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DEFINING THE NATURE AND STRUCTURE OF WORK SITUATIONS

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of

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To my amazing wife Hollie, for all you do, the love of my life!

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ABSTRACT

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Numerous researchers throughout the last several decades have argued that the social sciences would benefit from a taxonomy of situations. A number of efforts to develop such a system exist, but none has been readily embraced. This study examines the feasibility of adapting the nature and structure of the Linnaean Taxonomy of organisms to the study of situations by categorizing types of work situations on the basis of the dimensions that define them. Results derived from multiple independent samples converge on the idea that four types of work situations (i.e., bureaucratic, prosaic, incubative, and strategic) can be classified by their standing on two orthogonal dimensions (i.e., formality-informality and maintenance-development). This structure is not only intended to serve as a consistent way for organizational scientists to conceptualize work situations, but is also designed to serve as the foundation for a larger taxonomy that can be developed and utilized by researchers across diverse fields to better understand situations in general.

INTRODUCTION

Classification is fundamental to the goals of science, in that it provides a universal means of effectively conceptualizing and efficiently communicating information about concepts of interest (Rosch, 1978; Sokal, 1974). When developed with foresight and purpose, however, classification efforts have the potential to be more than mere “catalogues of convenience” (Pervin, 1978, p. 98), by serving as meaningful theories in their own right. This, however, requires that: the constructs of interest be clearly articulated, the relationships among these constructs be specified, and the system as a whole be empirically falsifiable (Doty & Glick, 1994). Because a number of disciplines posit important direct or indirect effects for “situations,” many theorists have argued that the social sciences would benefit from a carefully developed taxonomy that could be used to provide a more thorough conceptualization and understanding of this domain (e.g., Barrick & Mount, 2005: organizational studies; Edwards & Templeton, 2005: social psychology; Fleeson, 2007: personality psychology; McAuley, Bond, & Kashima, 2002: cross-cultural psychology; Moos, 2002: community psychology; see Appendix C for a more comprehensive list, as well as specific quotes from relevant authors).

A particularly effective type of classification system is the “hierarchical taxonomy,” in which targets are arranged into sets of progressively focused categories

on the basis of their similarity. This classification system has two primary benefits: a) the ability to convey large amounts of information and b) the ability to convey this information efficiently (Murphy & Lassaline, 1997). These benefits stem primarily from the fact that carefully categorized types of targets are able to provide information about the dimensions that define them.¹ For example, someone who has never heard of a “capybara” is able to obtain information about the characteristics (i.e., dimensions) that define it (it is mobile, lacks cell walls, obtains energy actively, reproduces sexually, is warm-blooded, has fur, feeds its young through mammary glands, has continuously-growing incisors, etc.) by simply knowing what type of organism it is (i.e., a rodent). The rationale for, and basic structure of, a system that applies this relatively simple logic to the study of work situations (and, ideally, situations in general) are outlined below.

The Need for a Taxonomy of Situations

Recognizing the importance of accurate classification, differential psychologists have utilized a variety of psychometric techniques to classify their primary variables of interest. Perhaps the most rigorous and well-accepted classification system in differential psychology is the structure of cognitive abilities (Lubinski, 2000). Dating back to the late 1800s (e.g., Cattell, 1890; Galton, 1890), research on the structure of human intelligence has generally concluded that human intellectual functioning can be described by a general factor (also known as “general intelligence,” “general mental ability,” or “g”), which subsumes a small number of more specific facets (e.g., quantitative reasoning, cognitive processing speed, reading and writing), which in turn subsume a larger number of specific abilities (McGrew, 1997). Although debate about

the specific nature of these facets and sub-facets exists, the core of this structure has generally been shown to be theoretically, psychometrically, and practically defensible (Jensen, 1998).

Another domain of human differences that is characterized by relatively broad taxonomic consensus is personality. Developing out of the early work of Allport and Odbert (1936), and arguably even the original postulation of Galton's "Lexical Hypothesis" (1884), the modern "Big Five" taxonomy (Goldberg, 1981) posits that variability in personality constructs can ultimately be captured by five broad traits: extraversion, agreeableness, openness to experience, conscientiousness, and neuroticism (McCrae & John, 1992). Indeed, this model has been used by psychologists across diverse areas of research to organize and make sense out of a literature that was previously characterized by a veritable "Babel of concepts and scales" (John & Srivastava, 1999, p. 103).

Despite the aforementioned progress on the "person" side of the "person-situation" divide (Cronbach, 1957), those on the "situation" side have yet to reach the same level of consensus (Funder, 2006; Hattrup & Jackson, 1996; Johns, 2006; Ten Berge & De Raad, 2002). One of the primary consequences of this lack of consensus is that researchers who are interested in studying the effects of situations are often forced to use ad hoc conceptualizations (Grote & James, 1989). Although this practice has certainly yielded important information, understanding how specific situations relate to relevant predictor-outcome relationships across disciplines is difficult because of the lack of a consistent system of organizing situations and their defining dimensions.

Support for a taxonomy of situations generally takes one of four forms: classic situationist (the need to understand situations because of their proposed main effects), situation-as-context (the need to understand situations because of their indirect and often unforeseen effects), interactionist (the need to be able to predict and understand person-situation interactions), and trait-based (the need to understand only those situations that affect the expression of traits). The following paragraphs briefly outline the main points of each of these traditions. It is important to note here, however, that these perspectives are not necessarily at odds with each other; they merely represent different ways of conceptualizing the various ways in which situations affect outcomes in the social sciences.

The classic situationist argument (most common in fields such as sociology and social psychology) posits that situations have important main effects on numerous outcomes of interest; thus, situational variables should be thoroughly organized to better facilitate a full understanding of these influences (Davis-Blake & Pfeffer, 1989; Frederiksen, 1972). For example, Belk (1975) outlined a number of ways that situational forces such as the presence of others and the imposition of time constraints influence consumers' purchase behaviors. From a more macro perspective, psychologists and sociologists have long posited that myriad environmental forces (e.g., parenting style, socio-economic status, educational opportunities) have important main effects on behaviors ranging from criminality to the development of psychosocial disorders (see Rutter, Pickles, Murray, & Eaves, 2001, for a review).

The situation-as-context argument (most common in fields such as educational psychology and the organizational sciences) posits that broad environmental forces

often influence the expression of traits, but this frequently occurs through means that are unforeseen and/or operate outside of the theory of interest (Bruner, 1996; Johns, 2001, 2006). Thus, this perspective posits that considerations external to the individual sometimes have indirect effects that are often only detected and understood after one's data have been collected or other researchers have subsequently found inconsistent results (e.g., Cappelli & Sherer, 1991; Mowday & Sutton, 1993). For example, two researchers who examine the relationship between job satisfaction and voluntary employee turnover might come to different conclusions because one examined this relationship during a period of strong economic growth, whereas the other did so during a recession. This difference in findings, therefore, is not due to environmental differences that were intentionally modeled, but was instead due to the unconsidered fact that employees are generally less likely to leave their jobs in times of general economic deprivation (Hulin, Roznowski, & Hachiya, 1985)—a conclusion that may not be obvious until relevant contextual effects have subsequently been reconciled.

The interactionist perspective (spanning numerous areas of study) posits that human behavior is a joint function of individuals and situations; thus, theories that attempt to explain human behavior should explicitly and intentionally account for both of these sources of variability by understanding the main effects of each, as well as their interactions (Cronbach, 1957; Hattrup & Jackson, 1996). A full understanding of behavior is, therefore, contingent on the meaningful conceptualization of individuals and the situations they experience (Funder, 2001). Examples of interactional research questions that would benefit from a taxonomy of situations include Shoda, Mischel, and Wright's (1994) "if...then..." profiles, which are designed to predict the

circumstances under which particular behaviors will be manifested, given one's unique profile of individual differences. Thus, one of the primary arguments of the present study is that a taxonomy of situations that moves beyond the simple classification of nominal situations (e.g., family situations, work situations), to elucidating the dimensions that define them (e.g., extent of cooperation versus competition), would help inform this line of research by providing a consistent system of understanding and communicating effects across studies and disciplines (see also Fleeson, 2007).

Lastly, the trait-based view of situations (primarily found in personality psychology) posits that situations are only relevant to the extent that they trigger the expression of specific individual differences. For example, Ten Berg and De Raad (1999) argue that "situational knowledge is of use to trait psychology if it further specifies trait information. Therefore, only those situation taxonomies that are built as a further specification of trait knowledge are of interest" (p. 354). Thus, although a comprehensive taxonomy of situations such as the one proposed in the present study might still be of benefit to a strictly trait-based view, it might also contain information that is not directly relevant to this perspective (i.e., information that does not necessarily affect the expression of traits).

Dissensus Regarding the Structure of Situations

Reflecting the value and overlap of each of the positions outlined above, numerous taxonomies of situations in a variety of fields have been developed (discussed subsequently in greater detail). Yet, despite decades of research and theorizing, substantial dissensus still exists regarding the best way(s) to reduce the nearly infinite domain of situations into a more manageable and organized system

(Barrick & Mount, 2003; Funder, 2001, 2006; Hattrup & Jackson, 1996; Hogan, Harkness, & Lubinski, 2000; Saucier, Bel-Bahar, & Fernandez, 2007). Although many factors help explain this lack of agreement, a critical reading of relevant literatures suggests that the following are likely among the primary reasons for this dissensus.

Lack of Cross-Discipline Communication/Coordination

Even though the majority of social science disciplines utilize theories that posit substantial effects of situations and situational characteristics, many of the attempts to classify this domain of constructs have been published in discipline-specific journals and have primarily cited work in closely related areas. For example, Baumeister and Tice (1985) attempted to create a taxonomy of situations by examining the independent variables used in a sample of issues of the Journal of Personality and Social Psychology. These authors argued that the field of Social Psychology is generally focused on the effects of situations on human behavior, so sampling the independent variables used in this field's primary journal should yield a relatively representative sample of situations.

The assumption that this journal adequately taps the entire domain of potential situations may be correct, but it may have also created the perception that their taxonomy was primarily intended for Social Psychologists. Indeed, a search of the articles that have cited this taxonomy suggests that its primary influence appears to have been in the field of Social and Personality Psychology. That being said, these authors should be commended for attempting to connect the development of this taxonomy to relevant seminal works in the area of situational analysis (e.g., Frederikson, 1972; James & Sells, 1981; Magnusson, 1981; Sells 1963).

Focus on Either Types or Dimensions

Although a number of theorists have pointed out the importance of defining types of situations as well as the dimensions that define them (e.g., Funder, 2006; Pervin, 1978), many of the extant attempts to classify situations have tended to focus on only one of these goals, at the exclusion of the other (Eckes, 1995). For example, Van Heck (1984, 1989) applied the lexical approach to the study of Dutch nouns, concluding that there are ten broad types of situations (interpersonal conflict, joint working, intimacy and interpersonal relations, recreation, traveling, rituals, sport, excesses, serving, and trading); however, no information was provided about the characteristics that differentiate these categories of situations. Edwards and Templeton (2005), on the other hand, utilized the lexical approach but applied it to the study of situational attributes (i.e., adjectives), ultimately concluding that three dimensions underlie all situations: valence (general positivity versus negativity), productivity (the extent to which a situation is focused on goal achievement), and ease of negotiation (the extent to which situational constraints are flexible and negotiable). Although both of these approaches are admirable and provide useful information, taxonomies that include information about both types and dimensions are better able to efficiently convey large amounts of information (Murphy & Lasaline, 1997).

Conceptual and Metric Variability

Another issue that has likely prevented the large-scale acceptance of a given taxonomy of situations is the heterogeneity used to conceptualize the primary phenomena of interest. As Frederiksen (1972) pointed out, some past taxonomic efforts have focused on relatively objective features of situations, whereas others have focused

on their perceived characteristics, whereas others have focused on the behavioral and emotional outcomes thereof. For example, Saucier, Bel-Bahar, and Fernandez (2007) focused primarily on objective qualities of situations by limiting their study to those characteristics that are most likely to be perceived by “an impartial scientific observer” (p. 482). In contrast, Pervin (1976) asked participants to describe various life situations in terms of their subjective impact on subsequent feelings and behaviors, thereby accounting for aspects of situations that might not be perceived by outsiders. The crux of this distinction is the question of whether situations should be considered in a relatively objective or subjective manner.

Anticipating the aforementioned fundamental distinctions, Murray (1938) distinguished between objective characteristics of situations (alpha-press) and subjective interpretations of situations (beta-press), whereas Block and Block (1981) argued that all situations can be classified in objective (physico-biological), socially-agreed upon (canonical) and uniquely perceived (functional) terms. Although there are slight differences in these two approaches, they both highlight that none of the ways of conceptualizing situations is necessarily right, wrong, or even incompatible with the others; rather, these various approaches simply underscore the importance of specifying which is being used and why. An analogy can be drawn with individual differences research, in the sense that personality can be conceptualized by self-report, other-report, conditional reasoning, or behavioral frequency; yet, despite these different perspectives, meaningful and useful classification systems are still possible. That being said, researchers interested in conceptualizing personality via self-report versus other-report (for example) should make this clear and consider the implications of this

distinction when drawing inferences (Kolar, Funder, & Colvin, 1996); the same guidelines should apply to researchers who attempt to classify situations.

Differences in Levels of Abstraction

Many extant taxonomies of situations do not explicitly define the level of abstraction upon which they are focused, thereby limiting the possibility of using them in conjunction with, or even comparing them to, other systems. The aforementioned taxonomy of situations developed by Van Heck (1984, 1989), for example, did not account for the possibility that a number of its component situations could potentially be considered subsets of each other and of other types of situations. For example, “intimacy” and “interpersonal conflict” could be considered specific instances of “interpersonal relations;” “sport” and some forms of “traveling” could be considered specific instances of “recreation,” and “serving” and “trading” could be considered specific instances of “joint working.” Perhaps, then, his taxonomy could have more parsimoniously been represented by a smaller number of types, consisting of several subtypes. Only recently have researchers begun to recognize and actively account for the hierarchical nature of situations (e.g., Saucier, Bel-Bahar, & Fernandez, 2007; Yang, Read, & Miller, 2007), but the former categorized types of situations and the latter ultimately included aspects of individuals within situations, as opposed to situations in and of themselves.

Summary of Dissensus in Situational Taxonomic Efforts

Despite the diversity of approaches outlined above, nearly all previous attempts to create taxonomies of situations share two (potentially related) features. First, they represent the work of a single researcher (or team of researchers) working in relative isolation, with little attempt to build upon existing efforts. Second, none has been adopted across disciplines to any great degree, so there continue to be numerous calls across a variety of literatures for a universally accepted taxonomy of situations. With these considerations in mind, the following section presents a substantially different vision for a taxonomy of situations that is updateable, can be jointly developed by interested researchers, and hierarchically categorizes types of situations on the basis of their defining dimensions. After the general structure of this system has been outlined, the remainder of this document explores its general feasibility by applying it to the study of organizational situations.

PROPOSED FRAMEWORK

The structure of the proposed hierarchical taxonomy of situations can be summarized by the following guiding principles. First, it is designed to be updateable, so that the taxonomic efforts of researchers in a given field not only benefit the specific domain of interest (e.g., a taxonomy of familial situations would benefit marriage and family studies), but can also be used to contribute to the system as a whole. Second, it is designed to categorize types of situations on the basis of their defining dimensions, so that simple labels can be used to efficiently convey large amounts of defining information. Third, it is designed to account for the nested nature of situations by arranging types of situations hierarchically, such that broad categories subsume related subsets of situations. The following sections outline the precise manner in which the aforementioned principles and lessons learned from previous taxonomic efforts are applied to the proposed hierarchical taxonomy, beginning with definitions of relevant terms.

Terminology

Given that the primary purpose of this manuscript is to begin building a taxonomy of situations, it is important to clearly define each of these terms. With respect to “taxonomy,” Cognitive Psychology provides a number of important considerations and distinctions, whereas the concept of a “situation” is much more

enigmatic, in that it is frequently either left undefined (see Edwards & Templeton, 2005, for a noteworthy exception) or is used interchangeably with related concepts such as “stimulus,” “environment,” and “context” (Johns, 2001, 2006; Pervin, 1976). Given this ambiguity, the concept of situations will be discussed first.

“Situations”

Despite, or perhaps because of, the prominence of situations in the history of social science theorizing (see Baumeister & Tice, 1989 for some perspective), this term is difficult to define precisely in a way that is parsimonious enough to be useful, yet encompassing enough to adequately capture relevant nuances. Indeed, any concept that represents a central component of the famous axiom “behavior is a function of both persons and environments” (Lewin, 1936, p. 12),² will necessarily be difficult to define in a manner that simultaneously meets various parties’ preconceptions. Drawing from the distinctions outlined above (e.g., objective versus subjective perspectives, types versus dimensions), the following multifaceted definition is offered for the purposes of this manuscript: work situations are combinations of people, objects, actions, general circumstances, and specific physical/social/psychological conditions surrounding a particular activity, occurring at a specific point in time, in a work-relevant context.

This definition has a number of practical and theoretical implications. First, it explicitly recognizes the multifaceted nature of situations (i.e., that multiple dimensions underlie a given type) by stressing that situations are best defined by combinations of multiple characteristics. Second, it focuses on a specific point in time, thereby (a) recognizing that situations evolve as social, psychological, and behavioral circumstances change, without necessarily requiring a change in physical location and

(b) helping to differentiate the term “situation” from related terms (e.g., “environment,” “circumstance”). Lastly, it capitalizes on Lewin’s (1936) notion that “what is real is what has effects” (p. 19) as well as Block and Block’s (1981) “canonical” perspective by focusing on those characteristics that are likely to penetrate one’s conscious awareness. Temperature, for example, is only likely to be considered an important characteristic of a given situation to the extent that it is salient to an impartial observer (e.g., “going over statistics and figures with my boss regarding next year’s budget” is an adequate description of a situation unless it also happens to be swelteringly hot or frigidly cold in the room in which this situation is taking place).

Hierarchical Taxonomy

The term “hierarchical taxonomy” is used throughout this manuscript because it (unlike alternatives such as hierarchy, taxonomy, typology) explicitly refers to a system that utilizes a relatively small number of superordinate categories, which subsume an increasingly large number of progressively focused categories that are defined by a small set of specific inclusion rules (Murphy & Lassaline, 1997; Pervin, 1978). In hierarchical taxonomies, each target at a given subordinate level of abstraction is joined to related targets at superordinate levels of abstraction via IS-A links (Collins & Quillian, 1969), meaning that each subordinate target “is a” specific example of each of the superordinate types. For example, a tree is a plant; a conifer is a tree and is a plant; a pine is a conifer, is a tree, and is a plant (Farjon, 2005, see Figure 1, Appendix B).

