Study 2 are based on a limited set of scales for each construct and, therefore, the understanding of the effects of overlapping items on the nomological networks and interrelationships of work performance dimensions remains incomplete. Study 2 provided preliminary evidence that for the relationships among CWB, task performance, and withdrawal, removing items judged as overlapping with non-posited constructs led to significantly weaker relationships than when full scales were used. However, the scales that were administered in Study 2 differed from those examined in Spector et al. (2010) and did not replicate the effects Spector et al. found for OCB and CWB. This indicates the need for further research to evaluate the extent to which the effects of removing problematic items on empirical relationships are scale-specific. Similarly, although the results did not show a substantive effect of removing problematic items on nomological network relationships, the limitations noted about the small number of scales evaluated suggest the need for additional research that uses a larger variety of construct scales in order to fully understand the strength of these effects.

11.3 Implications

11.3.1 Implications for Theory

The current study has several implications for work performance research and theory. First, the items evaluated in this study are currently and, in many cases, commonly used to measure the four work performance constructs. However, the findings show that many of these items are judged to be inconsistent with the posited theorized construct, which has alarming implications for the very theories on which these items and

constructs are based. For instance, the results indicate that it is uncertain whether the basic theories underlying these items and constructs have been adequately examined and tested. As it stands, each work performance construct is measured with scales and items that do not fully reflect the construct's underlying theory and that are likely to represent constructs other than that theorized. This indicates that many central questions regarding work performance theories, including those regarding the nomological networks of and interrelationships among constructs have yet to be truly examined and answered. The existence of problematic items suggests that it is necessary to first refine the measures of constructs such that constructs are at least measured with instruments that reflect the theoretical definition of the intended construct. As a body of empirical evidence accumulates from the use of these "good" measures of constructs, researchers can then begin to make strides towards theory refinement and development. However, on the basis of this study, it does not appear prudent to assume that current criterion theories have been adequately tested, as the content of over half of the existing 851 items in the extant literature were judged to not represent their underlying theory.

A related implication pertains to the findings regarding the nomological networks and interrelationships among work performance dimensions. A great deal of the current understanding of the work performance domain has been based on the conceptual and empirical relationships among work performance dimensions and their relationships with theoretically-relevant correlates. However, this study's findings provide initial evidence that construct-related validity may be compromised for many construct measures, which casts doubt on some of the extant knowledge regarding the criterion domain that has

accrued to this point. In order for criterion theory and prediction to advance or at least be more fully understood, it is imperative that more attention be paid to whether the instruments used to measure constructs really represent the theorized construct.

11.3.2 Implications for Practice

Although the purpose of this study was to examine the extent to which items posited to reflect constructs in the work performance domain were actually judged as doing so, it is likely that problematic items exist in domains other than work performance. Therefore, for researchers and practitioners attempting to measure any construct of interest, it is important and necessary to determine the extent to which the chosen items represent the construct intended to be measured. As more of these efforts become documented, there will be a greater understanding of the extent to which items with poor substantive validity influence empirical findings and conclusions. An added consequence that may follow is that researchers may become more confident in the empirical findings and conclusions resulting from the use of items determined to actually reflect the assumed construct. Although a substantive validity assessment may appear to be a tedious extra step in the research process, it remains important to first ensure that instruments represent the construct that is intended to be measured before evaluating the results of a factor analysis to determine whether items are related as expected. Factor analysis is unable to evaluate whether items are actually judged to represent the intended construct, so it remains that a substantive validity assessment is necessary for increased confidence in factor analytic evidence.

Finally, given that work performance instruments are also used to evaluate employees as part of performance appraisal efforts, it is necessary to ensure that the scales and items that are used represent their intended constructs. For one, it is not yet clear whether the use of items with poor substantive validity has implications for the evaluations and conclusions made about employees. For instance, removing problematic items could change the rank order of employees evaluated with a given performance appraisal instrument. An additional incentive for practitioners to evaluate employees with items that are judged to represent their intended constructs pertains to possible legal consequences. The use of performance appraisal instruments that represent unintended constructs and behaviors could have negative legal implications for employers, particularly if the unintended constructs are not relevant to the job in question. For example, although a performance instrument could be intended to measure job-related constructs on the basis of a job analysis, if the measures are shown to measure a construct that is not job-relevant, this could leave the organization vulnerable to litigation (Malos, 1998). Thus, practitioners should ensure that items represent not only the intended constructs but also the job-related constructs in order to ensure that employees are evaluated more precisely and to protect themselves and the organization from potential litigation.

11.3.3 Conclusion

This study examined the extent to which items currently used to measure work performance represented their theorized constructs and the subsequent consequences on the understanding of nomological networks and relationships among work performance

dimensions. This study showed that many extant instruments include items that were

judged to represent constructs other than that intended, which also replicated previous

research. The current study also provided preliminary evidence suggesting that the

inclusion of the problematic items may inflate some empirical relationships. Shadish,

Cook, and Campbell (2002) stated that "the naming of things is a key problem in all

science, for names reflect category memberships that themselves have implications about

relationships to other concepts, theories, and uses" (p. 66). This indicates the imperative

that more attention be paid to the construct labels placed on the behaviors described in

work performance items, as there may be adverse consequences for work performance

theory and measurement. Ultimately, the results of this study demonstrate that work

performance behaviors/items have often been assigned incorrect construct labels which,

subsequently, may cast some initial doubt on the theoretical and empirical understanding

of the criterion domain.

REFERENCES

Agho, A. O., Price, J. L., & Mueller, C. W. (1992). Discriminant validity of measures of
    job satisfaction, positive affectivity, and negative affectivity. *Journal of
    Occupational and Organizational Psychology, 65*, 185-196.

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective,
    continuance, and normative commitment to the organization. *Journal of
    Occupational Psychology, 63,* 1-18.

Anderson, J. C., & Gerbing, D. W. (1991). Predicting the performance of measures in a
    confirmatory factor analysis with a pretest assessment of their substantive
    validities. *Journal of Applied Psychology, 76,* 732-740.

Austin, J. T., & Crespin, T. R. (2006). Problems of criteria in industrial and
    organizational psychology: Progress, pitfalls, and prospects. In W. Bennett Jr., C.
    E. Lance & D. J. Woehr (Eds.), *Performance measurement: Current perspectives
    and future challenges.* (pp. 9-48). Mahwah, NJ: Lawrence Erlbaum Associates
    Publishers.

Austin, J. T. & Villanova, P. (1992). The criterion problem 1917-1992. *Journal of
    Applied Psychology,* 77, 836-874.

Bateman, T. S., & Organ, D. W. (1983). Job satisfaction and the good soldier: The
    relationship between affect and employee "citizenship." *Academy of Management
    Journal, 26*, 587-595.

Bauer, T. N., Truxillo, D. M., Sanchez, R. J., Craig, J. M., Ferrara, P., & Campion, M. A. (2006). Applicant reactions to selection: Development of the selection procedural justice scale (SPJS). *Personnel Psychology, 54,* 387-419.

Bennett, R. J., & Robinson, S. L. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology, 85*, 349-360.

Bernardin, H. J., & Beatty, R. W (1984). *Performance appraisal: Assessing human behavior at work*. Boston: Kent.

Berry, C. M., Carpenter, N. C., & Barratt, C. L. (2012). Do other-reports of counterproductive work behavior provide an incremental contribution over self-reports? A meta-analytic comparison. *Journal of Applied Psychology, 97*, 613-636.

Berry, C. M., Ones, D. S., & Sackett, P. R. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis. *Journal of Applied Psychology, 92*, 410-424.

Bettencourt, L. A. (2004). Change-oriented organizational citizenship behaviors: The direct and moderating influence of goal orientation. *Journal of Retailing, 80,* 165-180.

Binning, J. F., & Barrett, G. V. (1989). Validity of personnel decisions: A conceptual analysis of the inferential and evidential bases. *Journal of Applied Psychology, 74,* 478-494.

Blalock, H. M. (1968). *The measurement problem: A gap between the languages of theory and research*. New York: McGraw-Hill.

Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin, 110*, 305-314.

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. 71-98). San Francisco: Jossey-Bass.

Bozeman, D. P., & Perrewe, P. L. (2001). The effect of item content overlap on Organizational Commitment Questionnaire-turnover cognitions relationships. *Journal of Applied Psychology, 86,* 161-173.

Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *Journal of Applied Psychology, 35,* 307-311.

Brief, A. P., & Motowidlo, S. J. (1986). Prosocial organizational behaviors. *Academy of Management Review, 11*, 710-725.

Campbell, J. P. (1990). *Modeling the performance prediction problem in industrial and organizational psychology*. Palo Alto, CA: Consulting Psychologists Press.

Campbell, J. P. (1999). The definition and measurement of performance in the new age. In D. R. Ilgen & E. D. Pulakos (Eds.), *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 399-429). San Francisco: Jossey-Bass.

Carpenter, N. C., & Berry, C. M. (2011). *Employee work behavior* [Datafile and code book]. Unpublished dataset.

Carpenter, N. C., & Berry, C. M. (2011, August). *The redundancy and distinctiveness between CWB and withdrawal: A meta-analysis.* Paper presented at the 71st annual meeting of the Academy of Management, San Antonio, TX.

Carpenter, N. C., Houston, L., & Berry, C. M. (2012, April). *A meta-analytic comparison of self- and other-reported organizational citizenship behavior*. Poster presented at the 27th Annual Meeting of the Society for Industrial and Organizational Psychology, San Diego, CA.

Carpenter, N. C., Newman, D. A., & Arthur, W. Jr. (2011, April). *What do work performance items measure? A substantive validity examination.* Poster presented at the 26th Annual Meeting of the Society for Industrial and Organizational Psychology, Chicago, IL.

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods, 4,* 62-83.

Chiaburu, D. S., Oh, I.-S., Berry, C. M., Li, N., & Gardner, R. G. (2011). The five-factor model of personality traits and organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology, 96*, 1140-1166.

Choi, J. N. (2007). Change-oriented organizational citizenship behavior: Effects of work environment characteristics and intervening psychological processes. *Journal of Organizational Behavior, 28*, 467-484.

Cleveland, J. N., & Colella, A. (2010). Criterion validity and criterion deficiency: What we measure well and what we ignore. In J. L. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (pp. 551-567). New York, NY: Routledge.

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology, 86*, 425-445.

Cronbach,L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52,* 281-302.

Dalal, R. S. (2005). A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *Journal of Applied Psychology, 90*, 1241-1255.

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The Mini-IPIP scales: Tiny-yet-effective measures of the Big Five Factors of personality. *Psychological Assessment, 18,* 192-203.

Dunn, O. J., & Clark, V A. (1969). Correlation coefficients measured on the same individuals. *Journal of the American Statistical Association, 64*, 366-377.

Edwards, B. D., Bell, S. T., Arthur, J., & Decuir, A. D. (2008). Relationships between facets of job satisfaction and task and contextual Performance. *Applied Psychology: An International Review*, *57*, 441-465.

Ferris, D. L., Brown, D. J., Berry, J. W., & Lian, H. (2008). The development and validation of the Workplace Ostracism Scale. *Journal of Applied Psychology, 93,* 1348-1366.

Fitzpatrick, A. R. (1983). The meaning of content validity. *Applied Psychological Measurement, 7,* 3-13.

Fox, S., & Spector, P. E. (1999). A model of work frustration-aggression. *Journal of*

Organizational Behavior, 20, 915-931.

Frese, M., Fay, D., Hilburger, T., Leng, K., & Tag, A. (1997). The concept of personal

initiative: Operationalization, reliability and validity in two German samples.

Journal of Occupational and Organizational Psychology, 70, 139-161.

George, J. M., & Brief, A. P. (1992). Feeling good-doing good: A conceptual analysis of

the mood at work-organizational spontaneity relationship. *Psychological Bulletin,*

112, 310-329.

Graham, J. W. (1989). *Organizational citizenship behavior: Construct redefinition,*

operationalization, and validation. Unpublished working paper, Loyola

University of Chicago, Chicago, IL.

Graham, J. W. (1991). An essay on organizational citizenship behavior. *Employee*

Responsibilities and Rights Journal, 4, 249–270.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance:

Positive behavior in uncertain and interdependent contexts. *Academy of*

Management Journal, 50, 327-347.

Guion, R. M. (1978). Scoring of content domain samples: The problem of fairness.

Journal of Applied Psychology, 63, 499-506.

Hanisch, K. A., & Hulin, C. L. (1991). General attitudes and organizational withdrawal:

An evaluation of a causal model. *Journal of Vocational Behavior, 39*, 110-128.

Harrison, D. A., Newman, D. A., & Roth, P. L. (2006). How important are job attitudes?

Meta-analytic comparisons of integrative behavioral outcomes and time

sequences. *Academy of Management Journal, 49*, 305-325.

Hemphill, J. K., & Westie, C. M. (1950). The measurement of group dimensions. *The Journal of Psychology, 29*, 325-342.

Hershcovis, M. S. (2011). Incivility, social undermining, bullying…oh my!": A call to reconcile constructs within workplace aggression research. *Journal of Organizational Behavior, 32*, 499-519.

Hesketh, B., & Neal, A. (1999). Technology and performance. In D. R. Ilgen & E. D. Pulakos (Eds.*), The changing nature of performance: Implications for staffing, motivation, and development* (pp. 21-55). San Francisco: Jossey-Bass.

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1,* 104-121.

Hinkin, T. R., & Tracey, J. B. (1999). An analysis of variance approach to content validation. *Organizational Research Methods, 2*, 175-186.

Hoffman, B. J., Blair, C. A., Meriac, J. P., & Woehr, D. J. (2007). Expanding the criterion domain? A quantitative review of the OCB literature. *Journal of Applied Psychology, 92,* 555-566.

Holden, R. R., & Jackson, D. N. (1979). Item subtlety and face validity in personality assessment. *Journal of Consulting and Clinical Psychology, 47*, 459-468.

Hotelling, H. (1940). The selection of variates for use in prediction, with some comments on the general problem of nuisance parameters. *Annals of Mathematical Statistics, 11,* 271-283.

Hunt, S. T. (1996). Generic work behavior: An investigation into the dimensions of entry-level, hourly job performance. *Personnel Psychology, 49*, 51-83.

Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: The big five revisited. *Journal of Applied Psychology, 85,* 869-879.

Jacobs, R., Kafry, D., & Zedeck, S. (1980), Expectations of behaviorally anchored rating scales, *Personnel Psychology, 33*, 595-640.

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127,* 376-407.

Kamdar, D., McAllister, D. J., & Turban, D. B. (2006). "All in a day's work": How follower individual differences and justice perceptions predict OCB role definitions and behavior. *Journal of Applied Psychology, 91,* 841-855.

Kelley, E. L. (1927). *Interpretation of educational measurements*. Yonkers, NY: World.

Kwantes, C. T., Karam, C. M., Kuo, B. C. H., & Towson, S. (2008). Culture's influence on the perception of OCB as in-role or extra-role. *International Journal of Intercultural Relations, 32,* 229-243.

Lance, C. E., & Woehr, D. J. (1986). Statistical control of halo: Clarification from two cognitive models of the performance appraisal process. *Journal of Applied Psychology, 71*, 679-685.

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*, 563-575.

Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes, 112,* 112-125.

Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology, 87*, 131-142

Lehman, W. E. K., & Simpson, D. D. (1992). Employee substance use and on-the-job behaviors. *Journal of Applied Psychology, 77,* 309-321.

LePine, J. A., Erez, A., & Johnson, D. E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology, 87*, 52-65.

LePine, J. A., & Van Dyne, L. (2001). Voice and cooperative behavior as contrasting forms of contextual performance: Evidence of differential relationships with Big Five personality characteristics and cognitive ability. *Journal of Applied Psychology, 86,* 326-336.

MacKenzie, S. B. (2003). The dangers of poor construct conceptualization. *Journal of the Academy of Marketing Science, 31,* 323-326.

MacKenzie, S. B., Podsakoff, P. M., & Fetter, R. (1993). The impact of organizational citizenship behavior on evaluations of sales performance. *Journal of Marketing, 57*, 70–80.

Malos, S. B. (1998). Current legal issues in performance appraisal. In J. W. Smither (Ed.), *Performance appraisal: State of the art in practice* (pp. 49-94). San Francisco: Jossey-Bass.

Messick, S. (1975). The standard problem: Meaning and values in measurement and evaluation. *American Psychologist, 30,* 955-966.

Messick, S. (1980). Test validity and the ethics of assessment. *American Psychologist, 35,* 1012-1027.

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior, 61,* 20-52.

Moorman, R. H., & Blakely, G. L. (1995). Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. *Journal of Organizational Behavior, 16*, 127-142.

Morrison, E. W. (1994). Role definitions and organizational citizenship behavior: The importance of the employee's perspective. *Academy of Management Journal, 37*, 1543-1567.

Morrison, E. W., & Phelps, C. C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of Management Journal, 42,* 403-419.

Morrow, P. C., Eastman, K. & McElroy, J. C. (1991). Concept redundancy and rater naivety in organizational research. *Journal of Applied Social Psychology, 21*, 219-232.

Motowidlo, S. J. (2000). Some basic issues related to contextual performance and organizational citizenship behavior in human resource management. *Human Resource Management Review Special Issue: Contextual Performance and Organizational Citizenship, 10*, 115-126.

Motowidlo, S. J., & Schmit, M. J. (1999). Performance assessment in unique jobs. In D. R. Ilgen & E. D. Pulakos (Eds.), *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 56-87). San Francisco: Jossey-Bass.

Mowday, R. T., Koberg, C. S., McArthur, A. W. (1984). The psychology of the withdrawal process: A cross-validational test of Mobley's intermediate linkages model of turnover in two samples. *Academy of Management Journal,* 27, 79-94.