One of the primary benefits of IS-A links is that they allow types of targets at subordinate levels of abstraction to retain the characteristics of connected superordinate categories. Continuing with the previous example, a pine is not only defined by the

unique characteristics that make it a pine, but it also retains all of the properties of conifers, trees, and plants. Thus, even if one has no direct knowledge of a given object, its location in the hierarchical taxonomy provides useful information about its defining characteristics. This feature also makes it possible to create an entity-property matrix for each target (Murphy & Lassaline, 1997), which is a useful supplemental tool that concisely presents information about a given object's location in the hierarchical taxonomy and its resultant standing on each defining dimension (see Table 1, Appendix A). Each of these characteristics can also be applied to the basic structure of the system proposed here.

General Structure

The benefits of hierarchical taxonomies outlined above are elegantly captured by the Linnaean taxonomy, which is frequently used to classify organisms in biology.³ Specifically, the Linnaean taxonomy represents a hierarchical taxonomy that is intended to help researchers categorize myriad types of organisms (e.g., plants, snakes, hominids) into categories at multiple levels of abstraction (e.g., “Kingdom,” “Order,” “Family”), on the basis of the dimensions that define them (e.g., stationary versus mobile, cold-blooded versus warm-blooded, method of reproduction). Targets within other domains of interest can also be categorized and, therefore, more effectively understood by applying this general structure (e.g., vehicles, types of dwellings)—the primary postulate of this system is that situations are no exception.

Although potential alternative models in other scientific disciplines certainly exist (the periodic table of elements, the DSM-IV), the structure of the proposed hierarchical taxonomy is patterned after the Linnaean system for three primary reasons,

the virtues of each were documented previously. First, the Linnaean system is a well-established hierarchical taxonomy with a basic structure that can be expanded upon and updated as biologists' knowledge of organisms advances (e.g., discoveries of new species necessitate the establishment of new genera, families, orders, etc.). Second, it effectively models the hierarchical nature of the targets of interest. Third, it categorizes types of targets, while simultaneously providing meaningful information about the dimensions that characterize them. The ways in which the proposed hierarchical taxonomy will attempt to emulate each of these aspects of the Linnaean system are discussed below.

Consistent with the perspective of Frederiksen (1972), who argued that “ultimately, a taxonomy of situations, if we ever have one, will surely not be the work of any one investigator” (p. 117), the proposed system is not designed to be an endpoint but, rather, the framework of a continually-updateable taxonomy that can be augmented by researchers in other areas of study that are concerned with the nature and structure of situations. In this sense, specific contributions will not only benefit the target discipline (e.g., educational psychology, family studies), but might also contribute to the overall structure of the broad taxonomy of situations. The following contribution to the organizational sciences' understanding of work situations is presented in this spirit.

CURRENT CONTRIBUTION

Before large-scale efforts dedicated to developing the aforementioned hierarchical taxonomy can begin, it is necessary to examine this structure's general feasibility by developing one category at one level that can be used as a prototype for similar endeavors in other areas of inquiry. Given that a number of direct and indirect effects have been posited for situations on work-relevant outcomes (see Johns, 2006, for a summary), and that organizational scientists have issued a number of the extant calls for a taxonomy of situations (see Appendix C), the remainder of this manuscript is devoted to outlining an effort to examine the nature and structure of work situations. Thus, this study not only provides a meaningful contribution to the organizational sciences, but also serves as an initial contribution to the structure of the proposed hierarchical taxonomy of situations as a whole. Thus, the present effort presupposes that "work situations" (i.e., work-relevant situations experienced by individuals or teams) exist as a meaningful category of situations at a relatively broad level of abstraction.

Although no single, unified literature exists that is dedicated to defining and understanding work situations per se, diverse research that is relevant to this general area of inquiry is relatively common. Here, perspectives range from single, highly-focused studies to broad and established taxonomies that have existed for decades.

Further, extant efforts draw from (and are applied to) eclectic domains such as occupational health and safety, vocational psychology, social psychology, and organizational development. The following section attempts to provide an informative review of relevant trends and perspectives pertaining to the organizational sciences' knowledge of the dimensions that underlie work situations, as well as nominal types of work situations. This effort, however, is by no means comprehensive because of the largely disconnected nature of potentially relevant efforts. Instead, the concepts reviewed here are designed to adequately reflect a diverse array of perspectives that have had a substantial impact on thinking and research in the organizational sciences.

Conceptualizations of Work Situations' Defining Dimensions

Cooperation-Competition

In an attempt to lay the theoretical foundation for arguments pertaining to the fundamental defining dimensions of work settings, Stewart and Barrick (2004) examined a number of diverse theoretical perspectives (e.g., "open systems theory," evolutionary psychology, job design) to argue that work situations can be differentiated by their level of cooperativeness versus competitiveness. Specifically, these authors argue that this single, bipolar dimension can be used to categorize work situations at a broad level of abstraction—that is, at their core, all work situations can be differentiated by their standing on this continuum.

These authors then use this conceptualization to make predictions regarding the conditions under which each of the Big Five personality traits will and will not predict organizationally-relevant outcomes. Specifically, they argue that conscientiousness and emotional stability necessarily lead to accomplishment striving, but the precise ways in

which accomplishment striving is translated into specific behaviors depends on additional aspects of the individual's personality, as well as qualities of the situation. Specifically, the accomplishment striving that stems from conscientiousness and emotional stability is posited to lead to communion striving if a) the person is also highly agreeable and b) cooperative situational demands exist. The accomplishment striving that stems from conscientiousness and emotional stability is posited to lead to status striving, on the other hand, if the person is a) highly extraverted and b) competitive situational demands exist.

These authors' arguments are well-reasoned and persuasive, but they appear to have not considered the possibility that some work situations involve individuals who operate in ways that are relatively free from (and have essentially trivial implications for) the influence of other people. As a consequence, their defining dimension may not be able to adequately differentiate all work situations. Given that the authors did not empirically test the veracity of their arguments regarding the nature of the proposed dimension underlying work situations, concerns such as this cannot be adequately addressed. That being said, one of the benefits of the present study is that it will indirectly help to verify Stewart and Barrick's (2004) structure because if cooperativeness-competitiveness is, in fact, one of the core defining dimensions of work situations, evidence for this should be detected here. That being said, many other candidates for potential underlying dimensions of work situations also exist in a variety of literatures.

The Demand, Control, Support Model

One specific area of study wherein relevant inquiry is perhaps most common is the study of occupational stress, health, and safety. One of the earliest and best known attempts in this area was initially developed by Robert Karasek (1979), who argued that two broad dimensions of work environments have the capacity to affect worker stress and wellbeing. The first dimension, “demands,” refers the nature and intensity of one’s workload, typically operationalized by time pressure and role conflict. The second dimension, “control” (also known as decision latitude), is defined by the extent to which a given employee is able to influence the tasks for which he or she is responsible and is typically operationalized by “skill discretion” and “decision authority.” This model was later expanded by Johnson and Hall (1988), who argued that a third dimension, “support,” which refers to the extent to which employees’ logistical and psychological needs are met at work (high support) versus the extent to which employees experience isolation (low support), also plays an important role in the experience of environmentally-induced stress at work.

Regardless of which conceptualization is used, the primary theoretical idea underlying these models is that the probability of experiencing stress and diminished wellbeing increases in physiologically and/or psychologically demanding work situations wherein employees have little control and/or little support—a notion that has been supported by a relatively large body of empirical evidence (see Van der Doef & Maes, 1999, for a 20-year review). Further, these dimensions have been shown to be effectively orthogonal across a variety of studies and samples, with observed

correlations typically estimated at roughly $r = .10$ (Johnson & Hall, 1988), meaning that it is important to understand the unique and combined effects of each dimension. More nuanced aspects of this theory (e.g., propositions pertaining to the buffering effects of high control and/or high support in demanding situations), however, have received substantially less empirical support. Nonetheless, this model represents an important effort to better define and understand some potentially important characteristics of work situations. Other characteristics of situationally-relevant concepts (e.g., social interactions) that are not necessarily exclusive to work settings, however, might also provide a useful lens through which work situations may be able to be viewed.

Social Exchange

Blau's (1964) notion of "social exchange" has been used to help explain situationally-contingent human behavior across a variety of disciplines and perspectives. His primary argument was that relationships (which are key determining aspects of situations) come in two broad types: "economic exchange relationships," which are characterized by formal, clearly-specified transactions involving (typically) short-term material and financial benefits, and "social exchange relationships," which are characterized by informal, amorphously specified transactions involving (typically) long-term socio-emotional benefits that are generally based on the concepts of trust, respect, and reciprocity. Thus, to the extent that analogous exchange relationships are present at work, this dimension might be able to be used as a meaningful dimension that can be used to differentiate work situations.

Potential support for the notion that a social exchange dimension might underlie work situations is present in a number of work-relevant theories and concepts. For example, Rousseau's (1989) concept of "psychological contracts" posits that relationships are typically either "transactional" (focused on formalized, economic outcomes) or "relational" (focused on informal, socio-emotional outcomes), a distinction that has important implications for the ways in which individuals experience and react to stimulus situations. Further, theories of organizational justice (e.g., Masterson, Lewis, Goldman & Taylor, 2000), organizational commitment (Meyer & Herscovitch, 2001), and leader-member exchange (Wayne, Shore & Liden, 1997) have all been influenced by various iterations of ideas that are conceptually consistent with social exchange. Thus, at their core, many theories of work-relevant outcomes have argued that one of the primary dimensions that can be used to differentiate various types of work stimuli is whether or not they are viewed as focused on either formal, short-term, economically-driven outcomes or informal, long-term, socio-emotional outcomes.

General Valence

Another dimension that might also legitimately serve as a primary dimension that can be used to differentiate various types of work situations is that of general valence (i.e., positivity versus negativity). Empirical support for this distinction can be found in two recent attempts to define the dimensions that characterize situations in general (i.e., not in any particular hierarchical fashion), in which perceived positivity or negativity consistently emerged from combinations of relevant statistical techniques such as factor analysis, multidimensional scaling, linear regression, and cluster analysis

(Edwards & Templeton, 2005; Yang, Read, & Miller, 2005). Because these findings were derived on the basis of participants' responses to situational adjectives (Edwards & Templeton) and Chinese idioms (Yang, Read, & Miller), it is not clear whether similar findings will emerge as a defining feature of descriptions that, consistent with the definition of "situation" provided previously, include relevant nouns, verbs, and contextual information. That being said, a reasonably well-documented tendency for humans to naturally evaluate a host of stimuli in either a positive or negative manner (Bargh, Chaiken, Govender, & Pratto, 1992) suggests that this distinction may, in fact, emerge out of a comprehensive analysis of work situations.

Although each of the potential defining dimensions outlined above can be viewed as a legitimate candidate for inclusion in this study, it is also important to note that there is no strong a priori reason to necessarily expect that work situations will be best represented by a single dimension. For example, it is possible that work situations will be best defined by two dimensions that collectively form four distinct types, three dimensions that collectively form eight distinct types, or even more dimensions and resultant types. Indeed, as discussed in the following section, numerous areas of research have used substantially more complex dimensional solutions to explain either the general dimensional structure of work situations or, more commonly, the dimensional structure of situations that are relevant to the expression of a particular kind of employee behavior.

Moos's Defining Dimensions

Rudolph Moos, for example, has spent much of the last four decades examining the dimensions that unite and define a variety of human environments (e.g., Moos,

1973, 1976, 1984). In the most recent summary of his work, Moos (2002) argues that three primary dimensions (each of which can be subdivided into more precise forces) underlie the preponderance of human environmental experiences across broad domains such as family, school, work, and community. Specifically, Moos argues that each of these domains can be defined by their standing on the following dimensions: 1) relationships (the extent to which relevant relationships are of high quality and focused on interdependence), 2) personal growth (the extent to which environmental forces encourage personal development and change), and 3) system maintenance and change (the extent to which a given environment is organized and orderly).

Most relevant to the current efforts, Moos argued that work environments are best characterized as relationship-oriented, growth-oriented, and organized. Although this conclusion regarding the general nature of work environments may be correct, it does not allow for the distinct possibility that specific work situations vary on these dimensions (sometimes dramatically) as circumstances at work change. For example, although Moos's argument that work environments often require and/or encourage innovation (a sub-component of the system maintenance and change dimension) may generally be correct, there are likely not only differences in the extent to which this is the case across occupations (e.g., software designers are likely required to innovate more frequently than administrative assistants), but also the extent to which this is the case across situations within the same occupation (e.g., despite this general trend, software engineers likely experience some situations that are very mundane and require no innovation whereas administrative assistants likely experience some situations that require novel problems to be solved via innovation). Thus, although Moos's body of

work and perspective is interesting and useful, it only focuses on the dimensions that differentiate very broad environments. Efforts from other researchers, however, have been much more microscopic in their focus.

Amabile's Analysis of Creative Situations

One such example of an attempt to distill narrowly-focused dimensions of work situations is provided by Teresa Amabile and her colleagues (e.g., Amabile, 1983; Amabile, 1988; Amabile, Conti, Coon, Lazenby, & Herron, 1996), who have undertaken a line of inquiry dedicated to better understanding the conditions that encourage and facilitate human creativity. The portion of this line of research that deals specifically with the situational characteristics that facilitate or quell employee creativity at work has variously suggested that between three and eight broad characteristics play a substantive role.

First, the organization's "motivation to innovate" is a broad assessment of the extent to which creativity among employees is valued and facilitated through policies, supervision, and team structures that encourage divergent perspectives (e.g., psychological diversity), risk taking, and learning from errors. Second, creativity is influenced to the extent that the organization in question has the resources necessary for creativity (e.g., adequate funding for innovation, policies that allow employees to dedicate time and energy to innovation). Third, creativity is more likely when management provides ample autonomy and challenge via interesting and strategically-oriented tasks. Fourth, pressure can also either facilitate (e.g., through challenge) or inhibit (e.g., through heavy workloads) creativity. Lastly, organizational impediments such as internal strife, rigid thinking, and a risk-averse perspective can serve to reduce

innovation. That being said, this perspective is focused on a rather specific area of organizationally-relevant behavior, so its specific relevance to the purposes and rationale of this study is likely limited.

Summary of Potential Dimensions

Each of the aforementioned characteristics is a plausible candidate for the potential dimensions that underlie broadly conceived work situations. The notion that numerous perspectives can potentially be drawn from when assessing the nature of situations can be viewed, however, as both a strongpoint (because “situations” are necessarily complex entities, the totality of their defining dimensions should be adequately represented) and an obstacle (because the large number of potential dimensions makes meaningful reconciliation all the more difficult). Thus, the perspectives outlined above have largely remained unconnected, despite potentially meaningful overlap that may be able to be capitalized upon.

In an effort to begin making sense of these broad perspectives in a comprehensive yet parsimonious manner, the current study assesses the dimensional nature of broad work situations, while simultaneously providing the foundations of a structure that will allow for the subsequent understanding of more narrow work situations. But because there is no dominant theoretical paradigm to help guide hypotheses regarding the precise nature of work situations, this issue will be addressed via the following research question.

Research Question 1 – What defining dimensions can best be used to describe work situations?

The answer to this research question will then be used to define resultant types of work situations. Before outlining the methods that will be used to complete these interrelated steps, however, it is important to first examine previous attempts to categorize types of work situations.

Conceptualizations of Types of Work Situations

A number of efforts across a variety of literatures exist that examine types of situations that are relevant to human experiences in organizations. The following sections outline a few of these efforts in order to highlight the relevant pros, cons, and potential areas of connection among them. Again, however, this list is not meant to be comprehensive but, rather, is intended to provide a diverse overview of relevant efforts that have also had a reasonably large impact on the organizational sciences.

Holland's RIASEC Model

Most frequently utilized in the field of vocational guidance, John Holland's (1959, 1997) RIASEC typology categorizes occupational environments into one of six general types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E) and Conventional (C). Realistic environments allow employees to solve practical problems and work with tangible materials. Investigative environments allow employees to use inductive and deductive reasoning to systematically observe and examine complex phenomena. Artistic environments allow employees to engage in self-expression through symbolic means such as art and music and rarely require adherence to rules and regulations. Social environments allow employees to work and communicate in a manner that often involves helping or providing services to others. Enterprising environments allow employees to work on tasks and achieve goals, often

through projects that require decision making, persuasion, and a focus on financial considerations. Lastly, Conventional environments allow employees to work with data and details, often via a formal chain of command while following pre-set guidelines and procedures.

Although Holland's structure is relatively universal in the sense that any broad occupational environment can be classified as one of the six types (or a combination of multiple types), it is limited in a number of ways. First, the level of abstraction to which Holland's categories apply is not entirely clear. On the one hand, each category is quite broad but, on the other hand, it may be possible for these categories to be combined to form higher-order types of situations or for each category to be divided further into subtypes. Also, although Holland provides relatively specific definitions of each category in his circumplex, and implies that each resides on the pole of one of three dimensions, he does not provide explicit definitions of these dimensions (although subsequent work suggests that, perhaps, a two dimensional solution consisting of data/ideas and things/people might largely account for Holland's circumplex — see, for example, Prediger, 1982, 1996, and 2000). Thus, while Holland's theory may be a useful way for job seekers, employers, and vocational psychologists to conceptualize the nature of occupations, it provides little in the way of guidance for a more microscopic analysis of the nature and structure of specific work situations.

Trait Activation Theory

Another attempt to better understand the situational forces that affect employee behavior is Tett and Burnett's (2003) Trait Activation Theory (TAT). Drawing from the interactionist principle of "trait activation," this perspective allows for the

categorization of work situations in terms of five broad features that alter the expression of traits in unique ways. “Job demands” encourage employees to express positively-valued work behaviors by making rewards contingent on their manifestation. “Distracters” are aspects of situations that divert one’s attentional resources away from the task at hand. “Constraints” prevent the manifestation of traits by creating barriers to their full expression. “Releasers” provide an opportunity for the expression of a trait by over-riding the effects of constraints. Finally, “facilitators” increase the salience of pre-existing trait-relevant information. Although these authors did not empirically confirm the existence of these situational features, and although TAT is not a stand-alone taxonomy per se (e.g., whether or not a work meeting should be considered a facilitator or a distracter is not a function of the situation itself but is, instead, classified based on whether it improves or distracts from one’s performance), it does provide relevant information about the potential ways in which situations might affect human behavior at work.