Mowday, R. T., Steers, R.M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior, 14,* 224-247.

Murphy, K. R. (1989). Dimensions of job performance. In R. Dillon & J. Pellingrino (Eds.), *Testing: Applied and theoretical perspectives* (pp. 218-247). New York: Praeger.

Murphy, K. R. (1990). Job performance and productivity. In K. M. Murphy & F. E. Saal (Eds.), *Psychology in organizations: Integrating science and practice* (pp. 157-176). Hillsdale, NJ: Erlbaum.

Newman, D. A., Joseph, D. L., & Hulin, C. L. (2010). Job attitudes and employee engagement: Considering the attitude "A-factor." In S.Albrecht (Ed.), *The handbook of employee engagement: Perspectives, issues, research and practice* (pp. 43-61). Cheltenham, UK: Edward Elgar.

Nicholls, J. G., Licht, B. G., & Pearl, R. A. (1982). Some dangers of using personality questionnaires to study personality. *Psychological Bulletin, 92*, 572–580.

Niehoff, B. P., & Moorman, R. (1993) Justice as a mediator of the relationship between

methods of monitoring and organizational citizenship behavior. *Academy of Management Journal*, 36, 527-556.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome.* Lexington, MA: Lexington.

Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance, 10,* 85-97.

Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Organizational citizenship behavior: Its nature, antecedents, and consequences.* Thousand Oaks, CA: Sage.

Parker, S. K., & Collins, C. G. (2010). Taking stock: Integrating and differentiating multiple proactive behaviors. *Journal of Management, 36*, 633-662.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879-903.

Podsakoff, P.M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly, 1*, 107-142.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behavior: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management, 26,* 513-563.

Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology, 85,* 612-624.

Robinson, S. L., & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Journal, 38,* 555-572.

Rotundo, M., & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology, 87*, 66-80.

Rotundo, M., & Spector, P. E. (2010). Counterproductive work behavior and withdrawal. In J. L. Farr, & N. T. Tippins (Eds.), *Handbook of employee selection* (pp.489-511). New York, NY: Routledge/Taylor & Francis Group.

Rousseau, D. M. (2007). A sticky, leveraging, and scalable strategy for high-quality connections between organizational practice and science. *Academy of Management Journal, 50,* 1037-1042.

Sackett, P. R. (2002). The structure of counterproductive work behaviors: Dimensionality and relationships with facets of job performance. *International Journal of Selection and Assessment, 10*, 5-11.

Sackett, P. R., & DeVore, C. J. (2001). Counterproductive behaviors at work. In N. Anderson, D. Ones, H. Sinangil, & C. Viswesvaran (Eds.), *Handbook of industrial, work, and organizational psychology, Vol. 1* (pp. 145-164). London: Sage.

Salgado, J. F. (2002). The big five personality dimensions and counterproductive

behaviors. *International Journal of Selection and Assessment, 10*, 117-125.

Schmidt, F. L. (2010). Detecting and correcting the lies that data tell. *Perspectives on

Psychological Science, 5,* 233-242.

Schmitt, N. (1994). Method bias: The importance of theory and measurement. *Journal of

Organizational Behavior, 15*, 393-398.

Schriesheim, C. A., Powers, K. J., Scandura, T. A., & Gardiner, C. C. (1993). Improving

construct measurement in management research: Comments and a quantitative

approach for assessing the theoretical content adequacy of paper-and-pencil

survey-type instruments. *Journal of Management, 19*, 385-417.

Schwab, D. P. (1980). Construct validity in organizational behavior. In L. L. Cummings

& B. M. Staw (Eds.), *Research in organizational behavior, Vol. 2* (pp. 3-43).

Greenwich, CT: JAI Press.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-

experimental designs for generalized causal inference.* Boston: Houghton-Mifflin.

Singh, J. (1991). Redundancy in constructs: Problem, assessment, and an illustrative

example. *Journal of Business Research, 22,* 255-280.

Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its

nature and antecedents. *Journal of Applied Psychology, 68¸* 653-663.

Spector, P. E., Bauer, J. A., & Fox, S. (2010). Measurement artifacts in the assessment of

counterproductive work behavior and organizational citizenship behavior: Do we

know what we think we know? *Journal of Applied Psychology, 95*, 781-790.

Spector, P. E., & Fox, S. (2005). A model of counterproductive work behavior. In S. Fox & P. E. Spector (Eds.), *Counterproductive workplace behavior: Investigations of actors and targets* (pp. 151-174). Washington, DC: APA.

Spector, P. E., Fox, S., Penney, L, M., Bruursema, K., Goh, A., & Kessler, S. (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior, 68,* 446-460.

Stone-Romero, E. F., Alvarez, K., & Thompson, L. F. (2009). The construct validity of conceptual and operational definitions of contextual performance and related constructs. *Human Resource Management Review, 19,* 104-116.

Suddaby, R. (2010). Construct clarity in theories of management and organization. *Academy of Management Review*, *35*, 346-357.

Tepper, B. J., Lockhart, D., & Hoobler, J. (2001). Justice, citizenship, and role definition effects. *Journal of Applied Psychology, 86,* 789-796.

Thorndike, E. L. (1920). A constant error in psychological ratings. *Journal of Applied Psychology, 4*, 25-29.

U.S. Department of Labor. (1991). *Dictionary of Occupational Titles, Revised. 4th edition*. Washington, DC: US Department of Labor, Employment and Training Administration, US Employment Service.

Van Dyne, L., Cummings, L. L., & Parks, J. M. 1995. Extra-role behaviors: In pursuit of construct and definitional clarity (A bridge over muddied waters). In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior, Vol. 17,* (pp. 215-285). Greenwich, CT: JAI Press.

Vey, M. A., & Campbell, J. P. (2004). In-role or extra-role organizational citizenship behavior: Which are we measuring? *Human Performance, 17*, 119-135.

Viswesvaran, C., & Ones, D. S. (2000). Perspectives on models of job performance. *International Journal of Selection and Assessment, 8,* 216-226.

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*, 601-617

APPENDIX A

SURVEY FOR SCHOLARS' REVIEW OF CONSTRUCT DEFINITIONS

A. Task performance

Performance of necessary activities that are formally required and expected as part of the employee's role or job. Task performance reflects the degree to which an employee meets the expectations and requirements of his or her individual role or job. Behaviors may include the activities and requirements that are commonly specified in a job description and may be specific to one job.

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient). Please type an "x" in a box to mark your rating.

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

1b. If you think the above definition is NOT satisfactory, then please indicate below what should be removed and/or added:

2. If you have developed scales or items to measure *task performance,* then please rate the extent to which the above definition satisfactorily reflects the behavior your scales/items were designed to measure. Please type an "x" in a box to mark your rating.

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

B. Citizenship performance
Performance of behaviors that are not directly related to the employee's main task activities but are important because they support the organizational context in which important tasks are accomplished. Citizenship performance reflects behaviors that go beyond task performance and includes actions that support others, benefit and support the organization, and demonstrate persistence and extra effort.

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient).

☐ Very unsatisfactory   ☐ Unsatisfactory   ☐ Neither unsatisfactory nor satisfactory   ☐ Satisfactory   ☐ Very satisfactory

1b. If you think the above definition is NOT satisfactory, then please indicate below what should be removed and/or added:

2. If you have developed scales or items to measure *citizenship performance,* then please rate the extent to which the above definition satisfactorily reflects the behavior your scales/items were designed to measure.

☐ Very unsatisfactory   ☐ Unsatisfactory   ☐ Neither unsatisfactory nor satisfactory   ☐ Satisfactory   ☐ Very satisfactory

C. Counterproductive work behavior (CWB)

Performance of intentional and voluntary behavior that violates organizational interests and norms, and is intended to harm the organization or coworkers/supervisors, or both. Examples of behaviors may include theft, abuse of company information, time, or resources, and harmful actions towards others.

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient).

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

1b. If you think the above definition is NOT satisfactory, then please indicate below what should be removed and/or added:

2. If you have developed scales or items to measure *counterproductive work behavior,* then please rate the extent to which the above definition satisfactorily reflects the behavior your scales/items were designed to measure.

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

D. Withdrawal behavior
Performance of behaviors that represent an attempt to avoid or escape the work role. Examples of behaviors may include problems with attention or attendance, or the employee's intention or desire to quit.

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient).

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

1b. If you think the above definition is NOT satisfactory, then please indicate below what should be removed and/or added:

2. If you have developed scales or items to measure *withdrawal behavior,* then please rate the extent to which the above definition satisfactorily reflects the behavior your scales/items were designed to measure.

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

APPENDIX B

ORIGINAL CONSTRUCT DEFINITIONS AND RATINGS, COMMENTS, AND

REVISIONS

<u>Original Definition (Mean satisfactory rating: 3.78/5)</u>

<u>Task performance</u>: Performance of necessary activities that are formally required and expected as part of the employee's role or job. Task performance reflects the degree to which an employee meets the expectations and requirements of his or her individual role or job. Behaviors may include the activities and requirements that are commonly specified in a job description and may be specific to one job.

<u>Scholar Comments (if provided)</u>	<u>Revisions and Responses</u>
Scholar 3 Borman and Motowidlo (1993) defined task performance as activities that are formally recognized as part of the job and that contribute to the organization's technical core. I like that because it does not limit task performance to activities in a job description (many jobs have no job description, yet surely there is still task performance). *I am very troubled by "necessary" in your definition*, as in many jobs there are multiple routes to effective performance.	▪ "Necessary" was removedfrom the definition
Scholar 6 *"Expectations"* can include OCB; "requirements" may include not engaging in CWB. *The definition provided is too broad and goes beyond the performance of tasks that are part of the job or the role*. Task performance is NOT synonymous with overall job performance or even job performance. (See Viswesvaran and Ones, 2000, IJSA for a definition). *Performance of core job/role tasks alone belongs in the definition*.	▪ "Expectations" was removed to minimize overlap with citizenship performance. ▪ The focus of task performance was narrowed by defining it as reflecting "core tasks in a role and/or job".
Scholar 7 *The only issue I have with this definition is your emphasis on "part-of-job," implying indirectly (and confirmed with your CP definition below) that citizenship performance is not part of the job.* When we surveyed researchers and practitioners about dimensions (and their definitions) they had seen on performance appraisal forms, fully 30% of the hundreds of dimensions could be reliably classified as CP-related. CP is often required, expected, and used in making assessments of job performance. Also, I now count about 10 studies that demonstrate about equal weights are placed on task and citizenship performance when supervisors (and in one study, peers) make overall performance or overall effectiveness ratings, further evidence that CP is expected as part of job performance. So, I believe you should be sensitive about this when forming your definitions of task and citizenship performance.	▪ "Part of the employee's role or job" was removed; tasks are now described as "formally required" in the role/job. ▪ Both task performance and citizenship were considered to be important to overall job performance. Therefore, to ensure the definitions contain minimal overlap the indirect reference to citizenship performance was removed by deleting "expectations" from the definition.

Scholar 9

Perhaps, in the "task performance" dimension, *I might add the word "technical" somewhere in the wording, but not all work is thought of as technical*, either by the people who do the work or those who supervise them.

- Since "technical" may not apply to all work, "technical" was not added to the definition.

Scholar 10

By that I mean that your *definitions of task and citizenship performance, for instance, include only behaviors that are on the positive end of an effectiveness dimension*. They are only behaviors that the organization finds positively valuable and wants to encourage. But what about behaviors that are ineffective? Like behaviors one would find in negative critical incidents? Your definitions assume that only positive task and citizenship behaviors are part of the performance domain and performance then is scaled according to the frequency with which someone performs them over some period of time. *How often they perform task and citizenship related acts that the organization would rather discourage because they are dysfunctional are not considered at all.*

- Although it is important to account for ineffective behavior, such behavior should lead to lower ratings of task performance behaviors.

Note. Criticisms of the construct definitions are in italicized text.

Original Citizenship Performance Definition – Comments, Responses, and Revisions

Original Definition (Mean satisfactory rating: 3.11/5)
Citizenship performance: Performance of behaviors that are not directly related to the employee's main task activities but are important because they support the organizational context in which important tasks are accomplished. Citizenship performance reflects behaviors that go beyond task performance and includes actions that support others, benefit and support the organization, and demonstrate persistence and extra effort.

Scholar Comments (if provided)	Our Revisions and Responses
Scholar 3 satisfactory. *My only concern is the "persistence and extra effort" piece.* That's OK if it does not include the task domain. *Persistence and extra effort in the task domain contributes to high task performance.*	▪ "Persistence and extra effort" was removed from the definition
Scholar 4 *Remove the part about persistence and extra effort.* That is part of task performance. Citizenship is not just very high task performance. *It is something done in addition to tasks.*	▪ "Persistence and extra effort;" was removed; definition now indicates that behaviors are completed "in addition to tasks"
Scholar 5 Your definition of OCB is very general and does not differentiate affiliative OCB from change-oriented citizenship. In addition, *the emphasis on extra effort can be confounded with high levels of task performance.* I recommend that you use a more contemporary definition that acknowledges theoretically meaningful differences in types of OCB - affiliative and change-oriented.	▪ "Extra effort" was removed from the definition
Scholar 6 Not all sub-dimensions of OCB are reflected in the definition. *OCB does not need to be aimed at supporting the org. context alone. It may include behaviors directed at supporting other organizational members without directing focus of behavior to the org.* The definition provided is deficient.	▪ It is now clearly detailed that citizenship actions may benefit others and/or the organization.

Scholar 7

The first part of the first sentence is not too bad in this regard in that it refers to "main task activities," better than, for example "employee's job" or "main job activities," but maybe *you could make it even clearer this has nothing to do with not being part of a job*. The rest of the definition looks great.

- Citizenship is no longer described as being unrelated to task activities.

Scholar 10

By that I mean that your *definitions of task and citizenship performance, for instance, include only behaviors that are on the positive end of an effectiveness dimension*. They are only behaviors that the organization finds positively valuable and wants to encourage. But what about behaviors that are ineffective? Like behaviors one would find in negative critical incidents? Your definitions assume that only positive task and citizenship behaviors are part of the performance domain and performance then is scaled according to the frequency with which someone performs them over some period of time. *How often they perform task and citizenship related acts that the organization would rather discourage because they are dysfunctional are not considered at all.*

- Although it is important to account for ineffective behavior, such ineffective behaviors should lead to lower ratings of task performance behaviors.

Note. Criticisms of the construct definitions are in italicized text.

Original Counterproductive work behavior (CWB) Definition – Comments, Responses, and Revisions

Original Definition (Mean satisfactory rating: 3.44/5)
<u>Counterproductive work behavior (CWB)</u>: Performance of intentional and voluntary behavior that violates organizational interests and norms, and is intended to harm the organization or coworkers/supervisors, or both. Examples of behaviors may include theft, abuse of company information, time, or resources, and harmful actions towards others.

Scholar Comments (if provided)	Our Revisions and Responses
Scholar 3 unsatisfactory. *I'm on record as opposing the "intent to harm" language in defining CWB* (see, for example, Sackett and DeVore 2001). *I believe many CWBs are commited with no explicit intent to harm.* Impulsivity drives many CWBs: the response when asked "what were you thinking?" is " I wasn't thinking".	▪ "Intentional" was removed from the definition.
Scholar 4 *There are too many qualifiers in this definition. It has to violate organizational interests and norms and be intended to harm.* I might steal something that harms the organization, but I don't intend harm at all—I just want the item. There are two main definitions that people use. From the organization perspective, Sackett says CWB is behavior that runs counter to an organization's legitimate interests. From an employee perspective, Fox & Spector say it is behavior that harms organizations or stakeholders. *We dropped the intentionality part because it is not assessed and is difficult to establish.*	▪ "Intentional" was removed from the definition. ▪ The qualifiers were revised and now describe CWB as behavior that violates organizational interests and norms and that "may" harm the organization or organizational members.
Scholar 6 *Intention to harm is irrelevant. As long as the behavior is harmful and was not accidental, it constitutes CWB.* See Viwesvaran and Ones (2000, IJSA) as well as Sackett & Devore (2001) Handbook of IWO psych. The definition provided above is contaminated with motivational attribution.	▪ "Intentional" was removed from the definition.
Scholar 7 I don't feel the same way here about part-of-job or not; obviously these behaviors are not part of the job. *I might delete "voluntary" because it sounds a bit strange in this context (volunteering to steal, commit sabotage, etc.?)*	▪ "Voluntary" was removed from the definition.

Note. Criticisms of the construct definitions are in italicized text.

Original Withdrawal Behavior Definition – Comments, Responses, and Revisions

<table>
<tr><td colspan="2" align="center">Original Definition (Mean satisfactory rating: 3.00)</td></tr>
<tr><td colspan="2"><u>Withdrawal Behavior</u>: Performance of behaviors that represent an attempt to avoid or escape the work role. Examples of behaviors may include problems with attention or attendance, or the employee's intention or desire to quit.</td></tr>
<tr><td align="center"><u>Scholar Comments (if provided)</u></td><td align="center"><u>Our Revisions and Responses</u></td></tr>
<tr>
<td>Scholar 1
Anyhow, Dan Newman, Phil Roth, and I have definitions for each of these in our 2006 AMJ, except CWB's, although we call them "focal performance," "contextual performance," and "withdrawal" respectively. *The latter we define as the reduction or withholding of individual effort / resources from one's work role.*</td>
<td>■ Withdrawal is now defined as employee reduction of attendance, attention, and effort.</td>
</tr>
<tr>
<td>Scholar 4
There are two ideas here--*escaping work by not being present and avoiding work by not actually doing the role, even though one might be present. I would separate those. Also intentions are not behaviors, so I would drop intentions and desires*.</td>
<td>■ Withdrawal is now described as the extent to which the employee escapes and avoids work.