Miscellaneous Primary Studies

A host of individual primary studies have also attempted to classify types of situations in order to understand their immediate main or interactive effects on a host of organizationally-relevant outcomes. Although the situational conceptualizations used by these studies tend to be rather ad hoc (i.e., they utilize a conceptualization of situational types to test a specific question, without attempting to create or facilitate connections to a broader literature of work situations), many have utilized novel perspectives and have found results that may be relevant to the present study. A few of

these efforts are outlined below in order to provide a general sampling of relevant research.

In attempt to better understand the ways in which individual differences predict organizational deviance across a host of work situations, Colbert, Harter, Witt, Mount, and Barrick (2004) drew from exchange theory and the norm of reciprocity to study the concept of “withholding effort” (a specific type of organizational deviance). These authors found significant main effects for both personality (e.g., high conscientiousness employees are less likely to withhold effort than low conscientiousness employees) and the extent to which the situation was developmental (i.e., more likely to experience positive attitudes toward the organization and reciprocate by putting forth increased effort when they experience situations that are characterized by challenge, support, encouragement, and feedback). Moreover, these authors also found a significant person-by-situation interaction, such that high conscientiousness employees are unlikely to withhold effort, even in non-developmental situations. These findings are, therefore, consistent with an interactionist perspective in the sense that significant effects exist for personality type, situational influences, and the interaction of the two.

Recognizing that learning is a major aspect of life in the modern workplace, Koopmans, Doornbos, and van Eekelen (2006) examined the situational contexts in which learning is most likely to occur. Using archival interview data collected from employees from a variety of occupations, these authors concluded that five broad categories of learning-relevant situations exist: 1) “regular job” (i.e., one’s day-to-day, job-specific tasks and activities), 2) attempting novel tasks, 3) seeking information, 4) providing information, and 5) thinking about work-relevant activities and issues.

Although this typology provides few details about the reasons why learning occurs in these types of situations, or which dimensions underlie these types of situations, it is useful because it provides a framework through which organizational scientists who are interested in better understanding work situations that are relevant to learning can do so in a consistent (as opposed to ad hoc) manner. The focus of the current study, however, is on a substantially broader level of abstraction.

Research Question 2 – What group of “types” best defines the total milieu of work situations?

Summary of Structure and Implications

As mentioned previously, the primary contribution of the current contribution to the proposed hierarchical taxonomy is that it categorizes types of work situations on the basis of the dimensions that define them. Consistent with this perspective, the two research questions outlined above are best viewed sequentially and interdependently. If, for example, a single, bi-polar dimension of interdependence is found to best define work situations, two general types will result: situations that score low on this dimension would be able to be categorized as “sovereign work situations,” whereas those that score high on this dimension would best be categorized as “affiliated work situations.” If, on the other hand, two orthogonal dimensions best define work situations, four general types will result (i.e., by forming a two by two grid), with the number of resulting types doubling for each additional dimension. Given that the empirical precision of observed solutions necessarily increases as the number of dimensions increases, taxonomic decisions must always be made by carefully

balancing the competing interests of categorical specificity and parsimony/interpretability (Lee, 2001; Wegener & Fabrigar, 2000).

The ideal end result of this process is the discovery of a parsimonious set of orthogonal dimensions that can be used to define a small but meaningful group of work situations. This end-product will have two broad implications. First, it will provide a conceptualization of work situations that will allow researchers to better understand and predict the direct and indirect effects of situational forces on workplace behaviors. This is the case because the situations provided here will allow researchers to examine behavior within broad categories (i.e., types) of situations, but will also simultaneously provide a priori information about the dimensions that define these types. This quality of the current taxonomy improves upon extant efforts because previous taxonomies have tended to focus on either types or dimensions, as opposed to recognizing and accounting for their interconnectedness (although exceptions do exist).

It is worth noting here that a variety of extant efforts to create a taxonomy of situations are thoroughly reviewed in Appendix D. Specifically, this appendix provides a systematic, yet succinct summary of research that is relevant to better classifying and categorizing types and/or dimensions of situations. Those taxonomies that are specifically focused on work situations were outlined previously in-text, but this appendix is designed to (a) provide additional relevant details (e.g., more specific information about the specific methods and samples utilized) and (b) provide information about taxonomies that focus on non-work situations. The current study is included as the last entry in this appendix to show how the current study compares to, and contributes beyond, the extant literature. For example, some of the most highly

cited extant taxonomies of situations (e.g., Jones & James, 1979; Karasek, 1979) focus solely on the dimensions that underlie situations, whereas other highly cited taxonomies (Amabile, Conti, Coon, Lazenby, & Herron, 1996) focus on a narrow subset of work situations. The present study, on the other hand, is designed to capture information about the dimensions that define types of work situations by utilizing diverse methods and a comprehensive stimulus generation procedure.

The second broad implication of the proposed structure is that it will serve as a starting point for continued research into taxonomic efforts of situations at levels of abstraction that are superordinate, isomorphic, and subordinate to work situations. That is, the methods and perspectives adopted in this study can not only serve as an example for other taxonomies of situations in other areas of inquiry, but might also allow taxonomies across a variety of literatures to be linked to the current taxonomy of work situations, thereby mimicking the nature and structure of the Linnaean taxonomy, and beginning to satisfy the numerous calls in diverse literatures to develop a comprehensive taxonomy of situations.

Ideally, the aforementioned qualities of the current taxonomy will improve upon extant efforts because a) previous taxonomies have developed in relative isolation, despite the fact that many areas of social science research posit effects for situations and b) like most other natural categories of targets (Berlin, 1992), situations may be able to be effectively categorized hierarchically, such that a series of progressively focused types of situations can be used to subsume specific situations. The following methods are designed to achieve each of the aforementioned goals in a psychologically meaningful manner.

METHODS AND RESULTS

Methodological Overview

Categorizing types of situations on the basis of their defining characteristics is an application of the “dimensional approach” to situational analysis, which typically consists of four steps (Argyle, Furnham, & Graham, 1981). Because each of these steps is relatively complex and yields statistical information that is built upon in subsequent steps, a combined “Methods and Results” section is used here to facilitate a logical transition throughout. For the same reason, the following paragraph provides a broad overview of each step and Figure 2 provides a visual summary thereof.

First, in order to represent adequately the stimulus population of interest (i.e., all possible work situations), work-relevant terms provided by actual employees were used to systematically create a sample of 150 similarly phrased stimuli (e.g., “pricing equipment and materials at a trade show,” “troubleshooting computer systems for a client”). Second, an independent sample of participants sorted these stimuli into groups (based on their holistic similarity), the data from which were then cluster-analyzed in order to examine the stimuli’s general structure. Third, two stratified random samples of these stimuli were drawn and the stimuli within each were compared in a pairwise fashion on the basis of their holistic similarity by two independent samples of participants. Lastly, the data from these samples were analyzed via multidimensional

scaling (MDS) to achieve this study's primary purposes (i.e., to identify the dimensions that underlie work situations and to define the types of work situations that these dimensions combine to form). Detailed methodological explanations of each of these steps and relevant results are provided below.

Step 1 – Defining and Developing the Population of Situations

The first step in the dimensional approach to situational analysis is to define the desired population of stimuli and obtain/develop a battery that approximates it. The target population of stimuli was broadly defined here as all possible work situations. In an attempt to approximate this population, work-relevant terms were obtained from two datasets provided by time-use researchers and entered into a sentence generator to create brief descriptions of work situations. Descriptions of the datasets used to derive the initial lists of terms are provided directly below, and a description of the procedures used to create situational stimuli from these terms is provided in the "Procedures 1" subsection.

Participants 1a

The first source of work-relevant terms was a dataset of employee activities collected during the development of the TimeCorder® device, an apparatus designed by Pace Productivity, Inc., to allow researchers to more precisely study the time use of employees (<http://www.paceproductivity.com/timecorder>). In the process of beta-testing this apparatus, 230 full-time employees used a daily diary method to provide descriptions of the work situations they experienced at four randomly-selected times per day within a five-day period. This resulted in 3,427 qualitative responses (due to missing data, the average participant provided 14.9 responses during the five-day

testing period). These responses were then dissected into their component parts (see Procedures 1 subsection for details) and used to help create the battery of stimuli used in this study.

Although specific demographic information about these participants is not available (all data were collected anonymously and development of the device did not require demographic data), the majority of participants were purportedly white-collar knowledge workers (e.g., sales and service representatives, managers, support staff), with the largest minorities representing blue-collar and engineering occupations (M. Ellwood, personal communication, February 7, 2008). Further, responses were collected from employed adults who lived in one of 31 countries with roughly equal numbers coming from men and women, who likely ranged in age from 20 to 65 years (M. Ellwood).

Participants 1b

A random sample of 1,971 adult residents (46% female) of the Halifax Regional Municipality (HRM) in Nova Scotia, Canada, also provided instances of work-related activities. These data were initially collected for the Halifax Space-Time Activity Research Project (2008), which was designed to better understand the time-use and activities of this municipality—a relatively diverse, costal metropolitan area of roughly 375,000 inhabitants. The average participant in this study was 45 to 54 years of age (with a range of 18 to 85), had at least some college experience (although 30% had only a high school education), and worked an average of 39.5 hours per week in his or her primary job. Categories of jobs represented in this sample were broadly defined as “public services” (42.5%), “miscellaneous white-collar” (20.8%),

“construction and manufacturing” (18.7%), and “wholesale and retail sales” (18%). It is also important to note that all 10 of the United States’ Department of Labor’s Standard Industrial Classification (SIC) codes were represented by this sample.

Procedures 1

Because participants from the aforementioned sources provided situational data at varying levels of granularity, specific responses were dissected into their work-relevant component parts (i.e., nouns, verbs, and contextual information), which were then reassembled to create descriptions of work situations at a consistent level of specificity—an important step given that the original stimuli obtained from participant groups 1a and 1b varied greatly in terms of their general scope. For example, verbatim responses from these participants ranged from “coaching” to “deal with customers” to “develop innovative and new ways of achieving client service results.” Although most of the original stimuli could be adjudged to be “situations” in the broadest sense of the word, a concerted effort was made here to utilize stimuli that were consistent with the definition of “situations” provided above (i.e., contained relevant information about the people, objects, actions, general circumstances, and physical/psychological/social conditions surrounding an activity at a specific point in time).

Dissecting the original stimuli into their component parts was also important because the original stimuli varied greatly in terms of their grammatical correctness and the appropriateness of their usage. Although some responses were relatively well written (e.g., follow up with customers via emails and phone calls), others contained sundry abbreviations, colloquialisms, and misspellings (e.g., “dr off wrk item to biz partner,” “re4view all and collateral doc and comm. Develop booking”). Utilizing raw

situational stimuli that varied so greatly in terms of their consistency and interpretability could have influenced participants' judgments in both random and systematic ways. For example, random error could have been introduced to the extent that unclear terms and usage distracted participants from the core intent of the item, whereas systematic error could have been introduced to the extent that unclear items were systematically judged to be more similar to each other than clear items (i.e., utilizing the original items could have introduced an irrelevant item "quality" dimension).

Given that essentially all responses contained work-relevant terms, but their structure and quality varied, it was possible to glean some information from them but not possible to use them in their original forms. Thus, two spreadsheets containing separate columns for verbs, nouns, and contextual information (i.e., terms pertaining to when, where, how, why, and with whom various situations occurred) were filled with the work-relevant terms contained in the aforementioned original responses. Two spreadsheets were necessary to adequately separate person-centered verbs (e.g., talking to, walking with) from object-centered verbs (e.g., arriving at, fixing a) and to ensure that these verbs were paired with appropriate nouns (e.g., "talking to a coworker" or "fixing a forklift" as opposed to "talking to a forklift" or "fixing a coworker"). All of these terms (including the contextual information) were derived from the qualitative data obtained from the employees described in the Participants 1a and 1b subsections; redundancies were eliminated for reasons of parsimony (e.g., some derivation of the verb "to provide" was included in dozens of the original responses, but only included once in the final list of work-relevant component terms).

The final terms (see Appendix E) were then entered into a random sentence generator, which was used to systematically create work-relevant, granularly consistent stimuli. One potential limitation of this process is that it implicitly assumes that every combination of component parts is equally likely to occur in an actual work setting. This, however, is likely not an empirically valid assumption. For example, “having lunch with a coworker” is likely much more common than “having lunch with the CEO,” but the system used here does not account for these discrepancies. That being said, these baseline differences are unlikely to systematically bias the results of this study unless an entire broad category of work situations is absent from the final sample of stimuli.

Using the procedures outlined above, the total number of possible combinations of these terms was roughly 31.9 million, but because a large proportion was necessarily nonsensical, a random sample of 1,000 was rated by two independent coders to determine the likely proportion of logical stimuli. Both coders had full-time work experience and knowledge of Industrial/Organizational Psychology and/or Human Resource Management. Specifically, one rater was a senior Psychology major who had taken several Industrial/Organizational Psychology and Business courses, and had six years of part-time work experience. The second coder was a full-time manager with a BA in Human Resource Management and more than 10 years of work experience.

Results 1

Coders used a 1-3 scale, wherein 1 = does not make sense, 2 = questionable, and 3 = does make sense. Those stimuli that both coders rated as “3s” (raw agreement = 91.4%) were retained for potential inclusion at later steps. The results of this coding

activity indicated that approximately 17.2% of responses were logical, yielding a total population of roughly 5.4 million possible work situations.

Step 2 – Obtaining an Adequate Sample of the Population of Situations

The second step in the dimensional approach is to obtain an adequate sample of the population of situations. Given the size of the population developed here, the dearth of guiding information regarding potential sub-populations, and the difficulty of obtaining accurate perceptions of large numbers of stimuli, a sample of 150 stimuli was selected at random from those that were rated as 3s (i.e., does make sense) by both coders in the previous step. The structure of these stimuli was then assessed in order to permit subsequent sampling procedures to be conducted in an empirically informed manner.

This sample is small compared to the total number of potential work situations, but two important points should be noted. First, logistical constraints necessarily limited the size of the stimulus set because all participants in this step were ultimately exposed to each stimulus during the sorting task described subsequently. Although little research exists regarding the length of time that participants are able to reliably engage in sorting activities, this particular task was designed to last roughly one hour. Despite the absence of clear norms regarding this particular type of activity, it is important to note here that the number of stimuli used in this study (150) exceeds that of relevant past research (the maximum number of situational stimuli that were sorted by actual participants in previous studies was 140; Yang, Read, & Miller, 2005). Second, the extent to which the stimuli represent the population of interest is arguably more important than the total number of stimuli used in a given study. In this case,

these stimuli were developed in a reasonably complete and systematic manner, thereby suggesting adequate coverage of the domain of interest.

Participants 2

Sixty five participants were recruited via a snowball sampling procedure, wherein acquaintances of the author who were employed full-time were a) contacted to participate and b) encouraged to contact employed acquaintances who might also be interested in participating. The final group of participants was 53.8% female, and had an average age of 37.6 years. The median household income of this sample was between \$81,000 and \$95,000 per year and the average participant worked 44.7 hours per week. Participants were blind to the specific intent of the study.

Stimuli 2

See Appendix F for a complete list of the random sample of 150 stimuli used in this step.

Procedures 2

In order to create meaningful subsets of the initial sample of 150 work-relevant situations, participants engaged in a “free sort” of these stimuli (Coxon, 1999). Specifically, a website (<http://www.websort.com>)⁴ was used to randomly present situational descriptions to participants who then placed these stimuli into homogenous categories of their own naming based on their holistic similarity (see Appendix G for instructions). This process created a 150 by 150 symmetric data matrix wherein values within each cell represented the number of participants who placed any two stimuli into the same category. Cluster analyses were then used to guide the stratified random sampling of stimuli for continued use and analysis (see the subsequent description of

Step 3). Cluster analysis was used here in lieu of alternative techniques (e.g., factor analysis) because it is better able to model count data (whereas factor analysis is designed to be used with correlation or covariance matrices; Van Mechelen, Bock, & De Boeck, 2004) that do not necessarily meet typical assumptions (e.g., multivariate normality; Everitt, Landau, & Lesse, 2001).

The “TwoStep” clustering procedure (SPSS version 16.0) was used in these analyses because it automatically determines the number of clusters present in a given dataset, instead of relying on the analyst’s subjective judgment to make this determination (SPSS, 2001). This is achieved by first creating the largest number of empirically justifiable categories (i.e., “pre-clusters”) by comparing the Akaike Information Criterion (AIC) derived from the entire dataset to those for successively smaller pre-clusters, until the ratio of the original to the new AIC for a given solution surpasses a pre-determined critical value (Bacher, Wenzig, & Vogler, 2004). Thus, this first step is designed to determine the maximum number of clusters in a given dataset.

The second step is focused on assessing and evaluating the extent to which information is lost by amalgamating these pre-clusters into larger, more heterogeneous clusters. Specifically, a ratio change function quantifies the Euclidian distances between the newly amalgamated clusters; when this change ratio surpasses a critical value (determined by the algorithm’s creators through a series of simulation studies—see Chiu, Fang, Chen, Wang, & Jeris, 2001), the amalgamation procedure stops, thereby leaving behind the smallest empirically justifiable number of distinct, but internally-consistent clusters (Bacher, Wenzig, & Vogler, 2004).

Two step clustering procedures are preferable to the two primary alternatives (i.e., K-means and hierarchical) because K-means procedures require that the cluster analyst has an a priori reason to expect a specific number of clusters and hierarchical procedures are not able to efficiently handle large numbers of stimuli (Van Mechelen, Bock, & De Boeck, 2004). Further, both K-means and hierarchical clustering algorithms require substantial subjective judgment on the part of the analyst (i.e., determining the number of clusters a priori with K-means and examining multiple nested clusters to determine the “best” solution with hierarchical clustering). The use of two step clustering algorithms circumvents each of these issues by selecting the best empirically determined solution—a task it does particularly well when used to detect the cluster structure of continuous data (Bacher, Wenzig, & Vogler, 2004).

Results 2

The two step procedure used here yielded a three-cluster solution wherein 18% of stimuli were members of cluster one, 42.7% of stimuli were members of cluster two, and 39.3% of stimuli were members of cluster three. It is also helpful to note here (although not necessarily vital to subsequent procedures) that cluster one generally consists of non-task situations, cluster two generally consists of task-relevant situations that require communication and interpersonal interactions, and cluster three generally consists of task-relevant situations that do not require communication or interpersonal interaction (see Appendix F for the cluster membership of each stimulus). Thus, because this three-cluster is both substantively interpretable and suggests that an important minority group of stimuli exists, this solution was then used to guide the

stratified-random sampling procedures that were used to create the two smaller and more manageable stimulus sets used in subsequent steps.

Step 3 – Obtaining Empirical Assessments of Selected Situational Stimuli

The third step in the dimensional approach is to obtain participants' perceptions of relevant stimuli. Although a variety of specific forms of participant perceptions could be utilized, the most effective is direct comparison data, wherein all possible pairs of stimuli are compared to each other on the basis of their holistic similarity or dissimilarity (Bijmolt & Wedel, 1995). This type of data is more effective than its primary alternatives (e.g., sorting tasks, conditional rankings, triadic comparisons) for a host of psychometric and logistic reasons (discussed in greater detail in the "Procedures 3" subsection).

Participants 3

A sample of 93 employed adults was obtained for the pairwise comparison portion of this study. The total number of participants was chosen on the basis of recommendations derived from the literature dealing with sample size requirements for the specific multidimensional scaling analyses used to interpret these data (e.g., Malhotra, Jain, & Pinson, 1988; Rodgers, 1991). This literature suggests that the probability of obtaining a model that provides adequate metric information asymptotes on a number of key indices (i.e., S-Stress, metric recovery, stimulus space recovery, matrix space recovery) at just under 15 observations (i.e., similarity judgments from 15 individual participants) per pairwise comparison of stimuli—a standard that was exceeded in this study.

A combination of three sources was used to obtain this sample of participants. First, 42 full-time adult employees were obtained via Syracuse University's "StudyResponse" project, which is an online service that facilitates behavioral, social, and organizational science research by electronically recruiting adult participants. Second, a snowball sampling procedure wherein acquaintances of the author were solicited for participation yielded an additional nine participants. Third, a sample of young adults who were employed at least part-time (i.e., worked a minimum of 10 hours per week) was obtained through a large Midwestern university's Introduction to Psychology human subjects pool ($N = 35$) and Introduction to Industrial/Organizational Psychology course ($N = 7$).

This sample was diverse with respect to a number of potentially-important characteristics. For example, participants worked between 10 and 65 hours per week ($M = 29.8$, $SD = 14.3$), had worked for an average of nine years in a full-time job, and had an average tenure of three years in their current position. Further, this sample was diverse with respect to a host of other demographic variables including ethnicity (77% Caucasian, 5% African-American, 16.4% Asian or Pacific Islander, and 1.6% Hispanic or Latino), gender (52.5% = female), and age ($M = 28.5$, $SD = 11.7$). Participants were again blind to the specific intent of the study.

Stimuli 3

Using the results of the cluster analysis outlined in "Procedures 2," two sets of 25 stimuli (i.e., stimulus sets 3a and 3b—see Appendix H and I, respectively) were selected for subsequent assessment. These stimulus sets were developed in a proportionally allocated stratified random fashion (i.e., based on the relative size of

each of the aforementioned clusters—Kalton, 1983), such that 9 stimuli were selected from cluster 1, 21 stimuli were selected from cluster 2, and 20 stimuli were selected from cluster 3. A stratified random procedure was used here because the aforementioned solution suggests that cluster one was substantially smaller than clusters two and three—thus, the ultimate sample was designed to best reflect this proportionality.

If instead of using a stratified approach, one-third of the ultimate sample had been randomly selected from each cluster, the final results would potentially have been skewed due to a disproportionate number of the ultimate stimuli being from the first cluster. That is, 18% of all stimuli were concluded to be members of the first cluster, but if the selection of the final stimulus set was conducted in a non-stratified manner from each of the clusters, cluster 1 stimuli would have been over-represented by nearly a factor of two (i.e., 33% compared to 18%) and the members of the second and third cluster would have been slightly under represented. Selecting at random from the entire population, on the other hand, would yield a representative sample in theory, but stratified random sampling was the only way to guarantee this outcome. That is, given the sample-to-population ratio of the present study (~110,000:1), sampling error alone creates the non-trivial chance that a disproportionate number of stimuli from any cluster may be under- or over-represented in the ultimate sample (Fink, 2008).

Procedures 3

Participants compared the extent to which each stimulus within a given set (i.e., either stimulus set 3a or 3b) was viewed as similar or dissimilar to each of the other stimuli within the same set. Despite the availability of other methods of assessing the

dimensional nature of targets, pairwise similarity judgments offer a number of advantages over alternatives. Before assessing the relative merits and demerits of pairwise similarity judgments, however, it is necessary to describe and assess its primary rivals.

First, sorting tasks like the one used in “Procedures 2” can be used to assess a stimulus set’s dimensional structure, but these procedures are limited by their inability to accurately recover known distances between data points (Bijmolt & Wedel, 1995). Thus, sorting tasks are best justified when the number of stimuli to be assessed is large, because their primary benefits are that they are able to be completed efficiently and intuitively by participants with varying degrees of knowledge about the stimuli in question. Second, triadic comparisons require participants to judge which of three stimuli form the most and least similar pair. Although quite good from a psychometric perspective (minus the fact that this technique is not able to adequately handle missing data), the primary limitations of this approach are logistical—that is, triadic comparisons have been shown to take an unduly long time to complete and induce boredom and fatigue among participants (Bijmolt & Wedel). Lastly, conditional ranking tasks require that participants compare all stimuli to a target stimulus in terms of general similarity; this process is then repeated until each stimulus is ultimately treated as the target comparison. Although this method performs quite well from a dimensional perspective, its primary limitations are again logistical, in the sense that it tends to lead to prohibitively large amounts of participant fatigue and boredom, thereby minimizing the number of stimuli that can be assessed and increasing the amount of error variance observed in the ultimate dataset (Bijmolt & Wedel).

Pairwise comparisons, therefore, offer a number of benefits over the aforementioned alternatives. First, they are the most frequently used approach (Borg & Groenen, 2005), so the knowledge-base associated with this technique is relatively well established. Second, research suggests that pairwise comparisons generally take a reasonable amount of time to complete; slightly more than sorting tasks, but substantially less than triadic comparisons and conditional rankings (Bijmolt & Wedel, 1995). Third, pairwise data provide superior solutions compared to alternatives because they (a) permit the accurate recovery of known distances, (b) provide accurate fit statistics, and (c) are able to detect known dimensional structures (Borg & Groenen). Fourth, pairwise data permit the analyst to effectively deal with missing values, in that missing data can be built in to one's dataset, as opposed to being left to the discretion of individual participants. Lastly, pairwise comparisons are generally viewed favorably by participants with respect to self-reported fatigue and boredom (Bijmolt & Wedel, 1995).

The primary limitation of pairwise comparisons, however, is that the number of possible ratings increases multiplicatively as the number of stimuli increases.⁵ Given that 50 stimuli were selected for inclusion in this particular phase of the present study, a total of 1,225 pairwise comparisons were possible. Because this number is too large for any given participant to respond to, the following alternative was utilized instead. First, the initial set of 50 stimuli was randomly divided into two equally sized subsets (i.e., 25 stimuli each, with 2 stimuli included in both stimulus sets as a means of providing confirmatory evidence of the ultimately selected solution). Second, because 25 stimuli still yield a relatively large number of unique pairs of stimuli (i.e., 300), six

lists of 150 randomly-ordered comparisons were developed (three for each subset of 25 stimuli) in order to minimize order-effects. Third, each participant was exposed to one of these six lists of 150 pairwise comparisons. Procedures such as this have been shown to help alleviate the problems associated with obtaining pairwise comparisons of a large number of items, while retaining the solution's metric integrity (Thompson, 1983).

Three important points, however, should be made here. First, in order to validate the structure obtained by these analyses, this procedure was conducted twice, using two independent samples of stimuli (i.e., stimulus sets 3a and 3b) and participants (roughly half of the respondents described in the "Participants 3" subsection were exposed to each stimulus set). Second, because the analyses used for this step allow for large amounts of missing data, a given participant only rated half of the pairwise comparisons, but adequate numbers of judgments were ultimately made for all comparisons. This led to roughly 50% of the data missing completely at random (Schafer & Graham, 2002), a proportion that typically has a minimal impact on ultimate solutions under most conditions (i.e., solutions with these levels of missing data typically account for 80-95% of the variability in solutions derived with no missing data; Spence & Domoney, 1974). Third, in order to create an estimate of test-retest reliability, three pairs of stimuli were repeated within each stimulus group.

In line with previous studies that utilized pairwise comparisons (e.g., Darcy, Lee, & Tracey, 2004; Eckman, 1954; Grote & James, 1989; Lohse, Walker, Biolsi, & Reuter, 1991), "similarity" was defined loosely, so that participants were not primed to focus on specific aspects of the situations in question (see Appendix J for specific

instructions, which were based on previous exemplars—e.g., Farrell, 1983; Krantz & Tversky, 1975; Robinson & Bennett, 1995), but they were primed to focus on those aspects of the situations in question that were obvious to an impartial observer (i.e., canonical situational characteristics). All comparisons were made on a 1-7 scale where 1 = very dissimilar, 2 = dissimilar, 3 = somewhat dissimilar, 4 = neither similar nor dissimilar, 5 = somewhat similar, 6 = similar, and 7 = very similar. Because the statistical procedures utilized here interpret lower values as indicative of greater similarity, however, all observations were reverse-scored prior to analyses. These responses were then used to create a 25 by 25 square symmetric matrix for each participant wherein cells represented a particular participant's comparison of two stimuli (a structure that is necessary for the specific analyses used here).

Results 3

As mentioned previously, three items were repeated for all participants in order to assess levels of test-retest reliability. Perceptions of each of the repeated items were reasonably consistent in the sense that the bivariate correlations between them were positive, strong, and significant at the $p < .01$ level ($r_s = .83, .74$, and $.83$ for stimulus set 3a and $.79, .62$, and $.74$ for stimulus set 3b, respectively). These repeated stimuli were also used to help eliminate participants who did not appear to take participation in this task seriously. Specifically, the ultimate group of 93 participants began as a set of 119, but 26 were eliminated because they: (a) showed disagreement with themselves of at least three points on at least two of the repeated stimuli, and (b) showed multiple judgments that diverged by three or more points from the item mean of those stimuli that showed strong agreement across participants (i.e., skew values greater than $|1.0|$

and kurtosis values greater than 11.51). Participants who showed absolutely no variability in their responses (e.g., rated all pairwise stimuli as “4s”) were also eliminated from the final dataset.

Step 4 – Analyzing Responses to Determine the Nature and Structure of Stimuli

The final step in the dimensional approach is to use appropriate statistical analyses to determine the dimensional structure of the situational stimuli in question, so that these dimensions (and the resultant types of situations) can subsequently be interpreted. The most effective method of achieving these goals with pairwise data is multidimensional scaling (MDS; Argyle, Furnham, & Graham, 1981), which is a family of geometric procedures designed to visually model the similarity/dissimilarity of targets in terms of physical distance on an output map. From a statistical perspective, the primary advantage of MDS over related techniques such as factor analysis is that MDS does not make assumptions about the nature and distribution of the data used in the analyses—indeed, MDS requires no specific data assumptions to be met (Kruskal, 1964).

At a more conceptual level, MDS is particularly useful in the context of this study because it is uniquely equipped to be used with distance data (Borg & Groenen, 2005), as opposed to correlation matrices. The main benefit of this distinction is that MDS allows participants to utilize their own perspectives when assessing targets (as obtained, for example, through pairwise comparisons), as opposed to rating the targets in terms of characteristics that are presupposed by the researcher to be important. Thus, MDS is particularly well-suited for exploratory assessments of relationships among stimuli that best mimic the global judgments of participants. This, however, requires

“data-guided speculations about the psychology of those who generated the similarity data” (p. 11); thus, there are a number of procedural issues that must be considered when analyzing MDS data.

Procedures 4

The MDS procedures used here are known as “metric-based individual differences decompositional approaches,” meaning that interval- or ratio-level data (i.e., data that quantify the dissimilarity of the stimuli, as opposed to just providing information about stimuli’s relative dissimilarity)⁶ are used to represent the responses of multiple individual participants in a manner that does not require any a priori expectations of underlying dimensions on the part of the experimenter (Carroll & Arabie, 1980). Said differently, the metric patterns formed by individual participants are amalgamated to inform researcher judgments regarding the dimensions that underlie a given set of stimuli for a given sample of participants.

The alternating least squares scaling (ALSCAL) algorithm (Young & Lewyckyj, 1979) in SPSS (version 16) was used for all analyses. This algorithm creates spatial representations of stimuli by utilizing dissimilarity estimates to calculate importance weights (i.e., the initial stimulus coordinates calculated on the basis of an individual participant’s perceptions) and coordinates (stimuli’s locations in a given dimensional space amalgamated across participant perceptions) via iteratively enacted least squares procedures (hence the use of the term “alternating” in this algorithm’s name). Although other MDS algorithms exist (e.g., MULTISCALE, which uses a maximum likelihood estimation procedure; PROXSCAL, which uses an iterative majorization estimation procedure), the ALSCAL algorithm is not only the most

commonly used (Borg & Groenen, 2005) but is also the most versatile in the sense that it can analyze nominal, ordinal, interval, and/or ratio-level data (Young & Null, 1978). Further, this algorithm has been shown to provide accurate matrix recovery (i.e., to recreate the original dataset based on a correctly selected dimensional solution) with up to 60% missing data (Rogers, 1991; MacCallum, 1977).

Interpreting the results of MDS analyses, however, is not an exact science because numerous tradeoffs and relatively subjective decisions must inevitably be made. Specifically, the only solution that is guaranteed to fit one's data perfectly is one wherein the resultant number of dimensions (\underline{m}) is equal to the original number of stimuli (\underline{n}). In this study, 25 stimuli were used for each MDS analysis, so a 25-dimensional solution will fit the data perfectly. However, such a solution is generally not useful because one of the primary goals of MDS is to create a meaningful visual representation using the smallest possible number of dimensions (Wegener & Fabrigar, 2000). Finding the appropriate balance between explanatory power and parsimony, however, is not merely an empirical issue, in the sense that it should also be informed by practical and theoretical considerations (Kruskal & Wish, 1978). Consistent with extant recommendations (e.g., Davison, 1983; Torgeson, 1952), several models (ranging from one to six dimensions) were tested in order to compare their empirical fit, interpretability, and parsimony. Each of these considerations is discussed in greater detail below in order to help assess the relative merits of each model.

Results 4

The empirical fit of rival MDS models can be assessed using a variety of tests and indices. The most common is Kruskal's (1964) stress index, which quantifies the

extent to which the actual distances between items must be altered in order to fit onto a map of a given dimensionality (i.e., higher stress indicates poorer fit). Stress, however, is influenced by a number of factors that must be considered when determining the ultimate dimensional solution. Although these issues are discussed in detail below, the fact that stress is multiply influenced means that general standards for assessing it (e.g., Kruskal's [1964] original benchmarks of .20 = poor, .10 = fair, .05 = good, and .00 = perfect) are necessarily suspect (Borg & Groenen, 2005). Instead, stress standards should be adjusted for a number of considerations and the analyst should bring several lines of evidence to bear in order to ideally balance the added explanatory power of a given solution with its parsimony and theoretical interpretability.

One of the most important issues to consider when determining the appropriate amount of stress to allow is the reliability of one's data. Specifically, MDS accounts for the fact that constructs in the social sciences are rarely (if ever) measured without error by permitting "acceptable" stress values to increase as the level of unreliability in one's data increases. Indeed, "if information is available about the reliability of the data, one should choose a dimensionality whose stress corresponds to the random component of the data" (Borg & Groenen, 2005, p. 47). Given that rough estimates of the reliability of the data used in this study (i.e., the test-retest reliability estimates discussed above) suggest that the random component of the data corresponds to a value of roughly .24 (i.e., the average r for the repeated items equals .76), this suggests that a dimensional solution should be selected that has a stress value of somewhere around .24. This, however, is merely one potential standard—others derived from other relevant considerations should also be examined.

The number of targets assessed has also been shown to increase the amount of observed stress in a given dimensional solution. This is especially true as the number of observations is compared to the number of potential dimensions. For example, one early standard for determining the amount of acceptable stress (i.e., that stress be $< .15$ —Porrat, 1974 [as cited in Borg & Groenen, 2005]) was based on the assumption that the number of assessed stimuli was not substantially larger than the number of dimensions being considered in a given solution. If, however, the number of assessed stimuli is ten or more times larger than the number of dimensions in question, stress requirements should be relaxed (Borg & Groenen). Unfortunately, however, little information is available to determine the extent to which this standard should be relaxed, but it is clear that the stress $< .15$ standard is overly stringent for a either a one- or two-dimension solution in this study because the number of items assessed (i.e., 25 in each stimulus set) is more than ten times greater than the number of dimensions in both of these cases.

Lastly, the stress of a given solution should always be compared to the expected stress of random data. Although this is a very low standard, surpassing it should be viewed as necessary but not necessarily sufficient. Given the inflammatory effects of the issues discussed previously, determining the level of expected stress in purely random data is not necessarily a simple task. Several simulation studies, however, have provided important insights into this question by attempting to determine the specific stress values that should be observed under a variety of relevant conditions. One such study (Spence & Ogilvie, 1973) calculated the amount of stress that should be expected given 12, 18, 26, 36, and 48 observations in one through five dimensional solutions.

Using these results, Spence (1979) then developed an equation for estimating the amount of stress that would likely result from random data based on parameters chosen by the analyst.⁷

Solving this equation for the conditions utilized in the present study suggests that the expected stress of random data for 25 observations is .50, .32, .23, .18, .14, and .12 for one- through six-dimensional solutions, respectively. Comparing these values to the actual stress values obtained in this study (see Table 2) suggests that nine of the 12 potential dimensional solutions across stimulus sets 3a and 3b show less stress (i.e., better fit) than that which is expected using random datasets, one (i.e., the four-dimensional solution in stimulus set 3b) shows identical stress, and two (i.e., the five- and six-dimensional solutions in stimulus set 3b) show more stress.