■ Intentions and desires were removed from the definition</td>
</tr>
<tr>
<td>Scholar 5
I cannot differentiate your definition of withdrawal behaviors from low levels of task performance or from counterproductive behavior. Problems with attention or attendance could be low task performance or counterproductive depending on the motivation. *The definition of withdrawal behaviors should NOT include intentions. Intentions are psychological constructs - not behaviors.*</td>
<td>■ Intentions have been removed from the definition</td>
</tr>
</table>

Scholar 6

Behavior is not an "attempt". It refers to actual behaviors that remove one psychologically (e.g., surfing the web, daydreaming) and physically from the work environment (e.g., absenteeism, lateness, and ultimately turnover). "Intentions" and "desires" so not constitute behavior.

- Withdrawal behavior is no longer defined as an "attempt".
- Examples are provided of the behaviors reflecting psychological (e.g., daydreaming) and physical (e.g., attendance) withdrawal.
- Intentions and desires have been removed from the definition
-

Scholar 7

Seems a bit thin. *Maybe more examples, covering the possible behaviors more comprehensively.*

- The revised definition is much more comprehensive and includes examples of forms of withdrawal behavior.

Scholar 8

A distinction should be made between job withdrawal (avoiding or escaping the entire work role by quitting or retiring) and work withdrawal (avoiding the quotidian tasks that make up a work role, e.g., missing meetings, refusing to do certain tasks, etc.

- Examples of withdrawal such as avoiding or escaping work, quitting, and poor attendance have been included.

Scholar 9

I'm inclined to view the "deliberate" withholding of some forms of OCB as a form of "withdrawal." In fact, I even said as much in a paper done for a volume of Sociology of Work (in reference to senior people who feel unfairly treated, but have no place to go, i.e., "continuance commitment."

- Withdrawal is now defined as employee reduction of effort, which also reflects a reduction of additional work behavior (e.g., citizenship).

Note. Criticisms of the construct definitions are in italicized text.

APPENDIX C

SURVEY REGARDING REVISED CONSTRUCT DEFINITION

<table>
<tr><td colspan="5" align="center">**Task performance**</td></tr>
<tr><td colspan="5">**Performance of the core tasks that are formally required in the employee's role or job. Task performance reflects the degree to which an employee meets the requirements of his or her individual role or job. Behaviors may include the activities and requirements that are specified in a job description, and these activities may be specific to one job.**</td></tr>
</table>

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient). Please type an "x" in a box to mark your rating.

☐ | ☐ | ☐ | ☐ | ☐
Very unsatisfactory | Unsatisfactory | Neither unsatisfactory nor satisfactory | Satisfactory | Very satisfactory

1b. *Optional: You may use this space to provide comments about the definition*:

<table>
<tr><td colspan="5" align="center">**Citizenship performance**</td></tr>
<tr><td colspan="5">**Performance of behaviors that are completed in addition to the employee's core tasks. These behaviors support the work environment. Citizenship performance behaviors may include actions that benefit or support others in the organization, or that benefit or support the organization itself.**</td></tr>
</table>

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient).

☐ | ☐ | ☐ | ☐ | ☐
Very unsatisfactory | Unsatisfactory | Neither unsatisfactory nor satisfactory | Satisfactory | Very satisfactory

1b. *Optional: You may use this space to provide comments about the definition*:

Counterproductive work behavior (CWB)

Performance of behavior that violates organizational interests and norms, and that may harm the organization itself, coworkers/supervisors, or both. Some example behaviors include theft, abuse of the company's information, time, or resources, and engaging in harmful actions towards others.

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient).

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

1b. *Optional: You may use this space to provide comments about the definition*:

Withdrawal behavior

Performance of behaviors that represent an employee's disengagement from the work environment and/or tasks. Withdrawal behavior reflects the extent to which an employee reduces attendance, attention, or effort and, therefore, escapes or avoids work. Some examples may include poor attendance, quitting, or daydreaming.

1a. Please rate the extent to which the above definition is satisfactory in terms of its completeness (i.e., is neither contaminated nor deficient).

☐	☐	☐	☐	☐
Very unsatisfactory	Unsatisfactory	Neither unsatisfactory nor satisfactory	Satisfactory	Very satisfactory

1b. *Optional: You may use this space to provide comments about the definition*:

What is your sex?	1= Male	$n = 26$
	2= Female	$n = 20$
What is your highest degree?	1= Master's in I/O Psychology	$n = 13$
	2= MBA	$n = 0$
	3= Doctorate in I/O Psychology	$n = 24$
	4= Doctorate in Management (e.g., OB/HR)	$n = 2$
	5= Other_____	$n = 7$
Please enter the year you completed your highest degree		Mode = 8 (2009) Min/Max = 1962/2011
How would you describe your primary employment?	1= I work primarily at a university/college (e.g., faculty, lecturer)	$n = 30$
	2= I work primarily in industry (e.g., consultant, practitioner)	$n = 10$
	3= Other _____	$n = 4$
Please rate your agreement with the following statements		
I have experience rating employee performance	1= strongly disagree	$M = 3.57$, $SD = 1.33$
	2= disagree	
	3= neither agree nor disagree	
	4= agree	
	5= strongly agree	
I have validated a scale/measure to assess a performance behavior	1= strongly disagree	$M = 3.09$, $SD = 1.56$
	2= disagree	
	3= neither agree nor disagree	
	4= agree	
	5= strongly agree	
I am familiar with the general definitions of commonly-studied performance behaviors	1= strongly disagree	$M = 4.63$, $SD = 0.48$
	2= disagree	
	3= neither agree nor disagree	
	4= agree	
	5= strongly agree	

I am familiar with some of the scales used to measure commonly-studied performance behaviors	1= strongly disagree 2= disagree 3= neither agree nor disagree 4= agree 5= strongly agree	$M = 4.38$, $SD = 0.68$

APPENDIX D

REVISED INSTRUCTIONS TO THE SUBSTANTIVE VALIDITY

ASSESSMENT

The purpose of these next pages is to make sure that you understand the directions of this task. Please read the following information carefully:

Many researchers and managers want to understand how employees behave at work. As a result, researchers have created many questionnaires with questions that are supposed to measure one of **four important work behaviors** of employees. Your task is to look at these questionnaire items and rate how much you think **each question represents each of the definitions of these four key behaviors**.

You will take the following three steps to complete this task:

1. First, you will be asked to **read each of the four definitions of employee behavior**. All four definitions are presented below, but when you begin the task they will be presented to you one-at-a-time. You are not expected to memorize each definition since it will always be presented on your screen. Here are the four definitions (in no particular order):

> **A. Task performance**: Performance of the core tasks that are formally required in the employee's role or job. Task performance reflects the degree to which an employee meets the requirements of his or her individual role or job. Behaviors may include the activities and duties that are specified in a job description.

> **B. Citizenship performance**: Performance of behaviors that are distinct from the employee's core tasks. These are positive behaviors that support the work environment. Citizenship performance behaviors may include actions that benefit or support others in the organization, or that benefit or support the organization itself. Examples may include assisting a coworker or presenting a positive image of the organization to others.

> **C. Withdrawal performance**: Performance of behaviors that represent an employee's disengagement from the work environment and/or tasks. Withdrawal reflects the extent to which an employee reduces attendance, attention, or effort and, therefore, escapes or avoids work. Some examples may include poor attendance, daydreaming, or turnover (quitting).

> **D. Counterproductive work behavior**: Performance of behaviors that violate organizational interests and norms, and that may harm the organization itself, coworkers/supervisors, or both. Some example behaviors include theft, abuse of the company's information, time, or resources, and engaging in harmful actions towards others.

Once you understand this step, click "continue" to move to the next step.

2. Second, you will be presented with different sets of questions. As mentioned before, these questions were created to measure different work behaviors. Your task is to rate how well you believe **each question represents the definition of the behavior.**

Here is a picture illustrating how the task is structured:

Please rate the extent to which you believe each item represents the following definition of Task Performance:

Task Performance

Performance of the core tasks that are formally required in the employee's role or job. Task performance reflects the degree to which an employee meets the requirements of his or her individual role or job. Behaviors may include the activities and duties that are specified in a job description.

Please rate each item on a scale from 1 (not at all representative) to 5 (completely representative)

	Not at all (1)	(2)	(3)	(4)	Completely (5)
In the past two working weeks, going back 14 days, how many times were you late?	○	○	○	○	○
I have taken a personal interest in this individual.	○	○	○	○	○
"Touches base" with others before initating actions that might affect them.	○	○	○	○	○
Made an obscene comment or gesture at a co-worker.	○	○	○	○	○
Always follows the rules of the company and the department.	○	○	○	○	○
Commitment to organization.	○	○	○	○	○
Failing to warn target of impending danger/difficulty.	○	○	○	○	○
Is competent in all areas of the job, handles tasks with proficiency.	○	○	○	○	○
I am seriously considering quitting this firm for an alternate employer.	○	○	○	○	○
Consumes a lot of time complaining about trivial matters (R).	○	○	○	○	○
Staring, dirty looks, or other negative eye-contact.	○	○	○	○	○

Additional information

- As you can see, you will be asked to provide a rating on a scale from 1 (*not at all*) to 5 (*completely*). A "1" indicates that you believe the question is **not at all** representative of the definition. A "5" means you believe the question **completely** represents the definition.

- If there is an **(R)** at the end of a question, this means you should think of the question *in reverse*. For example, if you see a question such as, "Consumes a lot of time complaining about trivial matters (R)," you should think of this question as "[DOES NOT] consume a lot of time complaining about trivial matters". **For (R) questions, you should provide your rating according to**

the <u>reversed</u> wording of the question.

- As a reminder, you are only rating how well you believe each question represents the definition. You are NOT rating your own performance.

Once you understand this step, click "continue" to move to the next page.

3. Third, because there are four behaviors, your task is to rate the same sets of questions for each of the four definitions. This means that it is extremely important that you pay attention to the definitions throughout the entire task.

If you fully understand what you are to do in this task, please click "continue" to start the task.

Because the instructions for this survey are somewhat unusual, if you are unsure, please go back to the previous pages and re-read the instructions. When you fully understand what you are supposed to do, please click "continue" to start the task. Thank you.

APPENDIX E

ITEM-LEVEL RESULTS OF SUBSTANTIVE VALIDITY ASSESSMENT

Item-Level Results: Items Matching Posited Construct

Items matching posited construct			
Item Wording	Posited Construct	Mean d[a]	Citation
Acted rudely toward someone at work.	CWB	1.74	Bennett & Robinson (2000)
Allowed yourself to be reimbursed for more money than you actually spent on expenses.	CWB	4.62	Hakstian et al. (2002)
Argue or fight with a co-worker.	CWB	5.06	Gruys & Sackett (2003)
Argue or fight with a customer.	CWB	3.65	Gruys & Sackett (2003)
Argue or fight with a supervisor.	CWB	4.48	Gruys & Sackett (2003)
Argued with coworkers.	CWB	1.18	Lehman & Simpson (1992)
Attack with weapon.	CWB	12.78	Neuman & Baron (1998)
Belittling someone's opinions to others.	CWB	10.75	Neuman & Baron (1998)
Borrowed or took money from employer without approval.	CWB	3.42	Hakstian et al. (2002)
Criticized people at work.	CWB	1.39	Robinson & O' Leary-Kelly (1998)
Cursed at someone at work.	CWB	1.85	Bennett & Robinson (2000)
Damaging/sabotaging company property needed by target.	CWB	13.96	Neuman & Baron (1998)
Deface, damage, or destroy property, belonging to a co-worker.	CWB	5.88	Gruys & Sackett (2003)
Deface, damage, or destroy property, belonging to a customer.	CWB	4.00	Gruys & Sackett (2003)
Deface, damage, or destroy property, equipment, or product belonging to the company.	CWB	3.44	Gruys & Sackett (2003)
Deliberately sabotage the production of product in the company.	CWB	4.80	Gruys & Sackett (2003)
Delivering unfair/negative performance appraisals.	CWB	9.20	Neuman & Baron (1998)
Destroy or falsify company records or documents.	CWB	5.31	Gruys & Sackett (2003)
Destroying mail or messages needed by the target.	CWB	11.35	Neuman & Baron (1998)
Direct refusal to provide needed resources or equipment.	CWB	11.00	Neuman & Baron (1998)
Discuss confidential matters with unauthorized personnel within or outside the organization.	CWB	4.87	Gruys & Sackett (2003)
Discussed confidential company information with an unauthorized person.	CWB	2.46	Bennett & Robinson (2000)
Disobeyed supervisor's instructions.	CWB	1.31	Lehman & Simpson (1992)
Dragged out work in order to get overtime.	CWB	2.23	Bennett & Robinson (2000)
Endanger coworkers by not following safety procedures.	CWB	3.93	Gruys & Sackett (2003)
Endanger customers by not following safety procedures.	CWB	3.44	Gruys & Sackett (2003)
Endanger yourself by not following safety procedures.	CWB	3.89	Gruys & Sackett (2003)
Engage in drug use on the job.	CWB	4.80	Gruys & Sackett (2003)
Failed to give coworker required information.	CWB	1.95	Skarlicki & Folger (1997)
Failing to defend target's plans to others.	CWB	7.78	Neuman & Baron (1998)
Failing to deny false rumors about the target.	CWB	8.00	Neuman & Baron (1998)
Failing to object to false accusation about the target.	CWB	8.83	Neuman & Baron (1998)
Failing to protect target's welfare or safety.	CWB	11.78	Neuman & Baron (1998)
Failing to warn the target of impending danger.	CWB	10.44	Neuman & Baron (1998)
Falsified a receipt to get reimbursed for more money than you spent on business expenses.	CWB	2.34	Bennett & Robinson (2000)
Flaunting status/acting in a condescending manner.	CWB	9.73	Neuman & Baron (1998)

Items matching posited construct

Item Wording	Posited Construct	Mean d^{a}	Citation
Giving someone the silent treatment.	CWB	6.89	Neuman & Baron (1998)
Gossiped about my supervisor.	CWB	3.26	Aquino et al. (1999)
Help another person or advise them how to take company property or merchandise.	CWB	1.71	Gruys & Sackett (2003)
Holding target, or this person's work, up to ridicule.	CWB	8.85	Neuman & Baron (1998)
I accepted payment in exchange for doing someone a favor.	CWB	3.69	Marcus et al. (2002)
I admitted mistakes I had made. (RS)	CWB	2.95	Marcus et al. (2002)
I argued with people from outside the organization (e.g., customer or visitors).	CWB	3.38	Marcus et al. (2002)
I concealed information, even if it were important for my colleagues.	CWB	3.64	Marcus et al. (2002)
I consciously impaired the life of colleague or subordinate.	CWB	5.78	Marcus et al. (2002)
I deceived coworkers if I had a personal advantage from doing so.	CWB	5.94	Marcus et al. (2002)
I deliberately damaged property at work.	CWB	4.26	Marcus et al. (2002)
I did not report theft by others.	CWB	4.31	Marcus et al. (2002)
I drank alcohol during working hours.	CWB	3.56	Marcus et al. (2002)
I drank enough alcohol at work that I could feel the impact.	CWB	4.99	Marcus et al. (2002)
I falsified business documents.	CWB	6.59	Marcus et al. (2002)
I falsified or exaggerated my work results.	CWB	3.74	Marcus et al. (2002)
I gave employee discounts to friends or relatives.	CWB	5.42	Marcus et al. (2002)
I had drunk too much during working hours.	CWB	3.48	Marcus et al. (2002)
I have read confidential information or mail addressed to coworkers.	CWB	4.08	Marcus et al. (2002)
I have said something negative about a colleague to my supervisor, in order to harm the colleague.	CWB	6.42	Marcus et al. (2002)
I have stolen property of colleagues.	CWB	7.25	Marcus et al. (2002)
I have threatened co-workers if they didn't do what I wanted them to do.	CWB	6.45	Marcus et al. (2002)
I helped someone to steal company property.	CWB	4.13	Marcus et al. (2002)
I ignored instructions of my supervisor.	CWB	3.66	Marcus et al. (2002)
I insulted other employees.	CWB	3.70	Marcus et al. (2002)
I intentionally made mistakes.	CWB	4.88	Marcus et al. (2002)
I left property of colleagues without asking for permission.	CWB	3.46	Marcus et al. (2002)
I made private calls or sent private emails at the company's expense.	CWB	7.13	Marcus et al. (2002)
I made private photocopies at the company's expense during working hours without permission.	CWB	6.07	Marcus et al. (2002)
I overheard discussions of coworkers to take personal advantage of it.	CWB	3.83	Marcus et al. (2002)
I passed confidential information on to someone outside the organization.	CWB	6.65	Marcus et al. (2002)
I physically touched a coworker of the opposite sex on purpose.	CWB	3.62	Marcus et al. (2002)
I presented ideas of colleagues as my own.	CWB	5.57	Marcus et al. (2002)
I purposefully structured my tasks in such a way that only I could comprehend them.	CWB	3.60	Marcus et al. (2002)

Items matching posited construct

Item Wording	Posited Construct	Mean d^{a}	Citation
I put the blame on colleagues for mistakes I personally made.	CWB	3.94	Marcus et al. (2002)
I searched through documents belonging to my coworkers to see if I could use the information for myself.	CWB	3.33	Marcus et al. (2002)
I sold goods to friends at reduced prices.	CWB	6.05	Marcus et al. (2002)
I sought revenge from colleagues.	CWB	4.02	Marcus et al. (2002)
I spread baseless rumors about colleagues.	CWB	6.01	Marcus et al. (2002)
I spread rumors about the firm.	CWB	6.05	Marcus et al. (2002)
I took a part of my work materials for private use.	CWB	6.86	Marcus et al. (2002)
I took drugs during working hours (hash, intoxicant medicine, etc.).	CWB	3.85	Marcus et al. (2002)
I took home merchandise without permission.	CWB	4.06	Marcus et al. (2002)
I took home office supplies for private use.	CWB	3.80	Marcus et al. (2002)
I took money from my workplace that didn't belong to me.	CWB	6.56	Marcus et al. (2002)
I took work materials home without permission.	CWB	3.29	Marcus et al. (2002)
I tried to hide my own errors.	CWB	3.37	Marcus et al. (2002)
I turned in a falsified bill of expenses.	CWB	4.99	Marcus et al. (2002)
I used a company car on my private business without permission.	CWB	6.57	Marcus et al. (2002)
I used more work materials than absolutely necessary.	CWB	4.89	Marcus et al. (2002)
I violated safety instructions.	CWB	3.53	Marcus et al. (2002)
In rage, I damaged company equipment.	CWB	7.22	Marcus et al. (2002)
Intentionally damning with faint praise.	CWB	9.04	Neuman & Baron (1998)
Intentionally worked slower.	CWB	1.27	Skarlicki & Folger (1997)
Interfering with or blocking the target's work.	CWB	11.64	Neuman & Baron (1998)
Interrupting others when they are speaking/working.	CWB	7.62	Neuman & Baron (1998)
I've got physically rough with other employees (coworkers, colleagues, or superiors).	CWB	4.09	Marcus et al. (2002)
I've got physically rough with people from outside the organization (e.g., customers, visitors).	CWB	4.53	Marcus et al. (2002)
Lie to employer or supervisor to cover up a mistake.	CWB	4.02	Gruys & Sackett (2003)
Littered your work environment.	CWB	3.08	Bennett & Robinson (2000)
Made an ethnic, racial, or religious slur against a co-worker.	CWB	3.44	Aquino et al. (1999)
Made an ethnic, religious, or racial remark at work.	CWB	1.34	Bennett & Robinson (2000)
Made fun of someone at work.	CWB	1.38	Bennett & Robinson (2000)
Made unauthorized use of organizational property.	CWB	4.19	Aquino et al. (1999)
Make unwanted sexual advances toward a co-worker.	CWB	3.57	Gruys & Sackett (2003)
Make unwanted sexual advances toward a customer.	CWB	4.15	Gruys & Sackett (2003)
Make unwanted sexual advances toward a subordinate.	CWB	3.69	Gruys & Sackett (2003)
Make unwanted sexual advances toward a supervisor.	CWB	4.06	Gruys & Sackett (2003)
Misuse business expense account.	CWB	3.41	Gruys & Sackett (2003)
Misuse employee discount privileges.	CWB	4.89	Gruys & Sackett (2003)
Needlessly consuming resources needed by the target.	CWB	11.49	Neuman & Baron (1998)
Negative or obscene gestures toward the target.	CWB	10.84	Neuman & Baron (1998)
Physical attack/assault (e.g., pushing shoving, hitting).	CWB	12.74	Neuman & Baron (1998)
Physically attack (e.g., pushing, shoving, hitting) a co-worker.	CWB	3.15	Gruys & Sackett (2003)

Items matching posited construct			
Item Wording	Posited Construct	Mean d^a	Citation
Physically attack (e.g., pushing, shoving, hitting) a customer.	CWB	6.05	Gruys & Sackett (2003)
Physically attack (e.g., pushing, shoving, hitting) a supervisor.	CWB	5.94	Gruys & Sackett (2003)
Physically attacked a co-worker.	CWB	1.81	Fox & Spector (1999)
Played a mean prank on someone at work.	CWB	2.07	Bennett & Robinson (2000)
Played a mean prank to embarrass someone at work.	CWB	1.19	Spector et al. (2006)
Played a practical joke on someone at work.	CWB	1.24	Fox & Spector (1999)
Possess or sell drugs on company property.	CWB	3.83	Gruys & Sackett (2003)
Provide goods or services at less than the price established by the company.	CWB	2.96	Gruys & Sackett (2003)
Provide the organization with false information to obtain a job (i.e., regarding education or experience).	CWB	4.63	Gruys & Sackett (2003)
Purposely ignored my supervisor's instructions.	CWB	3.90	Aquino et al. (1999)
Purposely interfered with someone else doing their job.	CWB	1.49	Fox & Spector (1999)
Refused to talk to a coworker.	CWB	3.87	Aquino et al. (1999)
Said something hurtful to someone at work.	CWB	1.78	Bennett & Robinson (2000)
Sending unfairly negative info to higher levels in company.	CWB	10.07	Neuman & Baron (1998)
Spread rumors or gossip about coworkers.	CWB	1.88	Lehman & Simpson (1992)
Staring, dirty looks, or other negative eye-contact.	CWB	9.59	Neuman & Baron (1998)
Started an argument with someone at work.	CWB	2.08	Robinson & O' Leary-Kelly (1998)
Steals/removes company property needed by target.	CWB	12.82	Neuman & Baron (1998)
Stolen something belonging to your employer.	CWB	1.43	Spector et al. (2006)
Stolen something from work.	CWB	1.89	Fox & Spector (1999)
Studied course material or worked on projects or assignments after consuming alcohol or illegal drugs.	CWB	3.16	Hakstian et al. (2002)
Take cash or property belonging to a co-worker.	CWB	5.60	Gruys & Sackett (2003)
Take cash or property belonging to a customer.	CWB	5.96	Gruys & Sackett (2003)
Take cash or property belonging to the company.	CWB	6.12	Gruys & Sackett (2003)
Take office supplies from the company.	CWB	3.51	Gruys & Sackett (2003)
Take petty cash from the company.	CWB	5.91	Gruys & Sackett (2003)
Taken property from work without permission.	CWB	2.57	Bennett & Robinson (2000)
Talking behind the target's back/spreading rumors.	CWB	11.30	Neuman & Baron (1998)
Teased a co-worker in front of other employees.	CWB	4.31	Aquino et al. (1999)
Theft/destruction of personal property belonging to target.	CWB	17.32	Neuman & Baron (1998)
Threats of physical violence.	CWB	15.36	Neuman & Baron (1998)
Told people outside the job what a lousy place you work at.	CWB	1.78	Fox & Spector (1999)
Took an extra break.	CWB	1.26	Crede et al. (2007)
Took company tools or equipment.	CWB	3.97	Hakstian et al. (2002)
Use company resources you aren't authorized to use.	CWB	5.58	Gruys & Sackett (2003)
Use sexually explicit language in the workplace.	CWB	5.51	Gruys & Sackett (2003)
Used an illegal drug or consumed alcohol on the job.	CWB	2.63	Bennett & Robinson (2000)
Verbal sexual harassment.	CWB	14.47	Neuman & Baron (1998)
Verbally abuse a co-worker.	CWB	5.57	Gruys & Sackett (2003)
Verbally abuse a customer.	CWB	5.06	Gruys & Sackett (2003)

Items matching posited construct			
Item Wording	Posited Construct	Mean d^{a}	Citation
Verbally abuse a supervisor	CWB	5.44	Gruys & Sackett (2003)
Verbally abused a co-worker.	CWB	1.80	Fox & Spector (1999)
Waste company resources.	CWB	3.43	Gruys & Sackett (2003)
Wasted company materials.	CWB	0.96	Skarlicki & Folger (1997)
When a supervisor treated me unfairly, I damaged company supplies in response.	CWB	6.52	Marcus et al. (2002)
Work unnecessary overtime.	CWB	2.43	Gruys & Sackett (2003)
Worked under the influence of alcohol or drugs.	CWB	3.72	Hakstian et al. (2002)
Yell or shout on the job.	CWB	4.42	Gruys & Sackett (2003)
Actively promotes the firm's products and services.	Citizenship	4.91	Bettencourt et al. (2001)
Actively promotes the organization's products and services to potential users.	Citizenship	2.10	Moorman & Blakely (1995)
Adjust your work schedule to accommodate other employees' requests for time off.	Citizenship	3.98	Lee & Allen (2002)
Always completes his/her work on time.	Citizenship	3.47	Konovsky & Organ (1996)
Always does more than he/she is required to do.	Citizenship	3.63	Konovsky & Organ (1996)
Always follows the rules of the company and the department.	Citizenship	3.70	Konovsky & Organ (1996)
Always goes out of the way to make newer employees feel welcome in the work group.	Citizenship	1.74	Moorman & Blakely (1995)
Always has a positive attitude at work.	Citizenship	4.57	Bettencourt et al. (2001)
Arriving early so that you are ready when your work shift begins.	Citizenship	2.12	Bachrach & Jex (2000)
Assist others with their duties.	Citizenship	4.61	Lee & Allen (2002)
Assisting co-workers with personal matters.	Citizenship	2.38	Coleman & Borman (2000)
Assists co-workers or students with personal problems.	Citizenship	3.89	McNeely & Meglino (1994)
Assists coworkers with heavy workloads, even though it is not part of his/her job.	Citizenship	2.62	Mossholder et al. (2005)
Assists others in this group with their work for the benefit of the group.	Citizenship	7.13	Van Dyne & LePine (1998)
Assists supervisor with his or her work.	Citizenship	5.44	Smith et al. (1983)
Attend functions not required but that help company image.	Citizenship	5.25	Smith et al. (1983)
Attend functions that are not required but that help the organizational image.	Citizenship	4.27	Lee & Allen (2002)
Attending functions that are not required, but that help the university's image (e.g., award ceremonies, receptions).	Citizenship	2.27	Bachrach & Jex (2000)
Attends and participates in meetings regarding the company.	Citizenship	3.36	Konovsky & Organ (1996)
Attends functions that are not required, but help the company image.	Citizenship	4.09	Podsakoff et al. (1990)
Attends functions that help this work group.	Citizenship	5.25	Van Dyne & LePine (1998)
Attends meetings that are not mandatory, but are considered important.	Citizenship	2.83	Podsakoff et al. (1990)
Being mindful of how own behavior affects others.	Citizenship	1.97	Kwantes et al. (2008)
Brings in food to share with co-workers.	Citizenship	2.68	McNeely & Meglino (1994)
Collects money for flowers for sick co-workers or funerals.	Citizenship	2.79	McNeely & Meglino (1994)
Compliments coworkers when they succeed at work.	Citizenship	2.79	Mossholder et al. (2005)
Considers the impact of his/her actions on coworkers.	Citizenship	3.05	Podsakoff et al. (1990)

Items matching posited construct			
Item Wording	Posited Construct	Mean d^a	Citation
Contributes many ideas for customer promotions and communications.	Citizenship	4.02	Bettencourt et al. (2001)
Cooperating with other organization members.	Citizenship	3.60	Coleman & Borman (2000)
Coordinates department get-togethers.	Citizenship	3.48	McNeely & Meglino (1994)
Covering for people who are absent or on a break.	Citizenship	2.06	Bachrach & Jex (2000)
Defend the organization when other employees criticize it.	Citizenship	3.90	Lee & Allen (2002)
Defended the organization if others criticized it.	Citizenship	5.32	Griffin et al. (2007)
Defending the organization when others criticize it.	Citizenship	2.17	Kwantes et al. (2008)
Defends the organization when other employees criticize it.	Citizenship	1.74	Moorman & Blakely (1995)
Defends the organization when outsiders criticize it.	Citizenship	1.75	Moorman & Blakely (1995)
Demonstrates concern about the image of the company.	Citizenship	3.20	Konovsky & Organ (1996)
Demonstrating allegiance to the organization.	Citizenship	3.89	Coleman & Borman (2000)
Demonstrating conscientiousness in support of the organization.	Citizenship	3.79	Coleman & Borman (2000)
Displaying dedication on the job.	Citizenship	3.13	Coleman & Borman (2000)
Does a personal favor for someone.	Citizenship	0.96	McNeely & Meglino (1994)
Encourages co-workers to contribute ideas and suggestions for service improvement.	Citizenship	4.77	Bettencourt et al. (2001)
Encourages friends and family to use firm's products and services.	Citizenship	5.45	Bettencourt et al. (2001)
Encourages others to try new and more effective ways of doing their job.	Citizenship	1.89	Moorman & Blakely (1995)
Encouraging friends and family to utilize organization products.	Citizenship	1.51	Kwantes et al. (2008)
Encouraging hesitant or quiet co-workers suggestions on how the group can improve.	Citizenship	1.87	Kwantes et al. (2008)
Encouraging others to try new and more effective ways of doing their job.	Citizenship	2.29	Kwantes et al. (2008)
Engaging in behavior that benefits individuals in the organization.	Citizenship	3.01	Coleman & Borman (2000)
Engaging in behavior that benefits the organization.	Citizenship	3.99	Coleman & Borman (2000)
Express loyalty toward the organization.	Citizenship	4.43	Lee & Allen (2002)
Frequently adjusts his/her work schedule to accommodate other employees' requests for time-off.	Citizenship	1.41	Moorman & Blakely (1995)
Frequently communicates to co-workers suggestions on how the group can improve.	Citizenship	1.35	Moorman & Blakely (1995)
Frequently presents to others creative solutions to customer problems.	Citizenship	4.40	Bettencourt et al. (2001)
Generates favorable goodwill for the company.	Citizenship	5.04	Bettencourt et al. (2001)
Gets involved to benefit this work group.	Citizenship	6.54	Van Dyne & LePine (1998)
Give up time to help others who have work or non-work problems.	Citizenship	3.50	Lee & Allen (2002)
Gives advance notice if unable to come to work.	Citizenship	4.89	Smith et al. (1983)
Go out of the way to make newer employees feel welcome in the work group.	Citizenship	4.42	Lee & Allen (2002)
Goes out of his/her way to help coworkers with work-related problems.	Citizenship	2.16	Moorman & Blakely (1995)

Items matching posited construct

Item Wording	Posited Construct	Mean d^{a}	Citation
Greeting coworkers and supervisors politely at the beginning and at the end of the day.	Citizenship	3.31	Bachrach & Jex (2000)
Help others who have heavy work loads.	Citizenship	3.64	Konovsky & Organ (1996)
Helped others by pointing out errors or omissions.	Citizenship	1.92	Crede et al. (2007)
Helping others who have heavy work loads.	Citizenship	2.08	Bachrach & Jex (2000)
Helping others with their work when they have been absent.	Citizenship	2.53	Bachrach & Jex (2000)
Helping people outside of your office group if they have a problem.	Citizenship	2.65	Bachrach & Jex (2000)
Helping students or visitors if they seem lost or in need of assistance.	Citizenship	3.16	Bachrach & Jex (2000)
Helping to make those around you more productive.	Citizenship	3.09	Bachrach & Jex (2000)
Helping to organize office get-togethers (e.g., birthday celebrations).	Citizenship	2.81	Bachrach & Jex (2000)
Helping to orient or train new people, even when not asked to do so.	Citizenship	1.93	Bachrach & Jex (2000)
Helps coworkers who are running behind in their work activities.	Citizenship	3.27	Mossholder et al. (2005)
Helps coworkers with difficult assignments, even when assistance is not directly requested.	Citizenship	3.63	Mossholder et al. (2005)
Helps coworkers with work when they have been absent.	Citizenship	2.39	Mossholder et al. (2005)
Helps make other workers productive.	Citizenship	2.58	Konovsky & Organ (1996)
Helps orient new employees in this group.	Citizenship	4.83	Van Dyne & LePine (1998)
Helps orient new people even though it is not required.	Citizenship	4.60	Podsakoff et al. (1990)
Helps others in this group learn about the work.	Citizenship	5.40	Van Dyne & LePine (1998)
Helps others in this group with their work responsibilities	Citizenship	5.68	Van Dyne & LePine (1998)
Helps others who have been absent.	Citizenship	6.14	Smith et al. (1983), Konovsky & Organ (1996), Lee & Allen (2002), Podsakoff et al. (1990), Williams & Anderson (1991)
Helps others who have heavy work loads.	Citizenship	7.44	Smith et al. (1983), Podsakoff et al. (1990), Williams & Anderson (1991)
Informing others in order to prevent unanticipated problems.	Citizenship	2.14	Kwantes et al. (2008)
Informing others of job-related problems they may not be aware of.	Citizenship	3.07	Bachrach & Jex (2000)
Is always ready to lend a helping hand to those around him/her.	Citizenship	3.55	Podsakoff et al. (1990)
Is mindful of how his/her behavior affects other people's jobs.	Citizenship	2.68	Podsakoff et al. (1990)
Keeping others in the organization informed about upcoming events, activities, actions, etc.	Citizenship	3.78	Coleman & Borman (2000)
Looks for other work to do when finished with assigned work.	Citizenship	4.19	Konovsky & Organ (1996)
Maintaining a positive attitude about the organization.	Citizenship	3.56	Coleman & Borman (2000)
Maintains a clean workplace.	Citizenship	3.26	Konovsky & Organ (1996)
Makes an extra effort to understand the problems faced by coworkers.	Citizenship	2.93	Mossholder et al. (2005)