Additionally, scree plots (wherein stress is plotted on the vertical axis and dimensionality is plotted on the horizontal axis) can also be used in MDS to help evaluate the acceptability of observed stress values across a host of dimensional solutions (Borg & Groenen, 2005). This tool allows the analyst to visually identify the point beyond which the empirical value added by increasing the number of dimensions ceases to be “worth” the added complexity of the model. An important difference between the interpretation of scree plots in factor analysis and MDS, however, should be noted here. Specifically, the contemporary version of the stopping rule for eigenvalues in exploratory factor analysis counts only eigenvalues that precede the scree, and therefore excludes the elbow itself from being counted among the number of factors (De Ayala & Hertzog, 1991; Hayton, Allen, & Scarpello, 2004; Preacher & MacCallum, 2003). In MDS, however, the stopping rule for stress values includes the

elbow among the number of dimensions, meaning that “the elbow should occur directly over the appropriate dimensionality” (Davison, 1983, p. 91). As is demonstrated in Figure 3, the closest approximation to an elbow is associated with the two-dimensional solutions, in that stress values drop dramatically from a one- to two-dimensional solution, then decline less precipitously in solutions with more than two dimensions. Thus, because stress is a “badness of fit” index, the most appropriate interpretation of these scree plots is that a one-dimensional solution fits the data substantially less well than a two-dimensional solution, and that the efficiency of the solutions increases less dramatically beyond two dimensions.

The summary of stress as it pertains to the parameters of this particular study suggests that three important points be considered. First, the traditional standard of stress having to be less than .15 is overly stringent. Second, the estimated amount of error in the measures used here suggests that the ideal amount of acceptable stress for a given solution is near .24, a value that is below the amount of stress that would be expected due to random error for one-, two-, and (nearly) three-dimensional solutions. Third, the elbow in the stress-by-dimension scree plot occurs above the two-dimensional solution. As mentioned previously, however, stress is just one issue to consider when attempting determining the best dimensional solution for a given data set—other pieces of information should also be considered.

One piece of information that is often considered in addition to stress is the average R^2 values, which represents the proportion of variance in the original data that can be explained by each dimensional solution (Borg & Groenen, 2005). The typical standard for this statistic is that R^2 values $\geq .60$ are considered “acceptable,” but

specific values must be viewed through the lens of ultimate interpretability and should, again, be relaxed for larger stimulus sets and unreliability (Borg & Groenen). As is evidenced by Table 2, the traditional $\underline{R}^2 \geq .60$ standard is not met until one considers a three-dimensional solution. This however, should also be interpreted in conjunction with the fact that a rather large increase in \underline{R}^2 values occurs between the one- and two-dimension solutions for both stimulus sets, but the difference between the R^2 values begins demonstrating less dramatic effects for the remainder of the single-dimension increases.

The totality of the statistical considerations outlined above suggest that a one-dimensional solution lacks adequate fit and discriminative power to be empirically, theoretically, and/or practically useful. That is, the stress values for both of the one-dimensional solutions are substantially higher than those for the alternative solutions (meaning that a one dimensional solution represents the original data substantially worse than the others) and the \underline{R}^2 values for a one dimensional solution suggest that a proportionately small amount of variance is accounted for in this solution. Thus, a one-dimensional solution will not be considered further

Additionally, these statistical considerations also suggest that the explanatory power of the four-, five-, and six-dimensional solutions do not add enough benefit to justify their substantial increase in model complexity. Specifically, dimensional solutions this large have generally been shown to be prohibitively difficult to interpret, meaning that they have to show clear evidence of improved explanatory power if they are to be seriously considered (Borg & Groenen, 2005). Because the fit indices associated with these solutions do not demonstrate such evidence (especially

considering that the stress values for these dimensional solutions for stimulus set 3b are greater than or equal to those that would be expected in a random dataset) the only models that will be considered further are the two-dimensional and three-dimensional solutions.

A direct comparison of the relative merits and demerits of these two solutions suggests that the two-dimensional option is the superior choice. Although the three-dimensional solution (by definition) yields superior stress and \underline{R}^2 values, the improvements in both are relatively trivial. Further, this relatively modest increase in explanatory power is accompanied by a two-fold increase in the model's complexity (a three-dimensional solution ultimately yields eight types, whereas a two-dimensional solution yields four) and, therefore, runs the risk of attempting to model random noise. Indeed, an attempt to substantively interpret the third dimension suggests that this is a distinct possibility here, in that this dimension made substantially less conceptual sense than the two-dimensional structure (although dimensions one and two were consistent across both solutions). For these reasons, the more parsimonious two-dimensional structure was selected for substantive formal evaluation. A more thorough discussion of the nature of this solution, as well as its implications for continued research and practice, is provided below.

DISCUSSION

Dimensional Interpretation

Two interrelated steps are necessary to interpret the proposed solution: detecting distinct structures and interpreting their meaning. It is important to note here that, although any and all structures (e.g., clusters, lines, shapes, distances) have the potential to be substantively interpreted (Kruskal & Wish, 1978), the first portion of the interpretation process was prescribed by the goal of this study (i.e., to detect and understand the stimuli's dimensional structure). The following sub-sections are, therefore, dedicated to interpreting the meaning of the dimensions resulting from the MDS analyses outlined above. One way to begin this process is to examine the content of those stimuli that are relatively pure exemplars of each dimension—that is, situations that score either high or low on the dimension of interest, but score near zero on the other dimension.

Specific stimuli that are particularly pure exemplars of the first dimension include: “communicating new safety compliance standards because the law requires it,” “planning a conference because it is part of my job,” and “locating data in order to comply with regulations” (on the high end) and “waiting for the branch's sales staff at a coffee shop,” “writing personal emails while I'm supposed to be working,” and “discussing problems with direct reports as part of a team building activity” (on the

low end). These exemplars initially suggest that stimuli on the high end of this dimension are characterized by relatively necessary, externally controlled aspects of one's job, whereas those on the low end of the first dimension have less to do with one's actual tasks/duties and entail few external considerations, thereby allowing for substantially more individual discretion.

To assess more formally the veracity of this potential interpretation, the stimuli used in this study were rank-ordered by their score on this dimension and examined for conceptual consistency in order to examine whether changes in the location of the stimuli on the dimension of interest reflect the proposed changes in stimulus content. As evidenced by Tables 3 and 4, this conceptualization of the first dimension holds reasonably well across both stimulus sets, in the sense that the stimuli tend to get less formal as the values representing their physical location on the MDS map decrease.

Specific stimuli that are particularly pure exemplars of the second dimension include: "cleaning animal enclosures in order to comply with regulations," "fixing a forklift at the jobsite," and "tabulating the parts department's time sheets" (on the high end) and "inquiring about a product's availability from another store," "coaching and developing students outdoors," and "going over mortgage rates with a client" (on the low end). These exemplars initially suggest that the high end of this dimension can be characterized as situations wherein the primary focus is on ensuring that necessary functions can continue in their regular and expected manner, whereas the low end of this dimension can be characterized as situations that are oriented toward future functionality. Tables 5 and 6 also support this interpretation in the sense that the stimuli tend to get more future-oriented as the values representing their physical location on

the MDS map decrease. Given these lines of evidence, the following paragraphs fully define each of these dimensions in order to better understand their nature and implications. Where applicable, tables and figures are referenced to facilitate understanding.

Dimension 1: Formality-Informality

The first dimension of the accepted solution (represented by the horizontal dimension of Figures 4 and 5)⁸ can be said to represent formality versus informality. As in other relevant literatures, formality (sometimes also referred to as “formalization”) is defined here as: the presence of “written rules, procedures, and instructions” (Adler & Borys, 1996; p. 62). Those stimuli that are clustered toward the right end of this dimension represent work situations wherein procedures, interactions, and exchanges are informed by established norms, conventions, and/or policies. Stimuli used in this study that are highly formal (irrespective of their standing on the second dimension) include: “calculating payroll as efficiently as possible,” “presenting our financial plan to the board of directors,” and “checking for system errors as part of my project management duties.” Although diverse in terms of their content, all of these situations are highly formalized, in the sense that external guidelines implicitly exist regarding how to behave properly and some form of accountability is likely in place to address instances of “improper” behavior.

Conversely, those stimuli that are clustered toward the left end of this dimension are those that describe work situations wherein the “appropriateness” of behaviors is more open to debate, discussion, and idiosyncratic agreement among those involved. For example, stimuli used in this study that score low on this dimension (i.e.,

are relatively informal) include: “attending a company-sponsored fitness class with my coworkers,” “chatting with a coworker in the break room,” and “visiting with a coworker while the computer system is down.” Thus, the content of these situations is generally focused on those aspects of work situations that occur outside of the realm of the organization’s formalized procedures.

This dimension has parallels with efforts in previous literatures that have also explored the underlying dimensions of situations. For example, Blau’s notion of social exchange (with the informal pole corresponding to social exchanges and the formal pole corresponding to economic exchanges), Moos’s dimension of system maintenance and change, and Edwards and Templeton’s (2005) dimension of “ease of negation” are all derivations of conceptually similar ideas. In each of these perspectives (as well as the current one), situational cues are posited to provide specific, detailed information regarding expectations and acceptable/unacceptable behavior. At a theoretical level, then, these boundary conditions can be predicted to homogenize behaviors by restricting individual decision making latitude.

The most likely practical outcome of this restriction in behavioral and statistical variance is attenuated correlations between non-cognitive individual differences and relevant outcomes. That is, the presence of external guidelines and formal expectations diminishes the trait-based performance advantage that some employees naturally have by removing the opportunity for their individual discretion to affect their subsequent performance. Indeed, formalized procedures have long been argued to limit the opportunity for individual judgment and idiosyncratic behavior (e.g., Cooper & Withey, 2009; Weber, 1922/1978) by constraining the domain of potential responses

that employees can demonstrate. This is the case because formalized procedures not only provide the mechanisms through which such expectations are communicated, but also provide the mechanism through which relevant behaviors are documented (Adler & Borys, 1996). Indeed, similar arguments have been made, and generally supported, in a number of relevant empirical investigations (e.g., Barrick & Mount, 1993; Fleeson, 2007; Meyer, Dalal, & Bonaccio, 2009).

Dimension 2: Maintenance-Development

The second dimension of the accepted solution (represented by the vertical dimension of Figures 4 and 5) can be said to represent maintenance versus development. This dimension is defined here as: the extent to which the policies and/or perspectives relevant to the situation in question are focused on either current (i.e., maintenance) or future (i.e., development) functionality. Those stimuli that are clustered toward the top of this dimension represent work situations wherein the primary focus is on ensuring that the tools and procedures necessary to continue engaging in relevant activities are in place and functional. Stimuli used in this study that are highly maintenance-oriented (irrespective of their standing on the first dimension) include: “writing up time and attendance records in my office,” “covering equipment and materials to protect them from the elements,” and “engaging in routine report preparation for my manager.” Again, these situations are diverse in terms of their content, but each focuses on ensuring that the facilities, records, and/or equipment necessary to complete relevant tasks are predictably in place.

Conversely, those stimuli that are clustered toward the bottom of this dimension are those that tend to describe work situations wherein the behaviors of employees are

focused on future considerations. For example, stimuli used in this study that score low on this dimension (i.e., are relatively developmental) include: “interviewing a potential employee at the main office,” “providing information to potential investors at a business lunch,” and “talking about incoming trucks at a meeting.” Thus, the content of these situations is generally involves aspects of work situations wherein the primary focus is on ensuring that the organization can adequately address future needs.

The maintenance-development dimension presented here has few natural parallels with extant situational analyses, but this divergence should not necessarily be viewed as a shortcoming. Instead, the novelty of this dimension may be explained by the comprehensive stimulus generation procedures used in this study, the intentional focus on broad work situations, or some other factor. Regardless, its presence likely has implications for explaining, predicting, and managing employees’ behaviors.

For example, concepts such as divergent thinking (McCrae, 1987) and “future time perspective” (Thoms & Blasko, 2004) are generally rooted in one’s ability and willingness to anticipate the future, whereas concepts such as conscientiousness and neuroticism are focused on maintaining the status quo; conscientiousness because of its emphasis on order and tradition (Roberts, Chernyshenko, Stark, & Goldberg, 2005), neuroticism because of its emphasis on dogmatic thinking (Watson, 1967). Thus, the extent to which a given employee demonstrates a dispositional tendency toward either the present or the future will likely influence his or her success and/or satisfaction with specific types of work situations that vary in terms of their orientation toward maintenance versus development.

Types of Work Situations

Now that the dimensions underlying this solution have been defined and interpreted, it is necessary to examine the ways in which they combine to form unique types of situations. This is especially important because these dimensions are necessarily orthogonal (a defining feature of MDS), meaning that each provides unique (i.e., non-redundant) information. Thus, resulting quadrants form unique types of work situations that can be examined for their psychological meaning and potential effects. One could argue that the process of identifying types of situation was already initiated via the cluster analyses outlined above, but the results of these analyses are limited by the fact that they do not provide information about the characteristics that define these types of situations.

This perspective is best demonstrated in the context of this study by highlighting that members of two of the three aforementioned clusters vary greatly in their scores on one or more dimensions when cluster membership is superimposed upon the proposed dimensional solution. For example, scores of members of cluster 2 (i.e., task-relevant situations that require communication and interpersonal reactions) range from 1.32 to -1.02 on the formality-informality dimension of solution 3b, suggesting that cluster membership is neither a necessary nor a sufficient way to glean information about the dimensions that define a given situation. Thus, the remaining sections are dedicated to examining the types of work situations that result from the aforementioned dimensions, as opposed to relying on cluster membership alone.

One particularly effective way of beginning this process is by identifying stimuli that represent prototypes of a given quadrant so that they can be examined for

conceptual consistency and meaning (Borg & Groenen, 2005). Specifically, those stimuli that represent moderate-high and/or moderate-low scores on both dimensions (i.e., those that are located in the center of a given quadrant) are the ideal candidates for this type of analysis because they represent relatively balanced combinations of the underlying dimensions. The following sections interpret each of the four quadrants of the proposed two-dimensional structure in order to better understand the implications of each type.

Bureaucratic Work Situations

Characterized as both “formal” and “maintenance-oriented” (i.e., quadrant 1 in Figure 6), bureaucratic work situations are those wherein behaviors, perspectives, and mechanisms involved are intentionally established as a means of facilitating the continued enactment of policies and/or procedures. In the context of this study, situational stimuli that are best categorized into this quadrant include: “writing up time and attendance records in my office,” “faxing client orders to the main office,” and “filling out my timesheet at the end of the day.” The notion that bureaucratic situations focus employees’ behaviors on maintenance (as opposed to innovation and development) means that creativity and other forms of future-oriented behaviors are likely to give way to behaviors that are consistent with the perspectives and ideals of those who designed and maintain the bureaucracy, as opposed to an individual employee’s idiosyncratic will.

Strategic Work Situations

Although similar to bureaucratic situations in the sense that both contain elements of formalization, “strategic work situations” differ because behaviors,

procedures, and perspectives are focused on future concerns/issues, as opposed to being focused on maintaining pro forma organizational policies and practices. In the context of this study, situational stimuli that are best categorized into this quadrant include: “consulting with a stakeholder based on details outlined by my boss,” “presenting our financial plan to the board of directors,” and “calling a supplier while working late.” Thus, success within a strategic situation is not merely contingent upon coming up with ideas that anticipate future needs, but is also contingent upon having the specific procedural knowledge necessary to implement these ideas within the confines of formalized considerations.

Incubative Work Situations

Still maintaining a developmental perspective, incubative situations differ from strategic situations in the sense that they tend to be more informal because the development of people and/or ideas tends to occur in a manner that is less rigid and less restricted by practical or logistical considerations. In the context of this study, examples of situations that represent this quadrant include “attending a presentation in another department,” “discussing issues with the production staff during operational downtime,” and “discussing problems with my direct reports as part of a team-building activity.” Incubative work situations are, therefore, conducive to “big picture” thinking wherein employees are encouraged to consider myriad ideas and perspectives without necessarily embracing them fully because the primary focus is on ideas for their own sake, as opposed to ideas that are intentionally and specifically focused on solving problems in a practically viable manner.

Prosaic Work Situations

Lastly, prosaic work situations represent the mundane, day-to-day activities that must be completed in order to ensure that work activities are able to continue uninterrupted (i.e., are maintenance-oriented), but do not typically necessitate policies and procedures that dictate how to do this (i.e., are informal). In the context of this study, situations that represent especially pure indicators of this quadrant include: “fine-tuning equipment in the workshop,” “tidying my studio after work,” and “covering equipment and materials to protect them from the elements.” It is important to point out here that prosaic situations are a necessary component of nearly all jobs and, as a consequence, they likely do not influence job-attitudes under normal conditions. It is only in relatively rare instances wherein one’s job is dominated by prosaic situations or when prosaic situations require substantially more time or effort than is expected (e.g., one’s computer takes 15 minutes to boot up in the morning), where they are likely noticed enough to influence important outcomes.

Implications and Future Research

The taxonomic system proposed here, which classifies types of work situations on the basis of the dimensions that define them, is important for a number of theoretical, practical, and taxonomic reasons. From a theoretical perspective, psychologists have long argued that behavior is a joint function of persons and situations (e.g., Cronbach, 1957; Hattrup & Jackson, 1996; Lewin, 1936), yet the tools to predict and model person-situation interactions have not yet been fully developed. Thus, the system proposed here begins to provide a common framework on which specific and consistent interactional questions can be based. From a practical

perspective, the aforementioned information can be used to determine which behaviors are most likely to lead to relevant outcomes (e.g., performance, satisfaction) and, as a consequence, which traits can best be used to predict these outcomes. From a taxonomic perspective, the dimensions and types outlined here can serve as the foundation for a structure that can be used to categorize work situations at additional levels of abstraction and in other (i.e., non-work) domains of life. Each of these issues is explored in greater detail below.

Theoretical

As mentioned previously, one of the primary theoretical perspectives that would benefit from a more thorough understanding of work situations is interactionism (Hattrup & Jackson, 1996). The fundamental tenets of interactionism have long been endorsed by researchers from a variety of traditions, but one of the primary reasons why this perspective has yet to come to full fruition is that the social sciences lack an adequate taxonomy of situations (Endler & Magnusson, 1976; Endler & Parker, 1992; Hattrup & Jackson, 1996). Indeed, a number of investigators in a number of disciplines have argued that researchers' understanding of "the situation" is not yet advanced enough to develop interactional theory in a manner that allows researchers to frame and communicate their findings in a common manner, regardless of their perspective of discipline of focus (see Appendix C).

An example of a specific literature that might benefit from this perspective is research designed to foster employee creativity by understanding relevant individual differences in conjunction with relevant situationally-based social-psychological forces (see, for example, Shalley & Perry-Smith, 2001). Consistent with the taxonomic

perspective outlined in this study, this line of research has generally found that employees are more likely to demonstrate creativity when they are evaluated in an informal manner and when influential others tend to demonstrate creative behaviors. Using the parlance of the present taxonomy, these findings suggest that creativity should be most common in incubative situations and least common in bureaucratic situations. Thus, the system outlined in the present study not only provides a psychologically meaningful basis to develop specific hypotheses in this area, but also allows interested researchers to communicate their findings using a more universal situational perspective, the need for which was echoed in a recent review of the employee creativity literature (Shalley, Zhou, & Oldham, 2004).