Items matching posited construct			
Item Wording	Posited Construct	Mean d^a	Citation
Makes innovative suggestions to improve department.	Citizenship	5.21	Smith et al. (1983)
Making creative suggestions about university-wide improvements.	Citizenship	2.94	Bachrach & Jex (2000)
Not complaining about organizational conditions.	Citizenship	3.87	Coleman & Borman (2000)
Offer ideas to improve the functioning of the organization.	Citizenship	4.64	Lee & Allen (2002)
Offers suggestions for ways to improve operations.	Citizenship	2.96	Konovsky & Organ (1996)
Often motivates others to express their ideas and opinions.	Citizenship	2.04	Moorman & Blakely (1995)
Orients new people even though it is not required.	Citizenship	4.82	Smith et al. (1983)
Passes along information to co-workers.	Citizenship	3.94	Williams & Anderson (1991)
Presented a positive image of the organization to other people (e.g., clients).	Citizenship	5.30	Griffin et al. (2007)
Promoting and defending the organization.	Citizenship	4.51	Coleman & Borman (2000)
Regardless of circumstances, exceptionally courteous and respectful to customers.	Citizenship	4.53	Bettencourt et al. (2001)
Says good things about organization to others.	Citizenship	3.84	Bettencourt et al. (2001)
Sends birthday greetings to co-workers in the office.	Citizenship	3.30	McNeely & Meglino (1994)
Share personal property with others if necessary to help them with their work.	Citizenship	2.46	Konovsky & Organ (1996)
Share personal property with others to help their work.	Citizenship	3.60	Lee & Allen (2002)
Show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.	Citizenship	4.31	Lee & Allen (2002)
Show pride when representing the organization in public.	Citizenship	5.79	Lee & Allen (2002)
Showing pride when representing the organization in public.	Citizenship	2.06	Kwantes et al. (2008)
Shows concern and courtesy toward coworkers, even under the most trying business or personal situations.	Citizenship	2.95	Mossholder et al. (2005)
Shows genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.	Citizenship	1.51	Moorman & Blakely (1995)
Shows pride when representing the organization in public.	Citizenship	1.12	Moorman & Blakely (1995)
Speaks favorably about the organization to outsiders.	Citizenship	2.20	McNeely & Meglino (1994)
Suggesting procedural, administrative, or organizational improvements.	Citizenship	3.16	Coleman & Borman (2000)
Synergizing others through participation in the organization.	Citizenship	3.36	Coleman & Borman (2000)
Take action to protect the organization from potential problems.	Citizenship	3.41	Lee & Allen (2002)
Takes a personal interest in coworkers.	Citizenship	2.67	Mossholder et al. (2005)
Takes a personal interest in other employees.	Citizenship	3.31	Williams & Anderson (1991)
Takes on extra responsibilities in order to help coworkers when things get demanding at work.	Citizenship	3.04	Mossholder et al. (2005)
Takes time to listen to coworkers' problems and worries.	Citizenship	4.23	Williams & Anderson (1991)
Talked about the organization in positive ways.	Citizenship	4.61	Griffin et al. (2007)
Tells outsiders this is a good place to work.	Citizenship	4.80	Bettencourt et al. (2001)

Items matching posited construct			
Item Wording	Posited Construct	Mean d[a]	Citation
Tolerates temporary inconveniences without complaint.	Citizenship	2.42	McNeely & Meglino (1994)
Treating others with respect.	Citizenship	3.52	Bachrach & Jex (2000)
Tries to avoid creating problems for others.	Citizenship	3.15	Konovsky & Organ (1996)
Tries to cheer up coworkers who are having a bad day.	Citizenship	2.68	Mossholder et al. (2005)
Uses tact when dealing with others.	Citizenship	1.87	McNeely & Meglino (1994)
Voluntarily helps new employees settle into the job.	Citizenship	1.75	Moorman & Blakely (1995)
volunteered to orient or train others.	Citizenship	2.04	Crede et al. (2007)
Volunteering to carry out tasks not part of own job.	Citizenship	3.90	Coleman & Borman (2000)
Volunteering to do things without being asked.	Citizenship	2.17	Bachrach & Jex (2000)
Volunteers for things that are not required.	Citizenship	3.78	Smith et al. (1983)
Volunteers to do things for this work group.	Citizenship	5.31	Van Dyne & LePine (1998)
Willingly give your time to help others who have work-related problems.	Citizenship	4.76	Lee & Allen (2002)
Willingly helps others who have work related problems.	Citizenship	3.06	Podsakoff et al. (1990)
(Team members) do their part to ensure that their products will be delivered on time.	Task performance	3.65	Alper et al. (2000)
(Team members) put considerable effort into their jobs.	Task performance	3.46	Alper et al. (2000)
(Team members) take preventative action so that machinery and tools will not be damaged.	Task performance	3.77	Alper et al. (2000)
(Team members) work effectively.	Task performance	3.73	Alper et al. (2000)
Accept the responsibility of his job.	Task performance	5.02	Gibson et al. (1970)
Accuracy	Task performance	3.00	Stewart & Carson (1995)
Achieves the objectives of the job.	Task performance	2.82	Goodman & Svyantek (1999)
Adequately completes assigned duties.	Task performance	4.11	Eisenberger et al. (2001)
Adequately completes responsibilities.	Task performance	5.41	Van Dyne & LePine (1998)
Carried out the core parts of your job well.	Task performance	4.33	Griffin et al. (2007)
Completed your core tasks well using the standard procedures.	Task performance	4.14	Griffin et al. (2007)
Completes assignments and projects accurately and on time.	Task performance	3.03	Cleveland & Landy (1981)
Controlling costs in other areas of the company (order processing and preparation, delivery, etc) when taking sales orders.	Task performance	2.43	Behrman & Perreault (1982)
Dependability – maintains high standards of work and performs all needed work.	Task performance	9.04	Shore & Martin (1989)
Does he have enough required work knowledge? In other words, does he have sufficient technical know-how to carry out his job proficiently?	Task performance	3.28	Farh et al. (1991)

Items matching posited construct

Item Wording	Posited Construct	Mean d^a	Citation
Does he understand his job responsibilities? In other words, every task has its responsibilities and requirements. If not properly completed, it may incur some costs and losses. How well does he understand his responsibilities?	Task performance	3.26	Farh et al. (1991)
Does he understand his work contents? In other words, does he understand, on a daily basis, what he needs to carry out on his job and what equipment and tools he needs to use?	Task performance	4.11	Farh et al. (1991)
Does he understand his work objectives? In other words, how well does he understand the assigned work goals and the work requirements?	Task performance	3.57	Farh et al. (1991)
Engages in activities that will directly affect his/her performance evaluation.	Task performance	2.51	Williams & Anderson (1991)
Ensured your tasks were completed properly.	Task performance	4.20	Griffin et al. (2007)
Follow company policies and practices?	Task performance	4.07	Gibson et al. (1970)
Fulfills responsibilities specified in job description.-	Task performance	4.80	Eisenberger et al. (2001)
Fulfills the responsibilities specified in his/her job description.	Task performance	6.35	Van Dyne & LePine (1998)
How good is the quality of his work.	Task performance	3.78	Gibson et al. (1970)
How is his concentration level on his job? In other words, can he concentrate on and give his best to his job?	Task performance	2.99	Farh et al. (1991)
I am never disappointed in the quality of work that I receive from this subordinate.	Task performance	10.67	Wright et al. (1995)
I deliver higher quality than what can be expected.	Task performance	2.81	Dysvik & Kuvaas (2008)
I intentionally expend a great deal of effort in carrying out my job.	Task performance	1.59	Dysvik & Kuvaas (2008)
I never have to check up on this subordinate.	Task performance	8.91	Wright et al. (1995)
I often expend extra effort in carrying out my job.	Task performance	1.91	Dysvik & Kuvaas (2008)
I try to work as hard as possible.	Task performance	3.58	Dysvik & Kuvaas (2008)
Is competent in all areas of the job, handles tasks with proficiency.	Task performance	2.74	Goodman & Svyantek (1999)
Is he proficient in his work skills? In other words, is he familiar with the skills or techniques required on the job to perform effectively?	Task performance	4.02	Farh et al. (1991)
Keeps up-to-date in technical, professional, administrative areas.	Task performance	3.09	Cleveland & Landy (1981)
Know-how and judgment – needed to do the job correctly.	Task performance	8.77	Shore & Martin (1989)
Meets formal performance requirements of the job	Task performance	4.10	Eisenberger et al. (2001) Williams & Anderson (1991)
Meets performance expectations.	Task performance	5.22	Van Dyne & LePine (1998)

Items matching posited construct			
Item Wording	Posited Construct	Mean d^a	Citation
Perform repetitive tasks.	Task performance	2.25	Gibson et al. (1970)
Perform tasks requiring variety and change in methods.	Task performance	3.50	Gibson et al. (1970)
Performs tasks that are expected of him or her.	Task performance	5.29	Eisenberger et al. (2001)
Performs the tasks that are expected as part of the job.	Task performance	5.98	Van Dyne & LePine (1998)
Planning – makes good use of time and resources.	Task performance	8.74	Shore & Martin (1989)
Productivity	Task performance	3.60	Stewart & Carson (1995)
Providing accurate and complete paperwork related to orders, expenses, and other routine reports.	Task performance	2.73	Behrman & Perreault (1982)
Respect the authority of his supervisor.	Task performance	4.16	Gibson et al. (1970)
The quality of my work is top-notch.	Task performance	3.90	Dysvik & Kuvaas (2008)
This subordinate always gets things done on time.	Task performance	10.44	Wright et al. (1995)
This subordinate exhibits an ability to see the whole, its parts and relations, and use this to set priorities, plan, anticipate, and evaluate.	Task performance	11.58	Wright et al. (1995)
What do you think of his quality of work? In other words, are his work outcomes perfect, free of error, and of high accuracy?	Task performance	2.85	Farh et al. (1991)
What do you think of his work efficiency? In other words, what is your assessment of his work speed or quantity of work?	Task performance	3.43	Farh et al. (1991)
What do you think of his work performance? In other words, is he able to complete quality work on time?	Task performance	3.17	Farh et al. (1991)
Are you currently looking for another job?	Withdrawal	2.22	Kopelman et al. (1992)
Daydreaming.	Withdrawal	1.37	Lehman & Simpson (1992)
Deciding to quit the company.	Withdrawal	3.91	Farrell (1983)
During the next year, I will probably look for a new job outside the firm.	Withdrawal	3.12	Boroff & Lewin (1997)
Exhibits punctuality in arriving at work station on time after breaks. (RS)	Withdrawal	2.00	Eisenberger et al. (2001)
How often do you think of quitting your job?	Withdrawal	4.89	Hom et al. (1984)
I am planning to leave my job for another in the near future.	Withdrawal	5.65	Adams & Beehr (1998)
I am seriously considering quitting this firm for an alternate employer.	Withdrawal	3.39	Boroff & Lewin (1997)
I may quit my present job during the next twelve months.	Withdrawal	2.72	Dysvik & Kuvaas (2008)
I often think about quitting this job.	Withdrawal	1.73	Vigoda-Gadot (2007) , Schaubroeck et al. (1989)
I often think of quitting this job and finding another.	Withdrawal	6.97	Adams & Beehr (1998)
I think often about quitting my job.	Withdrawal	5.98	Hom et al. (1984)
I will likely actively look for a new job within the next three years.	Withdrawal	2.05	Dysvik & Kuvaas (2008)
I will probably look for a new job in the next year.	Withdrawal	2.66	Dysvik & Kuvaas (2008) , Schaubroeck et al. (1989)

Items matching posited construct			
Item Wording	Posited Construct	Mean d^a	Citation
I will probably not stay with this organization for much longer.	Withdrawal	1.49	Vigoda-Gadot (2007)
I would like to quit this job and find another in the near future.	Withdrawal	5.13	Adams & Beehr (1998)
If I could, I would move to another organization.	Withdrawal	1.32	Vigoda-Gadot (2007)
Intention to quit the job.	Withdrawal	4.11	Blau (1985)
Intention to search for another job.	Withdrawal	4.77	Blau (1985)
Lately, I have taken an interest in job offers in the newspaper.	Withdrawal	2.49	Vigoda-Gadot (2007)
Left work early without permission.	Withdrawal	3.89	Lehman & Simpson (1992) Aquino et al. (1999)
Let others do your work.	Withdrawal	1.49	Lehman & Simpson (1992)
Stayed home from work and said you were sick when you were not.	Withdrawal	1.97	Spector et al. (2006)
Thoughts of being absent.	Withdrawal	1.54	Lehman & Simpson (1992)
Thoughts of leaving current job.	Withdrawal	1.85	Lehman & Simpson (1992)

Note. [a] refers to the average *d* for the posited construct.

Item-Level Results: Items Matching a Non-Posited Construct

Items matching a non-posited construct				
Item Wording	Posited Construct	Mean d[a]	Non-posited Construct Result	Citation
Be absent from work without a legitimate excuse.	CWB	2.85	Withdrawal	Gruys & Sackett (2003)
Daydreamed rather than did your work.	CWB	0.17	Withdrawal	Fox & Spector (1999)
Did not do your share of the work in a cooperative group project.	CWB	1.23	Withdrawal	Hakstian et al. (2002)
During working hours, I read the newspaper or played computer games.	CWB	3.52	Withdrawal	Marcus et al. (2002)
Failure to return phone calls or respond to memos.	CWB	6.75	Withdrawal	Neuman & Baron (1998)
I exceeded a break for more than five minutes.	CWB	3.15	Withdrawal	Marcus et al. (2002)
I intentionally worked slowly or carelessly.	CWB	3.77	Withdrawal	Marcus et al. (2002)
I pretended to work to avoid a new work order.	CWB	3.72	Withdrawal	Marcus et al. (2002)
I shirked unpleasant tasks.	CWB	2.79	Withdrawal	Marcus et al. (2002)
I stayed away from work without excuse.	CWB	2.45	Withdrawal	Marcus et al. (2002)
I worked less in the absence of my supervisor.	CWB	3.15	Withdrawal	Marcus et al. (2002)
Intentionally come to work late.	CWB	2.90	Withdrawal	Gruys & Sackett (2003)
Intentionally do slow or sloppy work.	CWB	2.28	Withdrawal	Gruys & Sackett (2003)
Leaving the work area when the target enters.	CWB	5.34	Withdrawal	Neuman & Baron (1998)
Left work early without permission.	CWB	2.53	Withdrawal	Aquino et al. (1999) Lehman & Simpson (1992)
Lied about the number of hours I worked.	CWB	2.53	Withdrawal	Aquino et al. (1999)
Make personal long distance calls at work.	CWB	2.24	Withdrawal	Gruys & Sackett (2003)
Miss work without calling in.	CWB	2.62	Withdrawal	Gruys & Sackett (2003)
Play computer games during work time.	CWB	2.58	Withdrawal	Gruys & Sackett (2003)
Purposely dirtied or littered your place of work.	CWB	0.01	Withdrawal	Spector et al. (2006)
Reported others for breaking rules or policies.	CWB	0.00	Citizenship	Lehman & Simpson (1992)
Showed up for work feeling "hungover."	CWB	1.61	Withdrawal	Hakstian et al. (2002)
Showing up late for meetings run by target.	CWB	5.38	Withdrawal	Neuman & Baron (1998)
Spend time on the internet for reasons not related to work.	CWB	3.50	Withdrawal	Gruys & Sackett (2003)
Stayed home from work and said you were sick when you were not.	CWB	0.19	Withdrawal	Fox & Spector (1999)
Take a long lunch or coffee break without approval.	CWB	1.62	Withdrawal	Gruys & Sackett (2003)
There were occasions when I skipped work.	CWB	3.48	Withdrawal	Marcus et al. (2002)
Use sick leave when not really sick.	CWB	2.73	Withdrawal	Gruys & Sackett (2003)
Withheld work-related information from a co-worker.	CWB	-0.14	Withdrawal	Fox & Spector (1999)
Always focuses on what's wrong, rather than the positive side. (RS)	Citizenship	-0.07	Task performance	Podsakoff et al. (1990)
Always meeting or beating deadlines for completing work.	Citizenship	0.55	Task performance	Kwantes et al. (2008)
Always meets or beats deadlines for completing work.	Citizenship	0.26	Task performance	Moorman & Blakely (1995)

Items matching a non-posited construct				
Item Wording	Posited Construct	Mean d[a]	Non-posited Construct Result	Citation
Attempted to be punctual.	Citizenship	-0.12	Task performance	Crede et al. (2007)
Being willing to risk disapproval in order to express his/her beliefs about what's best for the company.	Citizenship	-0.63	Task performance	Kwantes et al. (2008)
Believes in giving an honest day's work for an honest day's pay.	Citizenship	2.08	Task performance	Podsakoff et al. (1990)
Coasts towards the end of the day. (RS)	Citizenship	-0.04	Task performance	Smith et al. (1983)
Completes work requested as soon as possible.	Citizenship	-0.01	Task performance	McNeely & Meglino (1994)
Conscientiously following company regulations and procedures.	Citizenship	0.67	Task performance	Kwantes et al. (2008)
Conscientiously follows guidelines for customer promotions.	Citizenship	2.48	Task performance	Bettencourt et al. (2001)
Did things a "good" employee would do.	Citizenship	-0.03	Task performance	Crede et al. (2007)
Does not take extra breaks	Citizenship	2.40	Task performance	Podsakoff et al. (1990) Smith et al. (1983)
Does not take unnecessary time off work.	Citizenship	2.65	Task performance	Smith et al. (1983)
Followed informal rules designed to maintain order.	Citizenship	-0.38	Task performance	Crede et al. (2007)
Following organization rules and procedures.	Citizenship	2.15	Task performance	Coleman & Borman (2000)
Follows customer-service guidelines with extreme care.	Citizenship	2.58	Task performance	Bettencourt et al. (2001)
Follows up in a timely manner to customer requests and problems.	Citizenship	2.09	Task performance	Bettencourt et al. (2001)
Gives advance notice if unable to attend work.	Citizenship	0.14	Task performance	McNeely & Meglino (1994)
Is one of my most conscientious employees.	Citizenship	1.47	Task performance	Podsakoff et al. (1990)
Keeping up with developments in the company.	Citizenship	0.18	Task performance	Kwantes et al. (2008)
Not spending time in non-work-related conversation.	Citizenship	0.72	Task performance	Bachrach & Jex (2000)
Performing duties with extra special care.	Citizenship	0.98	Task performance	Kwantes et al. (2008)
Performs duties with unusually few mistakes.	Citizenship	0.30	Task performance	Bettencourt et al. (2001)
Returning phone calls and responds to other messages and requests for information promptly.	Citizenship	-0.15	Task performance	Kwantes et al. (2008)
Takes undeserved work breaks. (RS)	Citizenship	1.21	Task performance	Williams & Anderson (1991)
Trying to make the organization the best it can be.	Citizenship	0.74	Task performance	Kwantes et al. (2008)
Uses resources without unnecessary waste.	Citizenship	0.28	Task performance	McNeely & Meglino (1994)
Uses work time wisely.	Citizenship	-0.01	Task performance	McNeely & Meglino (1994)

Items matching a non-posited construct				
Item Wording	Posited Construct	Mean d[a]	Non-posited Construct Result	Citation
Using own judgment to assess what is best for the organization.	Citizenship	0.42	Task performance	Kwantes et al. (2008)
Working hard with extra effort.	Citizenship	1.53	Task performance	Coleman & Borman (2000)
Working late or through lunch.	Citizenship	-0.18	Task performance	Kwantes et al. (2008)
(Team members) are wasteful in how they use their work materials.	Task performance	-2.01	CWB	Alper et al. (2000)
(Team members) come up with ideas on how to reduce costs.	Task performance	1.96	Citizenship	Alper et al. (2000)
(Team members) search for ways to be more productive.	Task performance	2.05	Citizenship	Alper et al. (2000)
Acting as a special resource to other departments that need your assistance.	Task performance	0.89	Citizenship	Behrman & Perreault (1982)
Become overexcited.	Task performance	-1.55	CWB	Gibson et al. (1970)
Become upset and unhappy.	Task performance	-4.01	Withdrawal	Gibson et al. (1970)
Come late for work.	Task performance	-3.54	Withdrawal	Gibson et al. (1970)
Consider the employee to be highly effective.	Task performance	2.36	Citizenship	Bolino & Turnley (2003)
Convincing customers that you understand their unique problems and concerns.	Task performance	1.04	Citizenship	Behrman & Perreault (1982)
Cooperation - exchanges information with coworkers to facilitate individual member and group performance.	Task performance	6.67	Citizenship	Shore & Martin (1989)
Get along with his coworkers.	Task performance	2.08	Citizenship	Gibson et al. (1970)
Has the ability to discover the skills and limitations of subordinates.	Task performance	1.12	Citizenship	Worbois (1975)
Is he enthusiastic about his job? In other words, will he still be enthusiastic about his present job if enthusiasm is not required by company rules or regulations?	Task performance	1.35	Citizenship	Farh et al. (1991)
Is occasionally careless in carrying out management's policies.	Task performance	-2.05	CWB	Worbois (1975)
Knowing the design and specifications of company products.	Task performance	0.90	Citizenship	Behrman & Perreault (1982)
Maintaining company specified records that are accurate, complete, and up to date.	Task performance	1.28	Citizenship	Behrman & Perreault (1982)
On the job, this subordinate exhibits a willingness to go beyond what the situation requires and to act before being asked.	Task performance	9.13	Citizenship	Wright et al. (1995)
Recommending on your own initiative how company operations and procedures can be improved.	Task performance	0.80	Citizenship	Behrman & Perreault (1982)
Seem bothered by something.	Task performance	-1.58	Withdrawal	Gibson et al. (1970)
Seem to tire easily.	Task performance	-1.55	Withdrawal	Gibson et al. (1970)

Items matching a non-posited construct				
Item Wording	Posited Construct	Mean d^a	Non-posited Construct Result	Citation
Stay absent from work.	Task performance	-3.68	Withdrawal	Gibson et al. (1970)
This subordinate gets along well with co-workers.	Task performance	5.24	Citizenship	Wright et al. (1995)
This worker meets all the formal performance requirements of the job.	Task performance	1.45	Citizenship	Janssen & Van Yperen (2004).
Using established contacts to develop new customers.	Task performance	1.08	Citizenship	Behrman & Perreault (1982)
Wander from subject to subject when talking.	Task performance	-2.62	Withdrawal	Gibson et al. (1970)
Evaluates the performance and capabilities of subordinates objectively and realistically.	Task performance	1.34	Citizenship	Cleveland & Landy (1981)
Helps subordinates to work up to their potential.	Task performance	1.60	Citizenship	Cleveland & Landy (1981)
Maintains a positive work relationship with all individuals in the organization.	Task performance	1.34	Citizenship	Cleveland & Landy (1981)
Stimulates subordinates to produce high quality work.	Task performance	1.35	Citizenship	Cleveland & Landy (1981)
Treats subordinates fairly and consistently.	Task performance	1.34	Citizenship	Cleveland & Landy (1981)
How do you rate your chances of still working for this company after 3 months, 6 months, 1 year, and 2 years.	Withdrawal	-1.59	Citizenship	Kopelman et al. (1992)
How important is it to your personally that you spend your career in this organization rather than some other organization?	Withdrawal	-2.15	Citizenship	Shore & Martin (1989)
Taken supplies or equipment without permission.	Withdrawal	-0.19	CWB	Lehman & Simpson (1992)

Note. [a] refers to the average *d* for the posited construct.

Item-Level Results: Items Matching Multiple (Posited and Non-Posited)Constructs

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Ability to take orders.	Citizenship	2.11	Task & Citizenship	Stewart & Carson (1995)
Ability to work with others.	Citizenship	2.98	Task & Citizenship	Stewart & Carson (1995)
Adheres to informal rules devised to maintain order.	Citizenship	2.43	Task & Citizenship	Williams & Anderson (1991)
Altruism in helping individual organization members.	Citizenship	3.17	Task & Citizenship	Coleman & Borman (2000)
Always treats company property with care.	Citizenship	2.54	Task & Citizenship	Konovsky & Organ (1996)
Anticipating and solving problems before you have to.	Citizenship	1.54	Task & Citizenship	Bachrach & Jex (2000)
Arrives at work on time.	Citizenship	0.98	Task & Citizenship	McNeely & Meglino (1994)
Arriving early to prepare for the day.	Citizenship	1.13	Task & Citizenship	Kwantes et al. (2008)
Assisted people with heavy workloads.	Citizenship	1.16	Task & Citizenship	Crede et al. (2007)
Assisting supervisor with his or her work.	Citizenship	2.26	Task & Citizenship	Kwantes et al. (2008)
Assists supervisor with his/her work (when not asked).	Citizenship	2.39	Task & Citizenship	Williams & Anderson (1991)
Attempted to meet deadlines.	Citizenship	1.12	Task & Citizenship	Crede et al. (2007)
Attendance at work is above average.	Citizenship	2.05	Task & Citizenship	Konovsky & Organ (1996)
Attendance at work is above the norm.	Citizenship	4.33	Task & Citizenship	Smith et al. (1983)
Attending meetings that are not mandatory, but that are considered important by others.	Citizenship	1.81	Task & Citizenship	Bachrach & Jex (2000)
Attitude	Citizenship	1.15	Task & Citizenship	Stewart & Carson (1995)
Being mindful of how your behavior affects other people's jobs.	Citizenship	2.75	Task & Citizenship	Bachrach & Jex (2000)
Being polite to coworkers and supervisors.	Citizenship	1.49	Task & Citizenship	Bachrach & Jex (2000)
Being punctual every day.	Citizenship	1.07	Task & Citizenship	Kwantes et al. (2008)
Being punctual every single day, regardless of weather, traffic, etc.	Citizenship	2.36	Task & Citizenship	Bachrach & Jex (2000)
Checking in with other employees about what you are doing or where you are going.	Citizenship	1.98	Task & Citizenship	Bachrach & Jex (2000)
Coming to work early if needed.	Citizenship	2.39	Task & Citizenship	Bachrach & Jex (2000) Kwantes et al. (2008)
Complains about insignificant things at work. (RS)	Citizenship	1.67	Task & Citizenship	Williams & Anderson (1991)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Complied with orders with orders and regulations.	Citizenship	1.21	Task & Citizenship	Crede et al. (2007)
Complied with organizational values and policies.	Citizenship	0.88	Task & Citizenship	Crede et al. (2007)
Complies with organizational policies and procedures.	Citizenship	1.04	Task & Citizenship	McNeely & Meglino (1994)
Conserves and protects organizational property.	Citizenship	3.06	Task & Citizenship	Williams & Anderson (1991)
Considers the effects of his/her actions on coworkers.	Citizenship	2.48	Task & Citizenship	Konovsky & Organ (1996)
Consults with me or other people who might be affected by his/her actions or decisions.	Citizenship	2.26	Task & Citizenship	Konovsky & Organ (1996)
Covered for people who are absent.	Citizenship	1.23	Task & Citizenship	Crede et al. (2007)
Defending the organization when outsiders criticize it.	Citizenship	0.95	Task & Citizenship	Kwantes et al. (2008)
Demonstrate concern about the image of the organization.	Citizenship	3.00	Task & Citizenship	Lee & Allen (2002)
Demonstrating respect for organizational rules and policies.	Citizenship	2.87	Task & Citizenship	Coleman & Borman (2000)
Did more work than required.	Citizenship	1.42	Task & Citizenship	Lehman & Simpson (1992)
Displayed loyalty to the organization.	Citizenship	0.77	Task & Citizenship	Crede et al. (2007)
Displayed respect for authority.	Citizenship	1.40	Task & Citizenship	Crede et al. (2007)
Does not abuse the rights of others.	Citizenship	1.71	Task & Citizenship	Podsakoff et al. (1990)
Does not complain about work assignments.	Citizenship	2.47	Task & Citizenship	Konovsky & Organ (1996)
Does not spend time in idle conversations.	Citizenship	2.98	Task & Citizenship	Smith et al. (1983)
Doing the highest quality work possible, even if it exceeds what others expect.	Citizenship	1.74	Task & Citizenship	Bachrach & Jex (2000)
Endorsing, supporting, or defending organizational objectives.	Citizenship	2.79	Task & Citizenship	Coleman & Borman (2000)
Engaging in self-development to improve one's own effectiveness.	Citizenship	2.94	Task & Citizenship	Coleman & Borman (2000)
Engaging responsibly in meetings and group activities.	Citizenship	3.03	Task & Citizenship	Coleman & Borman (2000)
Expresses loyalty toward the organization.	Citizenship	2.79	Task & Citizenship	McNeely & Meglino (1994)
Expresses resentment with any changes introduced by management. (RS)	Citizenship	0.63	Task & Citizenship	Konovsky & Organ (1996)
For issues that may have serious consequences, expresses opinions honestly even when others may disagree.	Citizenship	1.15	Task & Citizenship	Moorman & Blakely (1995)
For issues that may have serious consequences, expressing opinions honestly even when others may disagree.	Citizenship	0.67	Task & Citizenship	Kwantes et al. (2008)

Items matching multiple constructs

Item Wording	Posited Construct	Mean d^a	Overlapping Construct	Citation
Gives advance notice when unable to come to work.	Citizenship	1.85	Task & Citizenship	Williams & Anderson (1991) Konovsky & Organ (1996)
Giving of your time to help others who have work-related problems.	Citizenship	2.11	Task & Citizenship	Bachrach & Jex (2000)
Goes out of way to help new employees.	Citizenship	2.30	Task & Citizenship	Williams & Anderson (1991)
Grooming	Citizenship	1.93	Task & Citizenship	Stewart & Carson (1995)
Helped coworkers or supervisor.	Citizenship	1.08	Task & Citizenship	Crede et al. (2007)
Helping other organization members.	Citizenship	2.66	Task & Citizenship	Coleman & Borman (2000)
Helping others who have been absent.	Citizenship	0.58	Task & Citizenship	Kwantes et al. (2008)
Helping to make others more productive.	Citizenship	1.80	Task & Citizenship	Kwantes et al. (2008)
I frequently come up with new ideas or new work methods to perform my task.	Citizenship	0.95	Task & Citizenship	Choi (2007)
I often change the way I work to improve efficiency.	Citizenship	0.39	Task & Citizenship	Choi (2007)
I often suggest changes to unproductive rules or policies.	Citizenship	0.55	Task & Citizenship	Choi (2007)
I often suggest work improvement ideas to others.	Citizenship	1.13	Task & Citizenship	Choi (2007)
Informing others of job related problems they do not know.	Citizenship	0.73	Task & Citizenship	Kwantes et al. (2008)
Informing others of what you are doing in order to prevent unanticipated problems.	Citizenship	1.92	Task & Citizenship	Bachrach & Jex (2000)
Informing your supervisor a few days ahead of time if you need to miss a day.	Citizenship	1.72	Task & Citizenship	Bachrach & Jex (2000)
Informs me before taking any important actions.	Citizenship	2.64	Task & Citizenship	Konovsky & Organ (1996)
Is able to tolerate occasional inconvenience when they arise.	Citizenship	2.07	Task & Citizenship	Konovsky & Organ (1996)
Is always on time.	Citizenship	2.58	Task & Citizenship	Konovsky & Organ (1996)
Is receptive to new ideas.	Citizenship	1.33	Task & Citizenship	McNeely & Meglino (1994)
Keep up with developments in the organization.	Citizenship	3.57	Task & Citizenship	Lee & Allen (2002)
Keeping up with changes and developments in the university.	Citizenship	1.89	Task & Citizenship	Bachrach & Jex (2000)
Keeps abreast of changes in the organization.	Citizenship	1.89	Task & Citizenship	Podsakoff et al. (1990)
Listens to coworkers when they have to get something off their chest.	Citizenship	2.19	Task & Citizenship	Mossholder et al. (2005)
Looking for work to do when finished with assigned work.	Citizenship	1.81	Task & Citizenship	Bachrach & Jex (2000)
Makes constructive suggestions for service improvement.	Citizenship	3.27	Task & Citizenship	Bettencourt et al. (2001)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d^{a}	Overlapping Construct	Citation
Never abuses his/her rights and privileges.	Citizenship	2.66	Task & Citizenship	Konovsky & Organ (1996)
Not blowing small problems out of proportion.	Citizenship	1.44	Task & Citizenship	Bachrach & Jex (2000)
Not coasting toward the end of the day when there is not much work to do.	Citizenship	0.61	Task & Citizenship	Bachrach & Jex (2000)
Not consuming a lot of time complaining about things that cannot be changed.	Citizenship	2.43	Task & Citizenship	Bachrach & Jex (2000)
Not finding fault with things that the university does.	Citizenship	1.58	Task & Citizenship	Bachrach & Jex (2000)
Not spending time on personal telephone conversations.	Citizenship	1.86	Task & Citizenship	Bachrach & Jex (2000)
Not taking extra breaks, even during slow periods.	Citizenship	2.16	Task & Citizenship	Bachrach & Jex (2000)
Not taking time off from work, even if you have extra sick days to use.	Citizenship	1.81	Task & Citizenship	Bachrach & Jex (2000)
Not taking unnecessary time off of work.	Citizenship	0.83	Task & Citizenship	Kwantes et al. (2008)
Obeying rules, regulations and procedures.	Citizenship	1.64	Task & Citizenship	Kwantes et al. (2008)
Obeying rules, regulations, and procedures, even if others do not do so.	Citizenship	2.43	Task & Citizenship	Bachrach & Jex (2000)
Obeys company rules and regulations even when no one is watching.	Citizenship	2.57	Task & Citizenship	Podsakoff et al. (1990)
Offers ideas to improve the functioning of the department.	Citizenship	1.94	Task & Citizenship	McNeely & Meglino (1994)
Often motivating others to express their ideas and opinions.	Citizenship	1.09	Task & Citizenship	Kwantes et al. (2008)
Participating responsibly in the organization.	Citizenship	2.81	Task & Citizenship	Coleman & Borman (2000)
Pays no attention to announcements, messages, or printed material that provide information about the company. (RS)	Citizenship	0.47	Task & Citizenship	Konovsky & Organ (1996)
Performing duties with unusually few errors.	Citizenship	0.77	Task & Citizenship	Kwantes et al. (2008)
Performs his/her duties with unusually few errors.	Citizenship	0.72	Task & Citizenship	Moorman & Blakely (1995)
Performs his/her job duties with extra-special care.	Citizenship	0.91	Task & Citizenship	Moorman & Blakely (1995)
Persisting with enthusiasm on own job.	Citizenship	2.33	Task & Citizenship	Coleman & Borman (2000)
Providing extra service or help to customers.	Citizenship	3.13	Task & Citizenship	Coleman & Borman (2000)
Punctuality.	Citizenship	4.06	Task & Citizenship	Smith et al. (1983)
Putting forth extra effort on own job.	Citizenship	1.86	Task & Citizenship	Coleman & Borman (2000)
Rarely misses work even when he/she has a legitimate reason for doing so.	Citizenship	0.20	Task & Citizenship	Moorman & Blakely (1995)
Reading and keeping up with university announcements and memos.	Citizenship	2.21	Task & Citizenship	Bachrach & Jex (2000)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d^a	Overlapping Construct	Citation
Reads and keeps up with organization announcements, memos, and so on.	Citizenship	2.08	Task & Citizenship	Podsakoff et al. (1990)
Respects the rights and privileges of others.	Citizenship	2.70	Task & Citizenship	Konovsky & Organ (1996)
Shared personal resources with others.	Citizenship	0.89	Task & Citizenship	Crede et al. (2007)
Staying with the organization despite hardships or difficult conditions.	Citizenship	3.04	Task & Citizenship	Coleman & Borman (2000)
Stays informed about developments in the company.	Citizenship	3.04	Task & Citizenship	Konovsky & Organ (1996)
Suggested improvements in functioning of organizational unity.	Citizenship	0.66	Task & Citizenship	Crede et al. (2007)
Takes action to protect the organization from potential problems.	Citizenship	1.87	Task & Citizenship	McNeely & Meglino (1994)
Takes home brochures to read up on products and services.	Citizenship	2.39	Task & Citizenship	Bettencourt et al. (2001)
Takes steps to try to prevent problems with other workers.	Citizenship	2.83	Task & Citizenship	Podsakoff et al. (1990)
Taking steps to prevent problems with other employees.	Citizenship	2.39	Task & Citizenship	Bachrach & Jex (2000)
Tends to make "mountains out of molehills." (RS)	Citizenship	0.79	Task & Citizenship	Podsakoff et al. (1990)
Thinks only about his/her work problems, not others. (RS)	Citizenship	0.56	Task & Citizenship	Konovsky & Organ (1996)
Touching base with coworkers/supervisors about the progress with work.	Citizenship	1.76	Task & Citizenship	Bachrach & Jex (2000)
Tries to avoid creating problems for coworkers.	Citizenship	2.22	Task & Citizenship	Podsakoff et al. (1990)
Tries to make the best of the situation, even when there are problems.	Citizenship	2.60	Task & Citizenship	Konovsky & Organ (1996)
Trying to make the university the best it can be.	Citizenship	1.80	Task & Citizenship	Bachrach & Jex (2000)
Turning in budgets, sales projections, expense reports, etc. earlier than is required.	Citizenship	0.73	Task & Citizenship	Kwantes et al. (2008)
Using your own judgment to assess what is best for your office or the university.	Citizenship	1.47	Task & Citizenship	Bachrach & Jex (2000)
Volunteered to work overtime.	Citizenship	1.09	Task & Citizenship	Lehman & Simpson (1992)
Working late or through a lunch break if there is a lot of work to do.	Citizenship	1.47	Task & Citizenship	Bachrach & Jex (2000)
(Team members) actively engage in reviewing their work so that they can improve it.	Task performance	2.91	Task & Citizenship	Alper et al. (2000)
(Team members) are committed to producing quality work.	Task performance	2.97	Task & Citizenship	Alper et al. (2000)
(Team members) are concerned about the quality of their work.	Task performance	3.19	Task & Citizenship	Alper et al. (2000)
(Team members) come up with ideas on how to produce higher-quality work.	Task performance	2.34	Task & Citizenship	Alper et al. (2000)
(Team members) do not abuse their sick leave policy.	Task performance	1.98	Task & Citizenship	Alper et al. (2000)