Practical

Improving the ability of organizational scientists to conceptualize interactional questions should also allow practitioners to make more informed decisions regarding selection, job-design, training, motivation, and a host of other areas with applied implications. Thus, additional empirical research should focus on estimating the practical, between-situation effects of the types of work situations outlined here. Further, the extent to which the criterion-related validity of a given predictor is situationally dependent will have implications for its relative utility. Thus, to the extent that certain jobs are more or less likely to feature situations of a given type (e.g., bureaucratic situations are likely more common in administrative positions than are incubative situations), resultant differences in criterion-related validity might also be able to be factored into utility equations when determining which individual differences to use for a given occupation. At a more microscopic level, it should also

follow logically that the criterion-related validity of various individual differences ebbs and flows as employees move from one type of situation to another. The structure provided here provides a means through which both of these types of variability can be conceptualized.

As a motivation-relevant example, thinking about potential ways to improve one's performance as a means of earning a promotion is an example of an incubative situation. Working with one's supervisor during a biannual evaluation to formalize a specific course of action to achieve said promotion via goal-setting is an example of a strategic situation. Speaking with a human resources representative to establish a formal mechanism for monitoring one's goal progress is an example of a bureaucratic situation. And documenting relevant behaviors at the end of each subsequent day in order to monitor goal progress is an example of a series of prosaic situations.

If specific individual differences do, in fact, predict success in each of these broad types of situations, information pertaining to one's unique profile, as well as the situations they most commonly experience, could be used to better manage subsequent behavior in a more theoretically grounded manner. This perspective is consistent with the social psychological concept of the "personality triad" (Funder, 2006), which states that information about "the person," "the situation," or "behavior" should be able to be derived if information about any two of these entities is known in advance. The opportunity to better utilize the benefits of the personality triad, however, is not merely relevant to work situations, but could also likely be applied to diverse areas of study and additional levels of abstraction by more fully developing the taxonomy proposed here.

Taxonomic

Although this study focused specifically on work situations, the perspective utilized here also has implications for the study of situations at broader, isomorphic, and narrower levels of abstraction. An example of a broader perspective that could potentially be brought to bear when studying superordinate levels of abstraction is provided by German sociologist Ferdinand Tönnies (1963), who argued that social relationships (and, by extension, situations) can be divided into two broad categories. Gemeinschaft (often translated as “community”), refers to groups that are bonded by feelings of esprit de corps and interpersonal togetherness (or what he referred to as “natural will”), whereas Gesellschaft (often translated as “society”), refers to groups that are bonded by feelings of working toward achieving instrumental goals (what he called “rational will”). Thus, viewing stimuli derived from the complete situational milieu (i.e., situations occurring across diverse contexts, as opposed to one domain such as work situations) through such a theoretical lens might prove to be useful when developing levels of abstraction that are superordinate to that provided here.

Work situations themselves might also be able to be subdivided further into categories at a lower level of abstraction. For example, Adler and Borys (1996) drew from theorizing in a host of relevant literatures to argue that two types of bureaucracies exist: enabling and coercive. These authors posit that the crux of this distinction (i.e., the primary dimension that differentiates enabling from coercive bureaucratic situations) is whether authority is based purely on one’s location in the bureaucracy (i.e., coercive) or whether authority is based on access to information that can be used to help others achieve desired end-states (i.e., enabling). This perspective, therefore,

may be able to be used as the conceptual foundation for relevant hypotheses and future empirical examinations, thereby making a meaningful contribution to the organizational sciences in general and the proposed hierarchical taxonomy as a whole.

Thus, given the diverse, yet interconnected nature of situations, research in a host of additional areas of inquiry may be able to be synthesized to form a large-scale, comprehensive taxonomy of situations that begins to address the many calls for such a system across a host of diverse literatures. Although the methods and perspectives utilized here were selected specifically to help lay such a foundation, they also have a number of limitations that should be acknowledged and discussed.

Limitations

First and foremost (but not necessarily unique to this particular study) is the fact that the methods used here are predicated on obtaining observations that are directly and maximally relevant to the question at hand. This is often an issue in studies such as this one because the number of potential situations (even within a specific domain of interest) is nearly infinite. Indeed, more than 5.4 million potential situations were possible given the stimulus development method utilized here, so sampling from this population in a way that is not only representative but is also logistically feasible is difficult prospect for any single study (Magnusson, Gerzen, & Nyman, 1968). Thus, replications of this structure that are based on additional samples of situational stimuli derived through diverse methods of stimulus generation (e.g., ecological momentary assessment—Beal & Weiss, 2003) would help solidify confidence in the validity of the proposed structure. This includes obtaining work-relevant terms from participants who are employed in more diverse occupations, in the sense that those utilized here were

over represented by white-collar occupations and likely did not include certain broad categories (e.g., military personnel). As a consequence, the final population of situational stimuli likely did not ideally approximate “all possible work situations” in the sense that a host of work-relevant terms were likely excluded from the final stimulus sets.

Related to this limitation are concerns pertaining to the validity of participant self-report data. Although some exceptions exist (e.g., Holland, 1959; Tett & Burnett, 2003), most situational analyses begin with the implicit assumption that conceptualizations of situations should be empirically formulated on the basis of the judgments of lay participants. Some have supported this practice by postulating that the ability to accurately identify and understand the psychological implications of seemingly minor situational changes may have served as an important evolutionary adaptation throughout human history, meaning that the ability to provide relevant and insightful situational information is not necessarily the product of expertise in the social sciences, but is a characteristic that is expressed naturally by the human species (Kelley, Holmes, Kerr, Reis, Rusbult, & Van Lange, 2003). Although the veracity of this claim is difficult to examine objectively, it provides an interesting perspective that is worthy of continued debate and inquiry. One way to begin testing this assumption is by collecting data from situational experts (e.g., social scientists, organizational specialists) in order to examine whether their perceptions yield a solution that is isomorphic with the one presented here and/or if their interpretation of the present solution is consistent with the current interpretation.

Regardless of the quality of one's stimuli and resulting data, it is important to note that MDS is a relatively subjective tool, in that it does not yield traditional null hypothesis significance tests and, therefore, requires a relatively large amount of experimenter judgment. This limitation, however, can be partially mitigated via replication, peer-review of proposed solutions, and additional assessments of the extent to which a variety of theoretically plausible dimensions describe the initial sample of stimuli (e.g., by having an additional independent sample of participants rate the extent to which each stimulus is characterized by a host of potential dimensions).

Lastly, the types of situations presented here are intended to represent idealized prototypes, meaning that certain situations will likely straddle observed dimensional boundaries. This issue is most clearly evidenced in the current effort by the item "reviewing contractor proposals because the law requires it," which was repeated across both stimulus sets, but is not categorized consistently across them. Specifically, it is categorized as a "bureaucratic" situation in solution 1 and a "strategic" situation in solution 2. This inconsistency might appear rather damning on its surface, but a closer examination indicates that this particular stimulus is viewed as being highly formal across both solutions and relatively moderate in terms of its perceived level of maintenance versus development. Said differently, it is essentially located on the borderline between bureaucratic and strategic situations in both solutions, suggesting that the discrepancies in how it was perceived by each sample of participants were relatively small. The other item that was repeated across stimulus sets (i.e., "calling a supplier while working late"), however, was consistently classified as a "strategic situation" in both solutions.

Conclusions

Despite the purportedly important role of situations in many—if not all—social sciences, a consensus regarding their nature and structure does not yet exist. This manuscript attempted to address this lack of agreement by assessing the nature and structure of work situations. Using diverse, but interconnected, methods across two independent sets of stimuli and two independent samples of participants, results converged on the idea that work situations can be divided into four types on the basis of two orthogonal underlying dimensions.

Specifically, the dimensions underlying broad work situations can be characterized as: 1) formality-informality, which represents the extent to which the situation in question is characterized by written rules, procedures, and instructions; and 2) maintenance-development, which represents the extent to which the situation in question is characterized by an emphasis on the present as opposed to the future. Further, these dimensions combine to form bureaucratic work situations, which are formal and maintenance-oriented; strategic work situations, which are formal and developmental; incubative work situations, which are informal and developmental; and prosaic work situations, which are informal and maintenance-oriented. It is also posited here that this structure can be used to provide a common frame of reference for those interested in developing hypotheses and communicating findings associated with organizationally-relevant questions pertaining to the main or interactive effects of work situations.

In a more long-term sense, however, the proposed solution also has implications for the continued development of similar systems that can be linked to the

current structure at superordinate, isomorphic, and subordinate levels of abstraction. Specifically, it is argued here that the results of this study can be used to begin developing an updateable, hierarchical taxonomy of situations that can be utilized across a host of specific areas of study. In line with recommendations made by Frederiksen (1972), this structure is designed to be the first of many interconnected steps, because developing a taxonomy of situations is likely too broad, complex, and involving of a task for any single study or scientist to address completely. Thus, continued research should focus on refining and applying this process at additional levels of abstraction, with the ultimate hope being that this system might begin to address the numerous calls for an improved conceptualization of the ubiquitous, yet elusive “situation.”

NOTES

¹It is important to note here that the term “dimensions” is not necessarily synonymous with the term “continua,” in the sense that dimensions (as used here) can also be conceptualized as dichotomies. Although it would be more linguistically appropriate to use the term “characteristics,” the term “dimensions” is used throughout this manuscript in order to be consistent with norms in the categorization literature.

²Although Lewin (1936) originally used the term “environments,” he did so in a way that is consistent with what most contemporary psychologists refer to as “situations.” Although he also used the term “situations,” his definition also included aspects of the individual.

³Although the Linnaean classification system has changed dramatically since its inception and is no longer the only (or perhaps even the dominant) system used in biology to categorize organisms, it serves as a useful model here because of its longevity, parsimony, and practicality.

⁴The websort.com domain name is no longer serving the purpose it was during the time data were collected for this study.

⁵The equation for determining the total number of pairwise comparisons for a given set of stimuli is $\underline{N} = \underline{K}(\underline{K}-1)/2$, where \underline{K} is the original number of stimuli. Thus,

the number of possible pairwise comparisons for $\underline{K} = 5, 10, 20, 40, 50$, and 100 is 10, 45, 190, 780, 1,225, and 4,950 respectively.

⁶The pairwise responses obtained in this step can functionally be considered interval-level data because more than four response options were provided (Crocker & Algina, 1986).

⁷Spence's (1979) equation for determining the expected stress for a given dimensional solution obtained via a random dataset is:

$$\text{stress} = .001 (a_0 + a_1 \underline{m} + a_2 \underline{n} + a_3 \ln(\underline{m}) + a_4 [\text{sqrt } \ln(\underline{n})],$$

where $a_0 = -524.25$, $a_1 = 33.8$, $a_2 = -2.54$, $a_3 = -307.26$, $a_4 = 588.25$, \underline{m} = number of dimensions, and \underline{n} = number of targets assessed.

⁸It is important to note that Figures 4 and 5 are not isomorphic; quadrant 1 in Figure 4 is analogous to quadrant 3 in Figure 5 and quadrant 3 in Figure 4 is analogous to quadrant 1 in Figure 5 (quadrant 2 and quadrant 4 remain the same across both figures). This is akin to rotating Figure 5 180 degrees on its Y-axis and 90 degrees to the left on its X-axis. It is also important to note that this is merely a cosmetic change to the solution's orientation precipitated by software output defaults and does not change this solution's substantive interpretation (Borg & Groenen, 2005).

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APPENDICES

Appendix A

Table 1

Abbreviated Entity-Property Matrix Associated With Figure 1

Entities	Properties
Plant	Stationary; asexual reproduction; energy created via photosynthesis
Tree	Properties above + perennial; single-stalked; has hard outer coating
Conifer	Properties above + maintains leaves or needles throughout year; gymnospermous
Pine	Properties above + produces hard, woody cones; has bundled needles

Table 2

Summary of Statistics and Indices Used to Assess Each Potential Dimensional Solution for Stimulus Sets 3a and 3b

Dimensional Solution	Stimulus Set 3a				Stimulus Set 3b			
	Observed Stress	Random Stress	# of Iterations	Average R ²	Observed Stress	Random Stress	# of Iterations	Average R ²
1	.47	.50	3	.43	.45	.50	5	.41
2	.28	.32	9	.56	.30	.32	7	.59
3	.22	.23	6	.60	.22	.23	8	.62
4	.17	.18	8	.62	.18	.18	5	.65
5	.13	.14	17	.67	.16	.14	5	.66
6	.10	.12	20	.74	.13	.12	11	.71

Table 3

Stimulus Set 3a Rank Orderings by Location on Dimension 1

Stimulus Label	Situational Description	Formality- Informality
S	Reviewing contractor proposals because the law requires it.	1.26
H	Communicating new safety compliance standards because the law requires it.	1.18
P	Planning a conference because it is part of my job.	1.14
Q	Presenting our financial plan to the board of directors.	1.12
B	Calculating payroll as efficiently as possible.	1.11
I	Consulting with stakeholders based on details outlined by my boss.	1.02
M	Faxing client orders to the main office.	.98
Y	Writing up time and attendance records in my office.	.87
L	Engaging in routine report preparation for my manager.	.63
C	Calling a supplier while working late.	.41
R	Providing information to potential investors at a business lunch.	.36
T	Tabulating the parts department's time sheets.	.15
G	Coaching and developing students outdoors.	.04
O	Inquiring about a product's availability from another store.	-.03
U	Talking about incoming trucks at a meeting.	-.15
F	Cleaning animal enclosures in order to comply with regulations.	-.18
N	Fixing a forklift at the jobsite.	-.18

(table continues)

Stimulus		Formality-
Label	Situational Description	Informality
E	Checking for errors during equipment repair time.	-.28
K	Discussing issues with the production staff during operational downtime.	-.58
J	Covering equipment and materials to protect them from the elements.	-.68
A	Attending a presentation in another department.	-1.12
D	Chatting with sales associates at the store.	-1.42
V	Visiting with a coworker while the computer system is down.	-1.78
W	Waiting for the branch's sales staff at a coffee shop.	-1.80
X	Writing personal emails while I'm supposed to be working.	-2.04

Table 4

Stimulus Set 3b Rank Orderings by Location on Dimension 1

Stimulus		Formality-
Label	Situational Description	Informality
D	Categorizing post-dated check payments at the warehouse.	1.43
S	Locating data in order to comply with regulations.	1.37
M	Feeding newborn animals as part of my primary duties.	1.37
U	Reviewing contractor proposals because the law requires it.	1.34
H	Completing maintenance activities at the construction site.	1.32
F	Checking for system errors as part of my project management duties.	1.40
O	Fine-tuning equipment in the workshop.	1.07
Q	Going through customer service reports at a restaurant.	1.05
N	Filling out my time sheet at the end of the day.	.42
Y	Tidying my studio after work.	.37
T	Refueling a company vehicle during a regional business trip.	.17
P	Going over mortgage rates with a client.	.01
B	Calling a supplier while working late.	-.26
K	Discussing internal financial information during a weekly staff meeting.	-.45
I	Contacting an external supplier because my boss asked me to.	-.50
R	Interviewing a potential employee at the main office.	-.51
X	Talking with prospective clients over the phone.	-.60

(table continues)

Stimulus		Formality-
Label	Situational Description	Informality
J	Dealing with the foreman via email.	-.76
G	Communicating with patients during an appointment.	-.95
A	Attending a company-sponsored fitness class with my coworkers.	-1.02
W	Speaking to administrators regarding our benefits package.	-1.04
L	Discussing problems with direct reports as part of a team building activity.	-1.07
E	Chatting with a coworker in the break room.	-1.24
C	Carpooling to work with a coworker.	-1.35
V	Socializing with a coworker outside my office.	-1.48

Table 5

Stimulus Set 3a Rank Orderings by Location on Dimension 2

Stimulus		Maintenance-
Label	Situational Description	Development
F	Cleaning animal enclosures in order to comply with regulations.	1.60
N	Fixing a forklift at the jobsite.	1.46
E	Checking for errors during equipment repair time.	1.38
J	Covering equipment and materials to protect them from the elements.	1.35
T	Tabulating the parts department's time sheets.	1.31
Y	Writing up time and attendance records in my office.	1.01
L	Engaging in routine report preparation for my manager.	.93
M	Faxing client orders to the main office.	.64
B	Calculating payroll as efficiently as possible.	.60
S	Reviewing contractor proposals because the law requires it.	.47
X	Writing personal emails while I'm supposed to be working.	.11
P	Planning a conference because it is part of my job.	.10
W	Waiting for the branch's sales staff at a coffee shop.	-.02
H	Communicating new safety compliance standards because the law requires it.	-.10
V	Visiting with a coworker while the computer system is down.	-.26
D	Chatting with sales associates at the store.	-.65

(table continues)

Stimulus		Maintenance-
Label	Situational Description	Development
A	Attending a presentation in another department.	-.70
Q	Presenting our financial plan to the board of directors.	-.80
I	Consulting with stakeholders based on details outlined by my boss.	-.92
C	Calling a supplier while working late.	-1.02
K	Discussing issues with the production staff during operational downtime.	-1.11
R	Providing information to potential investors at a business lunch.	-1.24
U	Talking about incoming trucks at a meeting.	-1.27
O	Inquiring about a product's availability from another store.	-1.33
G	Coaching and developing students outdoors.	-1.54

Table 6

Stimulus Set 3b Rank Orderings by Location on Dimension 2

Stimulus		Maintenance-
Label	Situational Description	Development
Y	Tidying my studio after work.	1.60
T	Refueling a company vehicle during a regional business trip.	1.56
A	Attending a company-sponsored fitness class with my coworkers.	1.46
N	Filling out my time sheet at the end of the day.	1.39
C	Carpooling to work with a coworker.	1.32
E	Chatting with a coworker in the break room.	1.12
V	Socializing with a coworker outside my office.	1.04
O	Fine-tuning equipment in the workshop.	.74
Q	Going through customer service reports at a restaurant.	.30
H	Completing maintenance activities at the construction site.	.23
D	Categorizing post-dated check payments at the warehouse.	.21
S	Locating data in order to comply with regulations.	-.04
M	Feeding newborn animals as part of my primary duties.	-.06
F	Checking for system errors as part of my project management duties.	-.24
L	Discussing problems with direct reports as part of a team building activity.	-.34
U	Reviewing contractor proposals because the law requires it.	-.54

(table continues)

Stimulus		Maintenance-
Label	Situational Description	Development
W	Speaking to administrators regarding our benefits package.	-.90
G	Communicating with patients during an appointment.	-.92
J	Dealing with the foreman via email.	-.96
K	Discussing internal financial information during a weekly staff meeting.	-1.08
X	Talking with prospective clients over the phone.	-1.09
B	Calling a supplier while working late.	-1.13
I	Contacting an external supplier because my boss asked me to.	-1.14
R	Interviewing a potential employee at the main office.	-1.18
P	Going over mortgage rates with a client.	-1.35

Appendix B

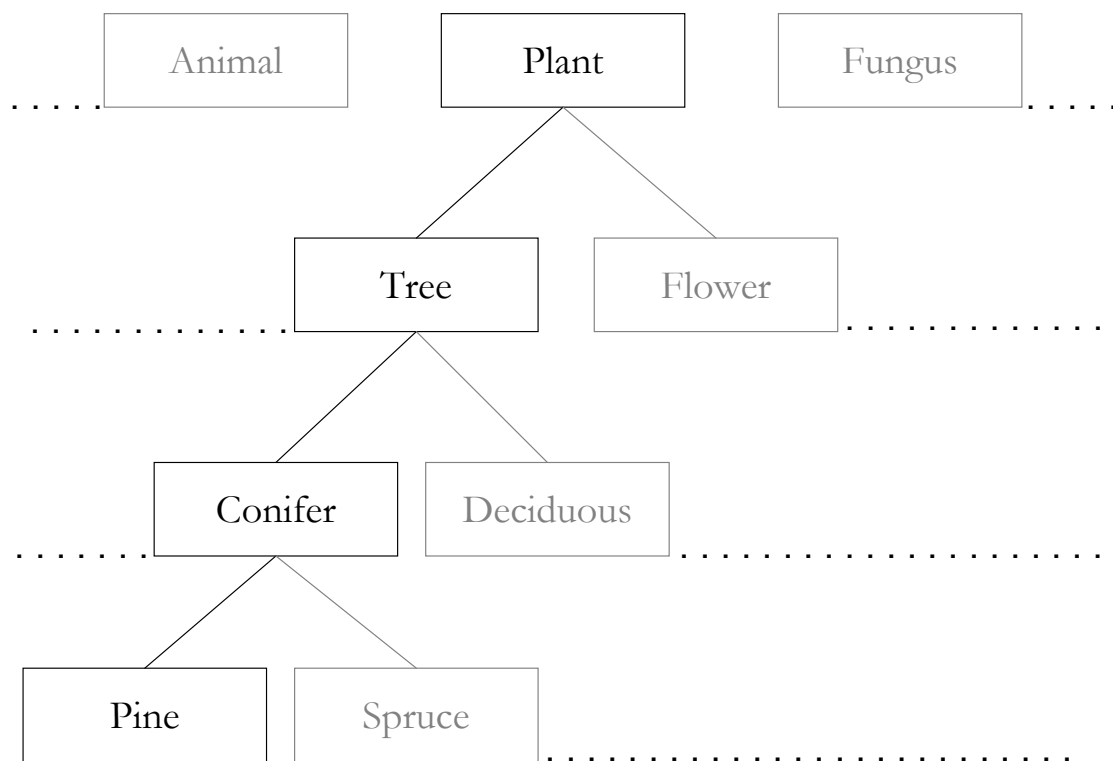


Figure 1. Placement of a pine tree in a generic hierarchical taxonomy.

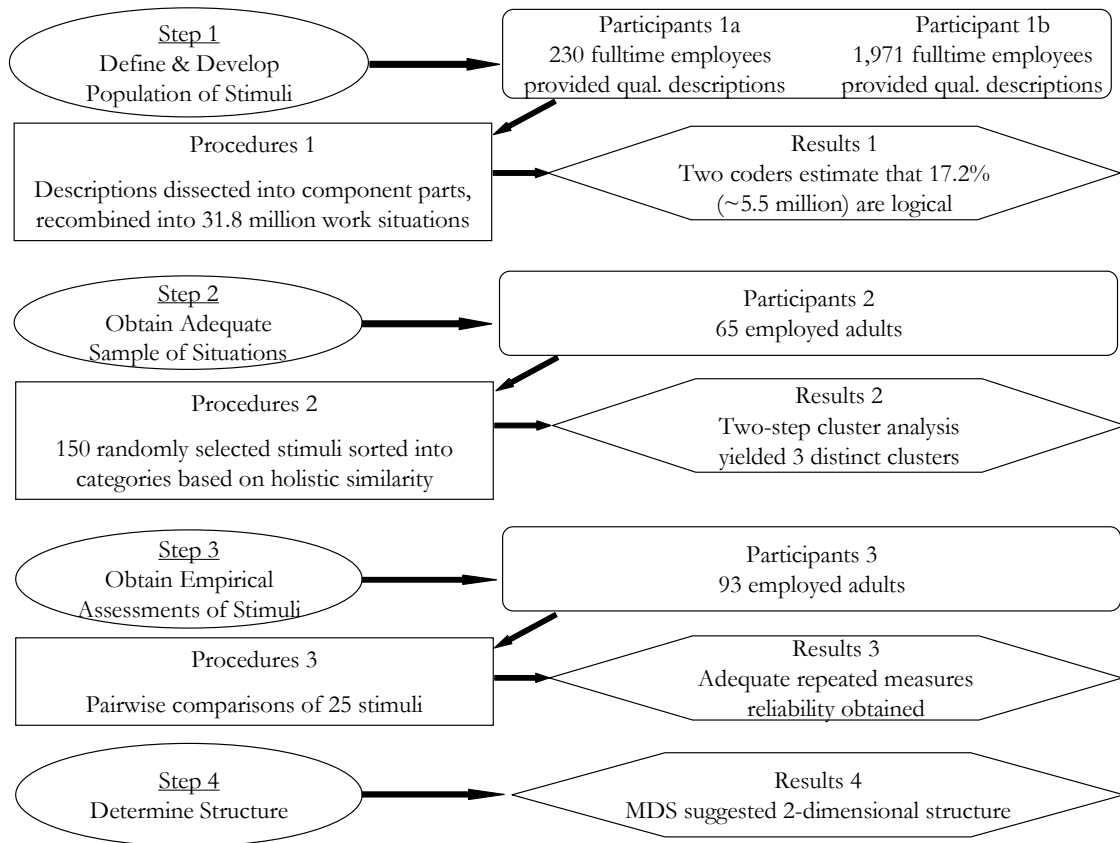


Figure 2. Visual depiction of this study's methodological details.

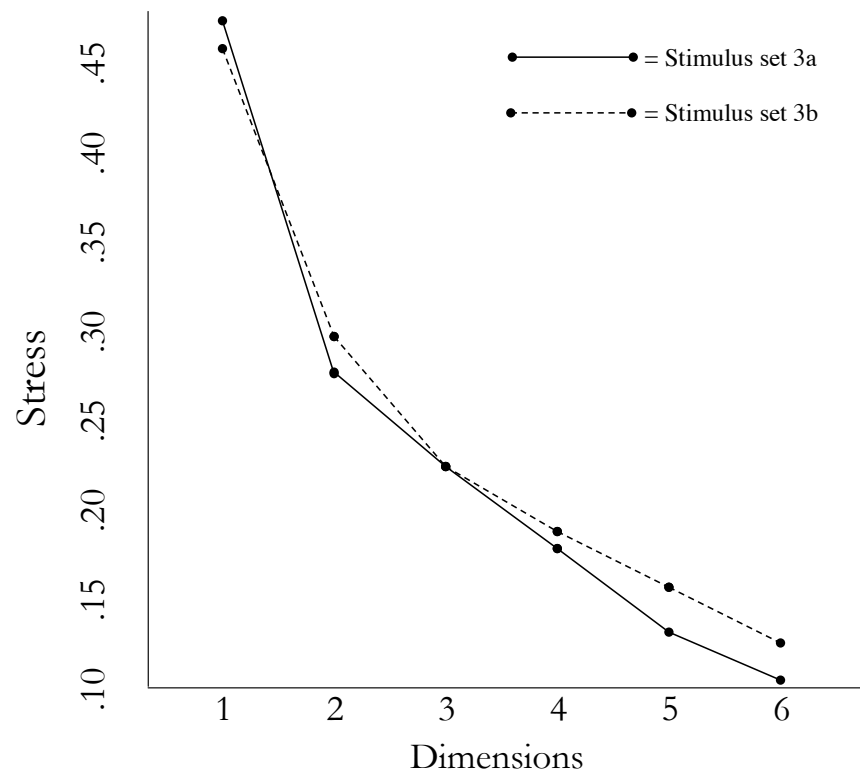


Figure 3. Scree plot of stress versus dimensionality for stimulus sets 3a and 3b.

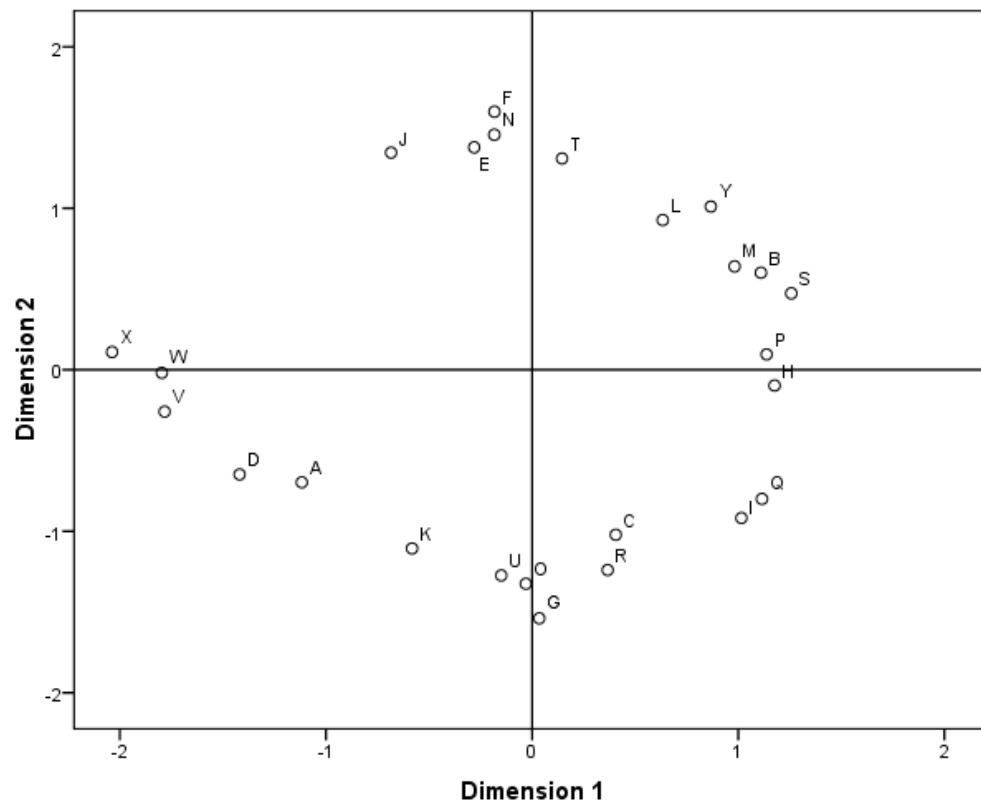


Figure 4. Two dimensional MDS solution for stimulus set 3a (stimulus labels correspond to those presented in Tables 3 and 5).

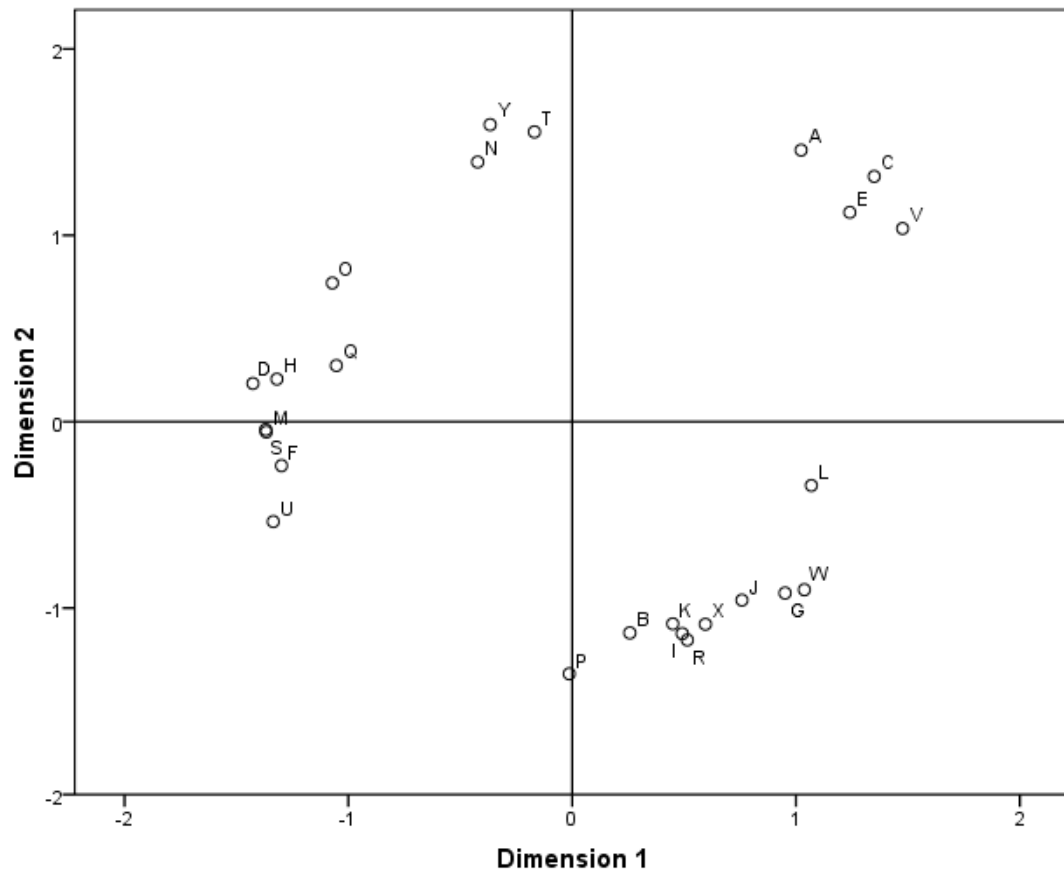


Figure 5. Two dimensional MDS solution for stimulus set 3b (stimulus labels correspond to those presented in Tables 4 and 6). Note: this solution is oriented differently than the solution for stimulus set 3a. Specifically, quadrant 1 in Figure 4 is analogous to quadrant 3 in Figure 5 and quadrant 3 in Figure 4 is analogous to quadrant 1 in Figure 5 (quadrant 2 and quadrant 4 remain the same across both figures). This is akin to rotating Figure 5 180 degrees on its Y-axis and 90 degrees to the left on its X-axis.

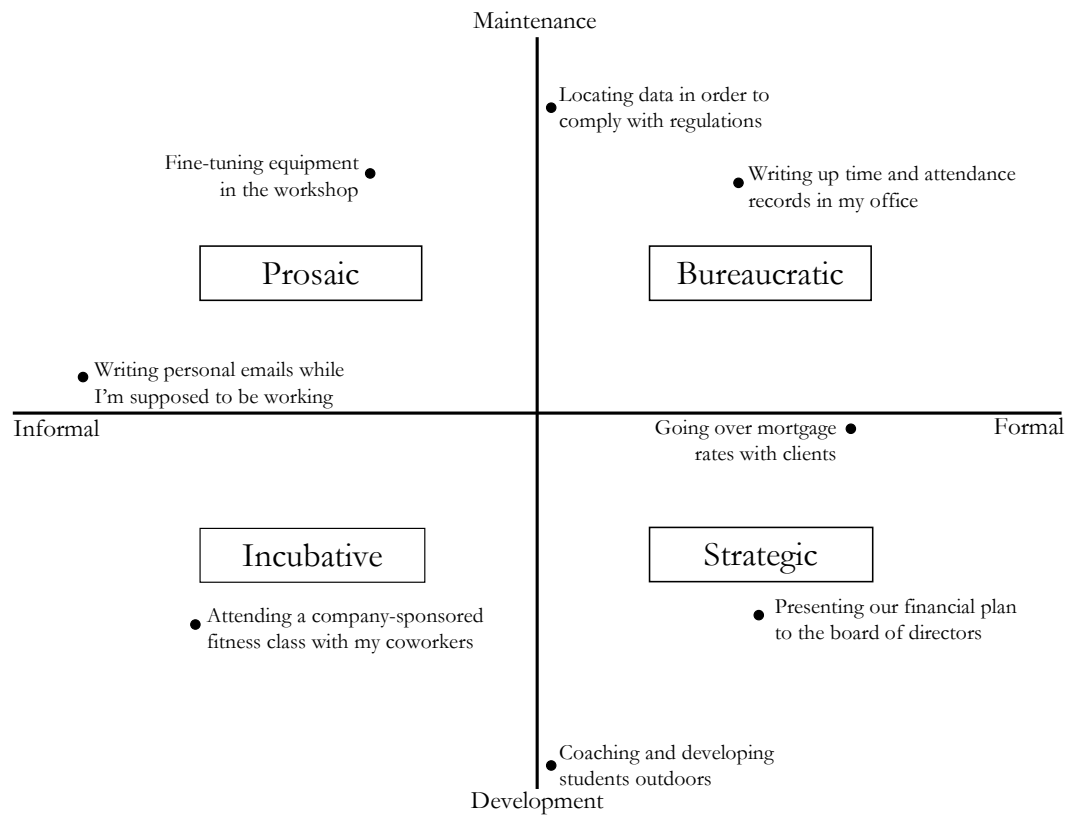


Figure 6. Combined type and dimensional MDS solution for stimulus sets 3a and 3b with empirically-selected exemplars of the purest stimuli for each dimension and type.