Items matching multiple constructs

Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
(Team members) have successfully implemented ideas to come up with higher quality.	Task performance	2.09	Task & Citizenship	Alper et al. (2000)
(Team members) have successfully implemented ideas to reduce costs.	Task performance	2.26	Task & Citizenship	Alper et al. (2000)
(Team members) have successfully implemented plans to be more productive.	Task performance	2.54	Task & Citizenship	Alper et al. (2000)
(Team members) meet or exceed their productivity requirements.	Task performance	2.50	Task & Citizenship	Alper et al. (2000)
(Team members) take good care of their tools and machinery.	Task performance	2.84	Task & Citizenship	Alper et al. (2000)
Accept the direction of his supervisor?	Task performance	3.61	Task & Citizenship	Gibson et al. (1970)
Adapt to changes in procedures or methods.	Task performance	3.86	Task & Citizenship	Gibson et al. (1970)
Always gets reports in on time.	Task performance	3.54	Task & Citizenship	Worbois (1975)
Appears suitable for a higher level role.	Task performance	1.23	Task & Citizenship	Goodman & Svyantek (1999)
Arranging sales call patterns and frequency to cover your territory economically.	Task performance	2.25	Task & Citizenship	Behrman & Perreault (1982)
Being able to detect causes of operating failure of company products.	Task performance	2.10	Task & Citizenship	Behrman & Perreault (1982)
Carrying our company policies, procedures, and programs for providing information.	Task performance	1.69	Task & Citizenship	Behrman & Perreault (1982)
Communicating your sales presentation clearly and concisely.	Task performance	1.54	Task & Citizenship	Behrman & Perreault (1982)
Demonstrates expertise in all job-related tasks.	Task performance	1.70	Task & Citizenship	Goodman & Svyantek (1999)
Does he understand the work methods? In other words, does he understand the steps, procedures, and methods required for carrying out his job?	Task performance	2.94	Task & Citizenship	Farh et al. (1991)
Does not take criticism in a personal way.	Task performance	0.84	Task & Citizenship	Worbois (1975)
Entertaining only when it is clearly in the best interest of the company to do so.	Task performance	0.77	Task & Citizenship	Behrman & Perreault (1982)
Exceeding all sales targets and objectives for your territory during the year.	Task performance	1.66	Task & Citizenship	Behrman & Perreault (1982)
Fails to perform essential duties. (RS)	Task performance	2.72	Task & Citizenship	Williams & Anderson (1991)
Feel the employee has been effectively fulfilling his/her roles and responsibilities.	Task performance	3.22	Task & Citizenship	Bolino & Turnley (2003)
Follow standard work rules and procedures.	Task performance	4.10	Task & Citizenship	Gibson et al. (1970)
Fulfills all the requirements of the job.	Task performance	1.14	Task & Citizenship	Goodman & Svyantek (1999)
Generating a high level of dollar sales.	Task performance	2.46	Task & Citizenship	Behrman & Perreault (1982)

Items matching multiple constructs

Item Wording	Posited Construct	Mean d^a	Overlapping Construct	Citation
Get along with his supervisors.	Task performance	2.49	Task & Citizenship	Gibson et al. (1970)
Give him a pay raise.	Task performance	2.32	Task & Citizenship	Gibson et al. (1970)
How good is the quantity of his work.	Task performance	2.40	Task & Citizenship	Gibson et al. (1970)
I almost always put in more effort than what can be characterized as an acceptable level of effort.	Task performance	2.25	Task & Citizenship	Dysvik & Kuvaas (2008)
Identifying and selling to major accounts in your territory.	Task performance	2.44	Task & Citizenship	Behrman & Perreault (1982)
If I have to be out of the warehouse for an extended period of time, I can rest assured that this subordinate will continue to be productive.	Task performance	7.98	Task & Citizenship	Wright et al. (1995)
Is continually searching for ways of making savings.	Task performance	1.97	Task & Citizenship	Worbois (1975)
Is willing to make changes.	Task performance	2.71	Task & Citizenship	Worbois (1975)
Keeping abreast of your company's production and technological developments.	Task performance	2.20	Task & Citizenship	Behrman & Perreault (1982)
Keeps essential records.	Task performance	2.11	Task & Citizenship	Worbois (1975)
Knowing the applications and functions of company products.	Task performance	1.18	Task & Citizenship	Behrman & Perreault (1982)
Listening attentively to identify and understand the real concerns of your customer.	Task performance	1.24	Task & Citizenship	Behrman & Perreault (1982)
Making effective use of audiovisual aids (charts, tables, and the like) to improve your sales presentation.	Task performance	1.18	Task & Citizenship	Behrman & Perreault (1982)
Making sales of those products with the highest profit margins.	Task performance	1.70	Task & Citizenship	Behrman & Perreault (1982)
Meets criteria for performance.	Task performance	1.29	Task & Citizenship	Goodman & Svyantek (1999)
Neglects aspects of the job he/she is obligated to perform. (RS)	Task performance	2.05	Task & Citizenship	Williams & Anderson (1991)
On the job, this subordinate exhibits an underlying concern for doing things or tasks better, for improving situations.	Task performance	10.09	Task & Citizenship	Wright et al. (1995)
On the job, this subordinate exhibits zeal about the job and a consequent willingness to work hard and energetically.	Task performance	9.59	Task & Citizenship	Wright et al. (1995)
Operating within the budgets set by the company.	Task performance	1.86	Task & Citizenship	Behrman & Perreault (1982)
Plans and organizes to achieve objectives of the job and meet deadlines.	Task performance	0.91	Task & Citizenship	Goodman & Svyantek (1999)
Possesses so much knowledge and skill in the jobs supervised that he/she is looked up to and respected by subordinates.	Task performance	2.54	Task & Citizenship	Worbois (1975)

Items matching multiple constructs

Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Producing a high market share for your company in your territory.	Task performance	1.30	Task & Citizenship	Behrman & Perreault (1982)
Producing sales or blanket contracts with long-term profitability.	Task performance	1.58	Task & Citizenship	Behrman & Perreault (1982)
Quickly generating sales of new company products.	Task performance	2.36	Task & Citizenship	Behrman & Perreault (1982)
Spending travel and lodging money carefully.	Task performance	1.87	Task & Citizenship	Behrman & Perreault (1982)
Submitting required reports on time.	Task performance	2.21	Task & Citizenship	Behrman & Perreault (1982)
The overall level of performance they observe for the employee is excellent.	Task performance	3.26	Task & Citizenship	Bolino & Turnley (2003)
This subordinate's work habits (tardiness, length of breaks, etc.) are exemplary.	Task performance	8.01	Task & Citizenship	Wright et al. (1995)
This worker always completes the duties specified in his/her job description.	Task performance	2.04	Task & Citizenship	Janssen & Van Yperen (2004)
This worker fulfills all responsibilities required by his/her job.	Task performance	1.26	Task & Citizenship	Janssen & Van Yperen (2004)
This worker never neglects aspects of the job that he/she is obligated to perform.	Task performance	1.51	Task & Citizenship	Janssen & Van Yperen (2004)
Transfer him to a job at a higher level.	Task performance	2.75	Task & Citizenship	Gibson et al. (1970)
Using business gift and promotional allowances responsibly.	Task performance	2.31	Task & Citizenship	Behrman & Perreault (1982)
Using expense accounts with integrity.	Task performance	1.96	Task & Citizenship	Behrman & Perreault (1982)
View the employee as superior to other employees the supervisor has worked with or supervised before.	Task performance	1.79	Task & Citizenship	Bolino & Turnley (2003)
When possible, troubleshooting system problems and conducting minor field service to correct product misapplications and/or product failures.	Task performance	2.04	Task & Citizenship	Behrman & Perreault (1982)
Work as a member of a team.	Task performance	4.16	Task & Citizenship	Gibson et al. (1970)
Working out solutions to a customer's questions or objections.	Task performance	1.73	Task & Citizenship	Behrman & Perreault (1982)
Communicates effectively in both written and oral form.	Task performance	2.07	Task & Citizenship	Cleveland & Landy (1981)
Delegates work effectively and provides appropriate follow-up to insure proper completion.	Task performance	2.85	Task & Citizenship	Cleveland & Landy (1981)
Generates new/innovative ideas and suggestions that contribute to meeting organizational objectives.	Task performance	2.43	Task & Citizenship	Cleveland & Landy (1981)
Keeps all individuals in the organization informed of matters related to them.	Task performance	2.48	Task & Citizenship	Cleveland & Landy (1981)
Recognizes work priorities and devotes appropriate time and resources to each task.	Task performance	2.17	Task & Citizenship	Cleveland & Landy (1981)
Responds positively to constructive criticism and suggestions for work improvements.	Task performance	2.71	Task & Citizenship	Cleveland & Landy (1981)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d^a	Overlapping Construct	Citation
Seeks knowledge and skill beyond present assignment to prepare for greater responsibility.	Task performance	1.66	Task & Citizenship	Cleveland & Landy (1981)
Used sound and logical approach to define, analyze, and solve problems.	Task performance	2.35	Task & Citizenship	Cleveland & Landy (1981)
Are you currently employed by the same organization (as two years ago)?	Withdrawal	-0.10	Task & Citizenship	Kopelman et al. (1992)
Attendance at work is above the norm	Withdrawal	-2.04	Task & Citizenship	Eisenberger et al. (2001)
Gives advance notice when unable to come to work.	Withdrawal	-1.95	Task & Citizenship	Eisenberger et al. (2001)
If you have your own way, will you be working for this company 5 years from now.	Withdrawal	-1.99	Task & Citizenship	Kopelman et al. (1992)
Which of the following statements most clearly reflects your feelings about your future with this organization in the next year? (RS)	Withdrawal	-0.86	Task & Citizenship	Shore & Martin (1989)
"Talked back" to his or her boss.	CWB	0.96	Citizenship & CWB	Skarlicki & Folger (1997)
Publicly embarrassed someone at work.	CWB	1.10	Citizenship & CWB	Bennett & Robinson (2000)
Is the classic "squeaky wheel" that always needs greasing. (RS)	Citizenship	0.08	Citizenship & CWB	Podsakoff et al. (1990)
Finds causes of discontent among subordinates.	Task performance	-0.72	Citizenship & CWB	Worbois (1975)
Volunteering without being asked.	Citizenship	1.37	Citizenship & Withdrawal	Kwantes et al. (2008)
If you were completely free to choose, would you prefer or not prefer to continue working for this organization? (RS)	Withdrawal	0.72	Citizenship & Withdrawal	Shore & Martin (1989)
How persistent is he on his job? In other words, does he grow tired and tardy on his present job?	Task performance	0.58	Task & Withdrawal	Farh et al. (1991)
Aside from any paid vacation and holidays, how many days of scheduled work have you missed in the past month?	Withdrawal	0.49	Task & Withdrawal	Beehr & Gupta (1978)
During the last 2 weeks, how many days did you arrive at work late?	Withdrawal	0.79	Task & Withdrawal	Beehr & Gupta (1978)
Allowed yourself to be paid for more hours than were worked.	CWB	1.79	CWB & Withdrawal	Hakstian et al. (2002)
Alter time card to get paid for more hours than you worked.	CWB	2.90	CWB & Withdrawal	Gruys & Sackett (2003)
Attempted to pass on own work to others.	CWB	0.92	CWB & Withdrawal	Crede et al. (2007)
Been nasty to a fellow worker.	CWB	1.32	CWB & Withdrawal	Fox & Spector (1999)
Blamed co-workers for errors that you made.	CWB	1.88	CWB & Withdrawal	Fox & Spector (1999)
Blamed someone at work for error you made.	CWB	0.59	CWB & Withdrawal	Spector et al. (2006)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d^a	Overlapping Construct	Citation
Called in sick when I was not really ill.	CWB	3.70	CWB & Withdrawal	Aquino et al. (1999)
Called in sick when not ill.	CWB	0.64	CWB & Withdrawal	Skarlicki & Folger (1997)
Came to work late or left early.	CWB	3.93	CWB & Withdrawal	Hakstian et al. (2002)
Causing others to delay action on important matters.	CWB	7.13	CWB & Withdrawal	Neuman & Baron (1998)
Come in late to work without permission.	CWB	1.41	CWB & Withdrawal	Bennett & Robinson (2000)
Come to work under the influence of alcohol.	CWB	2.98	CWB & Withdrawal	Gruys & Sackett (2003)
Come to work under the influence of drugs.	CWB	4.03	CWB & Withdrawal	Gruys & Sackett (2003)
Complained about insignificant things at work.	CWB	0.73	CWB & Withdrawal	Fox & Spector (1999)
Conduct personal business during work time.	CWB	3.42	CWB & Withdrawal	Gruys & Sackett (2003)
Damaged property belonging to my employer.	CWB	1.34	CWB & Withdrawal	Robinson & O' Leary-Kelly (1998)
Deliberately bent or broke a rule(s).	CWB	1.09	CWB & Withdrawal	Robinson & O' Leary-Kelly (1998)
Did slow or sloppy work.	CWB	3.22	CWB & Withdrawal	Hakstian et al. (2002)
Did something that harmed my employer or boss.	CWB	1.47	CWB & Withdrawal	Robinson & O' Leary-Kelly (1998)
Did work badly, incorrectly or slowly on purpose.	CWB	1.53	CWB & Withdrawal	Robinson & O' Leary-Kelly (1998)
Engage in alcohol consumption on the job.	CWB	2.89	CWB & Withdrawal	Gruys & Sackett (2003)
Fail to read the manual outlining safety procedures.	CWB	3.07	CWB & Withdrawal	Gruys & Sackett (2003)
Failed to help a coworker.	CWB	0.62	CWB & Withdrawal	Fox & Spector (1999)
Felt good when something went wrong.	CWB	1.47	CWB & Withdrawal	Fox & Spector (1999)
For my own business, I left my workplace without permission.	CWB	4.60	CWB & Withdrawal	Marcus et al. (2002)
Give away goods or services for free.	CWB	2.33	CWB & Withdrawal	Gruys & Sackett (2003)
Have your performance affected due to a hangover from alcohol.	CWB	1.97	CWB & Withdrawal	Gruys & Sackett (2003)
Have your performance affected due to a hangover from drugs.	CWB	3.27	CWB & Withdrawal	Gruys & Sackett (2003)
I arrived at work at least 10 minutes late.	CWB	2.62	CWB & Withdrawal	Marcus et al. (2002)
I asked inexperienced coworkers to do awkward jobs for me.	CWB	2.47	CWB & Withdrawal	Marcus et al. (2002)
I came to work late or went home early.	CWB	3.88	CWB & Withdrawal	Marcus et al. (2002)
I came to work with a hangover from the night before.	CWB	3.93	CWB & Withdrawal	Marcus et al. (2002)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d^a	Overlapping Construct	Citation
I did not prepare for important jobs sufficiently.	CWB	1.82	CWB & Withdrawal	Marcus et al. (2002)
I had others clock in or out for me.	CWB	4.24	CWB & Withdrawal	Marcus et al. (2002)
I left my workplace during working hours without permission.	CWB	4.13	CWB & Withdrawal	Marcus et al. (2002)
I left my workplace to avoid a new work order.	CWB	2.64	CWB & Withdrawal	Marcus et al. (2002)
I stayed away from work, although I was actually healthy.	CWB	2.71	CWB & Withdrawal	Marcus et al. (2002)
I suspended work to smoke a cigarette or chat with others.	CWB	2.81	CWB & Withdrawal	Marcus et al. (2002)
I took a walk within the firm to shirk working.	CWB	2.72	CWB & Withdrawal	Marcus et al. (2002)
I used working time for private affairs.	CWB	3.27	CWB & Withdrawal	Marcus et al. (2002)
I went home at least 10 minutes before time.	CWB	3.43	CWB & Withdrawal	Marcus et al. (2002)
Ignored a supervisor's instructions.	CWB	1.14	CWB & Withdrawal	Crede et al. (2007)
Insulted or made fun of someone at work.	CWB	1.01	CWB & Withdrawal	Spector et al. (2006)
Intentional work slowdowns.	CWB	8.46	CWB & Withdrawal	Neuman & Baron (1998)
Intentionally arrived late for work.	CWB	3.09	CWB & Withdrawal	Aquino et al. (1999)
Intentionally do work badly or incorrectly.	CWB	3.06	CWB & Withdrawal	Gruys & Sackett (2003)
Intentionally fail to give a supervisor or co-worker necessary information.	CWB	2.02	CWB & Withdrawal	Gruys & Sackett (2003)
Intentionally perform your job below acceptable standards.	CWB	2.12	CWB & Withdrawal	Gruys & Sackett (2003)
Intentionally worked slower than you could have worked.	CWB	1.37	CWB & Withdrawal	Bennett & Robinson (2000)
Leave work early without permission.	CWB	2.81	CWB & Withdrawal	Gruys & Sackett (2003)
Left a mess unnecessarily (did not clean up).	CWB	0.97	CWB & Withdrawal	Skarlicki & Folger (1997)
Made an excuse to miss a meeting.	CWB	1.08	CWB & Withdrawal	Crede et al. (2007)
Made an obscene comment or gesture at a co-worker.	CWB	3.06	CWB & Withdrawal	Aquino et al. (1999)
Made an obscene gesture (the finger) to someone at work.	CWB	-0.03	CWB & Withdrawal	Spector et al. (2006)
Made excuses to go somewhere to avoid the work task.	CWB	0.95	CWB & Withdrawal	Crede et al. (2007)
Mail personal packages at work.	CWB	2.33	CWB & Withdrawal	Gruys & Sackett (2003)
Make personal photocopies at work.	CWB	2.97	CWB & Withdrawal	Gruys & Sackett (2003)
Neglected to follow your boss's instructions.	CWB	0.54	CWB & Withdrawal	Bennett & Robinson (2000)

Items matching multiple constructs

Item Wording	Posited Construct	Mean d^{a}	Overlapping Construct	Citation
On purpose, damaged equipment or work process.	CWB	0.71	CWB & Withdrawal	Skarlicki & Folger (1997)
Purposely came to work or came back from lunch breaks late.	CWB	0.97	CWB & Withdrawal	Fox & Spector (1999)
Purposely damaged a valuable piece of property or equipment belonging to your employer.	CWB	1.67	CWB & Withdrawal	Fox & Spector (1999)
Purposely damaged equipment or work process.	CWB	1.28	CWB & Withdrawal	Crede et al. (2007)
Purposely did not work hard when there were things to be done.	CWB	1.06	CWB & Withdrawal	Fox & Spector (1999)
Purposely did your work incorrectly.	CWB	1.02	CWB & Withdrawal	Spector et al. (2006)
Purposely failed to follow instructions.	CWB	1.18	CWB & Withdrawal	Spector et al. (2006)
Purposely ignored your boss.	CWB	0.84	CWB & Withdrawal	Fox & Spector (1999)
Purposely littered or dirtied your place of work or your employer's property.	CWB	0.98	CWB & Withdrawal	Fox & Spector (1999)
Purposely wasted company materials/supplies.	CWB	1.64	CWB & Withdrawal	Fox & Spector (1999)
Purposely wasted your employer's materials/supplies.	CWB	0.59	CWB & Withdrawal	Spector et al. (2006)
Purposely worked slowly when things needed to get done.	CWB	0.96	CWB & Withdrawal	Spector et al. (2006)
Put in to be paid for more hours than you worked.	CWB	-0.16	CWB & Withdrawal	Spector et al. (2006)
Put little effort into your work.	CWB	0.66	CWB & Withdrawal	Bennett & Robinson (2000)
Refused to work weekends or overtime when asked.	CWB	1.19	CWB & Withdrawal	Skarlicki & Folger (1997)
Said or did something to purposely hurt someone at work.	CWB	1.32	CWB & Withdrawal	Robinson & O' Leary-Kelly (1998)
Said rude things about my supervisor or organization.	CWB	1.63	CWB & Withdrawal	Robinson & O' Leary-Kelly (1998)
Seriously considered quitting your job.	CWB	0.95	CWB & Withdrawal	Fox & Spector (1999)
Spent time in idle conversation with coworkers.	CWB	1.05	CWB & Withdrawal	Crede et al. (2007)
Spent time on personal matters while at work.	CWB	0.93	CWB & Withdrawal	Skarlicki & Folger (1997)
Spent too much time fantasizing or daydreaming instead of working.	CWB	1.62	CWB & Withdrawal	Bennett & Robinson (2000)
Spoke poorly about the organization to others.	CWB	0.58	CWB & Withdrawal	Crede et al. (2007)
Started or continued a damaging or harmful rumor at work	CWB	2.00	CWB & Withdrawal	Spector et al. (2006)
Stole something belonging to someone at work.	CWB	0.98	CWB & Withdrawal	Spector et al. (2006)
Stole something that belonged to a coworker.	CWB	0.95	CWB & Withdrawal	Fox & Spector (1999)
Swore at a co-worker.	CWB	3.23	CWB & Withdrawal	Aquino et al. (1999)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Taken an additional or longer break than is acceptable at your workplace.	CWB	1.20	CWB & Withdrawal	Bennett & Robinson (2000)
Taken any kind of drug at work to get high (including alcohol).	CWB	0.74	CWB & Withdrawal	Fox & Spector (1999)
Talked badly about supervisor or coworkers.	CWB	1.16	CWB & Withdrawal	Crede et al. (2007)
Threatened someone at work, but not physically.	CWB	1.12	CWB & Withdrawal	Spector et al. (2006)
Told people outside the job what a lousy place you work for.	CWB	0.50	CWB & Withdrawal	Spector et al. (2006)
Took a long lunch or break without approval.	CWB	3.16	CWB & Withdrawal	Hakstian et al. (2002)
Took an extended coffee or lunch break.	CWB	0.07	CWB & Withdrawal	Crede et al. (2007) Skarlicki & Folger (1997)
Took money from your employer without permission.	CWB	1.66	CWB & Withdrawal	Spector et al. (2006)
Took supplies home without permission.	CWB	1.30	CWB & Withdrawal	Skarlicki & Folger (1997)
Took undeserved breaks to avoid work.	CWB	2.99	CWB & Withdrawal	Aquino et al. (1999)
Tried to cheat your employer.	CWB	1.60	CWB & Withdrawal	Fox & Spector (1999)
Tried to look busy while wasting time.	CWB	0.95	CWB & Withdrawal	Skarlicki & Folger (1997)
Turned in work that was of poor quality - lower than your 1 potential or ability.	CWB	2.68	CWB & Withdrawal	Hakstian et al. (2002)
Use email for personal purposes.	CWB	2.26	CWB & Withdrawal	Gruys & Sackett (2003)
Used sick leave when not sick.	CWB	3.33	CWB & Withdrawal	Hakstian et al. (2002)
Waste time on the job.	CWB	3.95	CWB & Withdrawal	Gruys & Sackett (2003)
Wasted time.	CWB	0.90	CWB & Withdrawal	Crede et al. (2007)
Worked on a personal matter on the job instead of working for my employer.	CWB	2.79	CWB & Withdrawal	Aquino et al. (1999)
I keep important information away from my boss.	CWB	1.90	CWB & Withdrawal	Duffy et al. (1998)
Making problems bigger than they actually are.	Citizenship	-1.07	CWB & Withdrawal	Kwantes et al. (2008)
(Team members) have to redo their work because of sloppy workmanship.	Task performance	-1.20	CWB & Withdrawal	Alper et al. (2000)
Act as if he is not listening when spoken to?	Task performance	-4.04	CWB & Withdrawal	Gibson et al. (1970)
Complain about physical ailments.	Task performance	-1.08	CWB & Withdrawal	Gibson et al. (1970)
Frequently fails to remember assignments given to him/her.	Task performance	-1.80	CWB & Withdrawal	Worbois (1975)
Has poor technical training for the work.	Task performance	-1.46	CWB & Withdrawal	Worbois (1975)
Makes occasional faulty judgments due to lack of adequate technical knowledge.	Task performance	-1.36	CWB & Withdrawal	Worbois (1975)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Need disciplinary action.	Task performance	-2.10	CWB & Withdrawal	Gibson et al. (1970)
Resists changes in ways of doing things.	Task performance	-1.60	CWB & Withdrawal	Worbois (1975)
Say "odd" things.	Task performance	-3.29	CWB & Withdrawal	Gibson et al. (1970)
This worker often fails to perform essential duties.	Task performance	-0.49	CWB & Withdrawal	Janssen & Van Yperen (2004)
Becoming less interested and making more errors.	Withdrawal	2.41	CWB & Withdrawal	Farrell (1983)
Begins work on time. (RS)	Withdrawal	1.08	CWB & Withdrawal	Eisenberger et al. (2001)
Calling in sick and not dealing with what is happening.	Withdrawal	3.34	CWB & Withdrawal	Farrell (1983)
Came to work late without permission.	Withdrawal	1.26	CWB & Withdrawal	Spector et al. (2006)
Coming in late to avoid some problems.	Withdrawal	2.25	CWB & Withdrawal	Farrell (1983)
Fallen asleep at work.	Withdrawal	1.16	CWB & Withdrawal	Lehman & Simpson (1992)
Getting into action and looking for another job.	Withdrawal	1.95	CWB & Withdrawal	Farrell (1983)
Getting self transferred to another job.	Withdrawal	3.06	CWB & Withdrawal	Farrell (1983)
How do you feel about leaving this organization?	Withdrawal	1.77	CWB & Withdrawal	Shore & Martin (1989)
I do not see many prospects for the future in this organization.	Withdrawal	1.74	CWB & Withdrawal	Dysvik & Kuvaas (2008)
I often think about quitting my present job.	Withdrawal	1.91	CWB & Withdrawal	Dysvik & Kuvaas (2008)
Indicate the likelihood that you will quit this job some time in the next year.	Withdrawal	1.20	CWB & Withdrawal	Bernardin (1987)
Left work earlier than you were allowed to.	Withdrawal	1.36	CWB & Withdrawal	Spector et al. (2006)
Left work station for unnecessary reasons.	Withdrawal	1.19	CWB & Withdrawal	Lehman & Simpson (1992)
Put less effort into job than should have.	Withdrawal	1.44	CWB & Withdrawal	Lehman & Simpson (1992)
Spent work time on personal matters.	Withdrawal	1.02	CWB & Withdrawal	Lehman & Simpson (1992)
Taken a longer break than you were allowed to take.	Withdrawal	1.06	CWB & Withdrawal	Spector et al. (2006)
Taken longer lunch or rest break than allowed.	Withdrawal	1.27	CWB & Withdrawal	Lehman & Simpson (1992)
Thoughts of quitting the job.	Withdrawal	3.86	CWB & Withdrawal	Blau (1985)
Been nasty or rude to a client or customer.	CWB	0.50	3 or more constructs	Spector et al. (2006)
Did not provide someone at work with required information.	CWB	0.54	3 or more constructs	Crede et al. (2007)
did not work to the best of ability.	CWB	0.67	3 or more constructs	Crede et al. (2007)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Did something to make someone at work look bad.	CWB	0.59	3 or more constructs	Spector et al. (2006)
Pretended to be busy.	CWB	0.34	3 or more constructs	Crede et al. (2007)
Said something obscene to someone at work to make them feel bad.	CWB	0.49	3 or more constructs	Spector et al. (2006)
Threatened someone at work with violence.	CWB	0.35	3 or more constructs	Spector et al. (2006)
I openly compromise with others but delay implementing the compromise until my own objectives are accomplished.	CWB	0.19	3 or more constructs	Duffy et al. (1998)
Consuming a lot of time complaining about trivial matters.	Citizenship	-0.82	3 or more constructs	Kwantes et al. (2008)
Taking undeserved work breaks.	Citizenship	-1.11	3 or more constructs	Kwantes et al. (2008)
Waits for others to push new ideas before he/she does.	Task performance	0.42	3 or more constructs	Worbois (1975)
Chat with co-workers about non-work topics.	Withdrawal	0.41	3 or more constructs	Lehman & Simpson (1992)
Gave a coworker a "silent treatment".	CWB	0.51	3 or more constructs	Skarlicki & Folger (1997)
Gossiped about his or her boss.	CWB	1.08	3 or more constructs	Skarlicki & Folger (1997)
Got into an argument at work.	CWB	0.54	3 or more constructs	Crede et al. (2007)
Griped with coworkers.	CWB	0.58	3 or more constructs	Robinson & O' Leary-Kelly (1998)
Hit or pushed someone at work.	CWB	0.65	3 or more constructs	Spector et al. (2006)
Ignored someone at work.	CWB	0.17	3 or more constructs	Spector et al. (2006)
Insulted someone about their job performance.	CWB	-0.14	3 or more constructs	Spector et al. (2006)
Looked at someone at work's private mail/property without permission.	CWB	0.84	3 or more constructs	Spector et al. (2006)
Purposely damaged a piece of equipment or property.	CWB	0.74	3 or more constructs	Spector et al. (2006)
Spoke poorly about the company to others.	CWB	0.76	3 or more constructs	Skarlicki & Folger (1997)
Worked slower than necessary.	CWB	0.27	3 or more constructs	Crede et al. (2007)
Filed formal complains.	CWB	0.33	3 or more constructs	Lehman & Simpson (1992)
Made fun of someone's personal life.	CWB	-0.25	3 or more constructs	Spector et al. (2006)
Refused to talk to a coworker for a period of time.	CWB	-0.50	3 or more constructs	Crede et al. (2007)
Spent time on personal tasks.	CWB	0.25	3 or more constructs	Crede et al. (2007)
Spread rumors about coworkers.	CWB	0.50	3 or more constructs	Skarlicki & Folger (1997)

Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Items matching multiple constructs				
Took supplies or tools home without permission.	CWB	0.23	3 or more constructs	Spector et al. (2006)
Used office supplies without permission.	CWB	0.38	3 or more constructs	Crede et al. (2007)
Verbally abused someone at work.	CWB	0.37	3 or more constructs	Spector et al. (2006)
Always finds fault with what the organization is doing. (RS)	Citizenship	0.10	3 or more constructs	Podsakoff et al. (1990)
Coasting toward the end of the day.	Citizenship	-0.28	3 or more constructs	Kwantes et al. (2008)
Complains a lot about trivial matters. (RS)	Citizenship	-0.09	3 or more constructs	Konovsky & Organ (1996)
Made attempts to change work conditions.	Citizenship	0.27	3 or more constructs	Lehman & Simpson (1992)
Takes undeserved breaks. (RS)	Citizenship	-0.40	3 or more constructs	Smith et al. (1983)
Attempted to improve morale in organizational unit.	Citizenship	0.67	3 or more constructs	Crede et al. (2007)
Attending functions not required that help company image.	Citizenship	-0.01	3 or more constructs	Kwantes et al. (2008)
Attending meetings that are not mandatory.	Citizenship	-0.30	3 or more constructs	Kwantes et al. (2008)
Great deal of time spent with personal phone conversations. (RS)	Citizenship	0.55	3 or more constructs	Smith et al. (1983), Williams & Anderson (1991)
Informing ahead of time if time off is needed.	Citizenship	0.29	3 or more constructs	Kwantes et al. (2008)
Negotiated with supervisors to improve job.	Citizenship	0.53	3 or more constructs	Lehman & Simpson (1992)
Not spending time in conversation unrelated to work.	Citizenship	0.28	3 or more constructs	Kwantes et al. (2008)
Tried to think of ways to do job better.	Citizenship	0.85	3 or more constructs	Lehman & Simpson (1992)
Volunteered to do something that wasn't part of the job.	Citizenship	0.89	3 or more constructs	Crede et al. (2007)
Volunteering for things that are not required.	Citizenship	0.78	3 or more constructs	Kwantes et al. (2008)
Performs well in the overall job by carrying out tasks as expected.	Task performance	1.02	3 or more constructs	Goodman & Svyantek (1999)
Do you have essentially the same job (as two years ago)?	Withdrawal 1	0.12	3 or more constructs	Kopelman et al. (1992)
Taking everything into consideration, how likely is it that you will make a genuine effort to find a new job with another employer within the next year?	Withdrawal	0.99	3 or more constructs	Beehr & Gupta (1978)
Consumes a lot of time complaining about trivial matters. (RS)	Citizenship	0.66	3 or more constructs	Podsakoff et al. (1990)
Covering for late/absent people.	Citizenship	0.71	3 or more constructs	Kwantes et al. (2008)
Encourages friends and family to utilize organization products.	Citizenship	0.85	3 or more constructs	Moorman & Blakely (1995)

Items matching multiple constructs				
Item Wording	Posited Construct	Mean d[a]	Overlapping Construct	Citation
Encourages hesitant or quiet co-workers to voice their opinions when they otherwise might not speak-up.	Citizenship	0.85	3 or more constructs	Moorman & Blakely (1995)
Could manage more responsibility than typically assigned.	Task performance	0.80	3 or more constructs	Goodman & Svyantek (1999)

Note. [a] refers to the average *d* for the posited construct.