Appendix C

Author(s)	Year	Relevant Quotes	Field of Study
Amabile	1983	There has been a concentration on the creative person to the neglect of “creative situations,” that is, circumstances conducive to creativity; there has been a narrow focus on intrapersonal determinants of creativity to the neglect of external determinants; and, within studies of intrapersonal determinants, there has been an implicit concern with “genetic” factors to the neglect of contributions from learning and the social environment. (p. 358)	Social Psychology
Argyle, Furnham, & Graham	1981	It is now familiar from many lines of research that social situations have a great impact on all aspects of behaviour, but little is known about how to describe or analyze situations. (p. ix) Functional relationships in the form of $B = f(P, S)$ have been found, showing, for example, how anxiety is a joint function of trait anxiety and the stressfulness of situations. However, in order to take advantage of this approach any further we need to know the main situational variables. (pp. 1-2)	Social Psychology
Barrick, Mitchell, & Stewart	2003	Less attention has been devoted to developing theory and research related to the influence of situations... Although there has been more discussion on these issues in the personality literature, there is a lack of theory related to the work context. (p. 61)	Organizational Studies
Barrick & Mount	2003	There is also considerable recognition that situations are important determinants of the nature of the relationship between personality and performance. To date, there have only been a few papers...that attempt to conceptualize the basic kinds of situations and link those situations to personality traits. (pp. 211-212)	Organizational Studies
Barrick & Mount	2005	For the arguments that the situation is all important, little is empirically known or even theorized about how different types of situations (broadly defined) influence personality or behavior, particularly at work. Furthermore, beyond job analysis, little is known about the basic kinds of situations or what variables are	Organizational Sciences

		useful for comparing one situation with another. Today, a framework for characterizing the psychologically influenced aspects of situations is sorely needed, as is a method for assessing these variables. (pp. 364-365)	
Battistich & Thompson	1980	Psychologists have shown increasing interest over the past few years in interactional models of human behavior...According to this perspective, examination of issues concerning the existence of personality "traits" and the consistency of individual behavior cannot be undertaken without systematic attention to the properties of the situations within which the actor's behavior is observed. Yet, remarkably little is known about how individuals conceptualize the social environment. (p. 74)	Social Psychology
Baumeister & Tice	1985	The study of how aspects of situations determine behavior is perhaps <i>the</i> major concern of social psychology...yet a conceptual scheme of situational structure has not emerged. (p. 148)	Social Psychology
Belk	1975	The primary obstacle has been the absence of an adequate conception of the variables which comprise a situation. (p. 157)	Consumer Psychology
Block & Block	1981	The ultimate problem for all future situational research is the lack of a comprehensive taxonomy of situational characteristics and normal combinations of these characteristics. (p. 162) For too long now, the current cohort of personality psychologists has been controlled by methods and measures ignoring of the fine grain and fine influence of environmental context upon the perception and behavior of individuals. (p. 85)	Interactionism
Chatman	1989	However, researchers have not identified what the important parameters of situations are. Unifying dimensions that can guide future conceptualizations of situations, regardless of the specific situation element being examined, would help researchers build a comprehensive framework of interactions in organizations. (p. 336)	Organizational Studies
Colbert, Mount, Harter, Witt, & Barrick	2004	As others have noted..., the study of situational perceptions suffers from the	Organizational Studies

		lack of an organizing taxonomy. (p. 600)	
		The number and diversity of potential situational moderators has led some to suggest that to advance understanding, the development of a taxonomy of situational influences is needed. (p. 608)	
Edwards & Templeton	2005	It is probably noncontroversial to say that social psychology lacks a generally accepted taxonomy of situations. (p. 706)	Social Psychology
Endler	1993	Although we have a fairly advanced differential psychology of individual differences, our differential psychology of situations is still in the dark ages. (p. 258)	Personality Psychology
Endler & Magnusson	1976	Ecological psychologists...sociologists, and social learning theorists have focused on situation factors of determinants of behavior. However, there have been few attempts at studying the situations psychologically. (p. 967)	Personality Psychology
		The emphasis on the psychological meaning of situations has important consequences for research. Very little empirical research in this area has been conducted. In our opinion, research in this field of situation perception is among the most urgent and also one of the most promising tasks for psychology. (p. 969)	
Fleeson	2007	Despite calls for more understanding of how situations are relevant to dispositions, the field has very little knowledge of which situations matter to trait-manifesting behavior. (p. 855)	Personality Psychology
Frederiksen	1972	One of the methodological difficulties is that we lack a satisfactory classification of situations. We need a systematic way of conceptualizing the domain of situations and situational variables before we can make rapid progress in studying the role of situations in determining behavior. (p. 115)	Interactionism
Funder	2001	When psychology achieves a well-accepted, thorough system for identifying classes of situations, if ... then profiles might be economically used to predict what a person will do in certain kinds of situations. So far, however, the task of psychologically classifying situations has barely begun. (p. 205)	Personality Psychology

		<p>For all the arguments that the situation is all important..., little is empirically known or even theorized about how situations influence behavior, or what the basic kinds of situations are (or, alternatively, what variables are useful for comparing one situation to another. (p. 211)</p> <p>A conceptualization of the key variables for characterizing the psychologically effective aspects of situations is sorely needed, as is a method for assessing these variables. A few starts toward this goal have begun..., but the enterprise can still be considered only barely begun. (p. 211)</p>	
Funder	2006	<p>An important goal for future research is further development of theories and methods for conceptualizing and measuring the functional aspects of situations and of behaviors. (abstract)</p> <p>The situation is important too, of course. But it is difficult to pin down just how situations are important, in part because of the common but unilluminating practice of assigning “the situation” responsibility for all the behavioral variance not accounted for by a particular personality trait, <i>without</i> specifying what aspects of the situation are psychologically essential.... There is a good deal of confusion concerning how situations should be conceptualized. (p. 27)</p> <p>An important future direction for personality psychology, therefore, is to begin to formulate the variables that psychologically characterize situations. Most of the few, early attempts in the current literature seem to focus on lexical analyses..., but ultimately the test of the adequacy of a set of situational variables will be the degree to which they can predict and are useful for explaining behavior...(p. 28)</p>	Personality Psychology
Funder & Colvin	1991	<p>Although it has frequently been observed that behavior is a function of the person and the situation and despite a rich tradition of developing technologies for assessing people..., a long-standing lack in the field of personality assessment has been a well-developed technology for the assessment of situations...(p. 774)</p>	Personality Psychology
Grote & James	1989	<p>Only if the similarities and differences among the situations considered in such an analysis have been determined on the basis of previously identified</p>	Organizational Studies

		psychologically salient dimensions can useful information about the degree of consistency of a certain behavior be obtained. If situations are selected on the basis of <i>ad hoc</i> assumptions about their similarity, behavioral consistency or specificity may simply be produced as a function of unknowingly selecting situations that are similar or dissimilar in the eyes of the respective individual. (p. 325)	
Hatrup & Jackson	1996	Thus there exists today essentially no consensus about how to conceptualize and measure situation attributes using constructs that are psychologically meaningful and interesting. This deficiency in our science threatens to stall the continuing advancement of the field. (p. 510)	Organizational Studies
Hogan, Harkness, & Lubinski	2000	There is a problem with the argument that people's behavior is a function of traits and situations. The problem concerns the fact that there is no agreed-upon definition of taxonomy situations. Thus, behavior is claimed to be a function of something that has yet to be defined – even by those people who most believe in situations as explanatory concepts. (p. 291)	Personality Psychology
Hogan & Roberts	2000	Although we have a reasonably well-developed taxonomy of people – the Five-Factor model...there is no such taxonomy of situations. On the one hand, this makes the entire person-situation debate moot. On the other hand, this is, or should be a major embarrassment for people interested in the effects of environments on individuals. (p. 20)	Interactionism
Johns	2001	My task here is not to propose a theory or taxonomy of context, as useful that might be. (p. 31)	Organizational Studies
Johns	2006	Unfortunately, although well-developed taxonomies exist to describe human abilities and personality, the same cannot be said for situational or contextual factors. (pp. 388-389)	Organizational Studies
		The many examples of context effects provided here raise the question of why context has been underappreciated. The repeatedly lamented absence of a good taxonomy of situations is in part to blame, since we lack a refined, systematic language for expressing context. (p. 403)	

Kelley, Holmes, Kerr, Reis, Rusbult, & Van Lange	2003	To be sure, "the situation" has long been the object of considerable attention in several of the behavioral sciences, notably social psychology (the discipline that we six authors all call home). Nonetheless, our impression is that this scrutiny has been more intuitive than theoretical, more haphazard than systematic. (p. 3)	Social Psychology
Kenny, Mohr, & Levesque	2001	Despite this diversity, or perhaps because of it, the field has been criticized for its failure to develop a comprehensive theoretical model of situations and their structure or impact. (p. 5) Although social psychologists have emphasized the importance of the situation, they have been less successful in its conceptualization...[T]here is no universally accepted scheme for understanding what is meant by situation. It does not even appear that there are major competing schemes, and all too often the situation is undefined. (p. 129)	Social Psychology
Magnusson	1971	Psychological research has to date almost exclusively studied one aspect of this interaction system, the <i>individual</i> , whereas systematic analyses of <i>situations</i> have been almost entirely lacking. (p. 851) The task of determining psychologically relevant dimensions, which could be used for a description and classification of situations, is a difficult one. Only limited attempts have been made to develop a methodology suitable for this type of analysis...and scarcely any empirical results are available. Concerning the study of situational variation, we find ourselves at the same stage as that concerning the study of individual differences at the initial development period of differential psychology. (p. 852)	General Psychology
McAuley, Bond, & Kashima	2002	Despite past controversy, there is now consistent recognition across the disciplines of sociology, social psychology, and personality that an understanding of the situation is essential to a fuller prediction of behavior. Yet there is also wide recognition that there continues to be a scarcity of resources for situational analysis. (p. 363)	Cross-Cultural Psychology
Moos	1973	...the importance of this work on the development of taxonomies of environmental variables can hardly be overemphasized, particularly in its implications for behavior prediction and behavior change. (p. 662) In this sense it may be cogently argued that the most important task for the	General Psychology

		behavioral and social sciences should be the systematic description and classification of environments and their differential costs and benefits to adaptation. (p. 662)	
Moos	2002	We face a fundamental dilemma in searching for clues to fathom the mystery of social contexts: the lack of a common set of elements or dimensions by which to characterize our query...to address fundamental questions about whether one type of setting can compensate for or amplify the influence of another, we need a set of procedures that will enable us to compare the common qualities of diverse life domains. (p. 77)	Community Psychology
Pervin	1976	First, there is a need for more free-response description studies with many individuals so that we can move toward a meaningful taxonomy of situations. (p. 472)	Personality Psychology
Price & Bouffard	1974	Although considerable effort has been expended in attempting to generate typologies or dimensions to characterize persons, much less attention has been devoted to the characterization of social behaviors and social situations. (p. 579)	Personality Psychology
Saucier, Bel-Bahar, & Fernandez	2007	The lack of a taxonomy of situations—of those contingencies that modify the expression of trait tendencies—impedes the understanding of personality, in several respects. (p. 480)	Personality Psychology
Seeman	1997	...analysts have consistently complained about “the neglected situation,” finding the resources for situational analysis slim and unsystematic. (abstract)	Social Psychology
		It does seem odd that in so many fields—whether directly social psychological or more broadly oriented—this gap exists between the understood significance of situational analysis and its empirical implementation. (p. 5)	
Sells	1963	The most obvious need in evaluating the manifold encounter of organism and environment is a more satisfactory and systematic conceptualization of the environment. This implies a taxonomic, dimensional analysis of stimulus variables comparable to the trait systems that have been developed for individual difference variables. While work proceeds actively to extend the exploration of individual differences...the equally important frontier of situational dimensions is virtually ignored. (p. 700)	General Psychology

Stewart & Barrick	2004	We feel that one barrier presently holding back personality research is the absence of a taxonomy for classifying both work situations and specific work behaviors that relate differently to personality traits. (p. 66)	Organizational Studies
Swaan & Seyle	2005	Yet the full implementation of Mischel and Shoda's (1999) innovative approach clearly requires the development of a comprehensive taxonomy of situations—a development that has been pursued with stunningly modest success since H. Wright and Barker's (1950) early attempt. (p. 162)	Personality/Social Psychology
Ten Berge & De Raad	1999	What is needed is a taxonomy of personality characteristics that systematically incorporates situational information, so that traits can be questioned in their context, that is, in a context that allows for individual differences in the expression of trait-relevant behaviour. (abstract) This, again, brings us back to the necessity of a general taxonomy of situational features. (p. 341)	Personality Psychology
Ten Berge & De Raad	2002	For the situation part in this conception, there is no agreed upon structure of situations...the present state of affairs with respect to situation taxonomies is unsatisfactory. (p. 82)	Personality Psychology
Van Heck	1984	Therefore, it has been suggested several times that the development of a taxonomy (or taxonomies) of situations is a major task for personality researchers. (p. 150) Only when presentation of stimulus conditions is based on systematic conceptualizations of situations, it is [sic] possible to test differentiated hypotheses about the interactions between persons and specific environments. (p. 151)	Personality Psychology
Van Heck	1989	In everyday life, no one doubts that situational conditions contribute to the conduct of individuals. Nevertheless, in the scientific study of personality only a small deal of effort has gone into systematic situational analyses. (p. 53)	Personality Psychology

Yang, Read, & Miller	2005	Although considerable work has been done on personality structure, little attention has been paid to the structure of situations. (abstract)	Personality Psychology
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Note. “Field of study” labels were determined by examining the primary area of emphasis for the study in question. This was specifically assessed by examining the article’s content area as well as the journal in which it was published. Ellipsis points are used to indicate when other authors were cited by the authors being quoted.

Appendix D

Source	Area	Level ^a	Focus ^b	Stimulus Development	Stimulus Sampling	Procedures	Analyses	Results	Citations per year ^c
Holland (1959, 1997)	Org. Science	M	T	Occupational environments	Author's vocational counseling experience and reading of vocational psychology literature	Originally presented as theoretical categories, subsequently tested across diverse samples of participants and occupations	Bivariate and canonical correlations, factor analysis, profile analysis	6 types of work environments: realistic, investigative, artistic, social, enterprising, conventional	5.8* (1959), <1.0* (1997)
Endler, Hunt, & Rosenstein (1962)	Gen. Psych	N	T	Anxiety evoking situations	11 situations from stimulus-response inventory for anxiousness	236 responded to S-R inventory, plus a variety of individual differences measures	ANOVA	3 types of anxiety evoking situations: interpersonal status is threatened, inanimate personal danger, ambiguous	1.6
Krause (1970)	Ecolog. Psych	B	T	N/A (theory piece)	N/A (theory piece)	N/A (theory piece)	N/A (theory piece)	7 types of situations: joint working, trading, fighting, sponsored teaching, serving, self-disclosure, playing	<1.0
Magnusson (1971)	Gen. Psych	M	D	Academic study situations	Descriptions of 36 situations were subjectively formulated to reflect those that are common for students in connection with their academic studies	3 undergraduates rated all possible pairwise comparisons of 36	Factor analysis	5 dimensions: positive, negative, passive, social, active	2.5
Magnusson &	Gen. Psych	M	T&D	Academic study situations	36 situations relevant to 12 undergraduates engaged in university studies (also in all possible pairwise	Factor analysis	Factor analysis	Near-replication of Magnusson' (1971); 5	<1.0

Ekehammar (1973)				used in Magnusson, 1971)	comparisons, then repeated the same comparisons 16 days later	dimensions: positive, negative, passive, social, "ambiguous"
						7 types: positive, negative, passive, social, ambiguous, active, ambiguous
Moos (1973)	Ecolog. Psych	B	D	N/A (review)	N/A (review)	3 dimensions: relationships, personal development, system maintenance and change
						5.1
Price (1974)	Gen. Psych	M	T	15 undergraduates kept diaries of behaviors and situations experienced for one day	52 undergraduates rated terms of the appropriateness of each behavior in each situation (e.g., read on a bus, belch on a date)	4 clusters (not substantively interpreted)
						<1.0
Price & Bouffard (1974)	Social Psych	B	D	15 undergraduates kept diaries of behaviors and situations experienced for one day	52 undergraduates rated terms of the appropriateness of each behavior in each situation (e.g., read on a bus, belch on a date)	2 dimensions: behavioral appropriateness, situational constraint
						3.3
Belk (1975)	Cnsmr Psych	M	D	N/A (theory piece)	N/A (theory piece)	5 dimensions: physical surroundings, social surroundings, temporal perspective, task definition, antecedent states
						7.0

Price & Blashfield (1975)	Communi ty Psych	B	T&D	All possible situations	455 behavior settings collected in a small Midwestern town (claimed to constitute "entire population of behavior settings in the town")	Archival data were used to provide general information about 455 behavior settings assessed vis-à-vis 43 variables, falling into one of eight categories (i.e., class of authority system, action patterns, demographics of member, performer, and target, size of behavior setting, duration of behavior setting, frequency of occurrence)	Factor analysis, cluster analysis religion vs. government, young performers, young members & targets, female members & targets, business, duration, adolescent members & targets, male members & targets	9 dimensions: Adult members & targets, religion vs. government, young performers, young members & targets, female members & targets, business, duration, adolescent members & targets, male members & targets	<1.0
Forgas (1976)	Social Psych	B	T&D	All possible situations	25 middle-class housewives and 23 undergraduates provided descriptions of situations experienced in last 24 hours and other regularly-experienced	Similarly-sized, independent group of housewives and students then sorted them into groups on basis of similarity	MDS, cluster analysis	2 dimensions (housewives): intimacy, perceived self-confidence	1.9
								3 dimensions (students):	

situations					
Pervin (1976)	Social Psych	B	T&D	<p>All possible life situations, where a "situation" was defined "as involving a specific place, a specific time, and one or more individuals involved in specific activities"</p> <p>Four participants generated a list of situations in his/her life via a "free response" procedure</p> <p>Same participants generated a list of characteristics, feelings, and behaviors and rated each situation on each dimension</p>	<p>pleasant-unpleasant, involved-uninvolved, knowledge of how to behave</p> <p>6 types: home-family, friends-peers, relaxation-recreation-play, work, school, alone</p> <p>4 dimensions: friendly-unfriendly, tense-calm, interesting-dull, constrained-free</p> <p>2.4</p>
Jones & James (1979)	Org. Science	M	D	<p>Relatively specific aspects of work situations</p> <p>35 previously developed composites of stimulus population (e.g., role ambiguity, leader goal emphasis, cooperation)</p> <p>All 145 items of psychological climate questionnaire administered to 4,315 Navy enlisted men, 398 fireman, and 504 healthcare managers</p> <p>Principal components analysis</p>	<p>6 dimensions: conflict and ambiguity; job challenge, importance, and variety; leadership facilitation and support; work-group cooperation, friendliness, and warmth; and organizational concern and identification; idiosyncratic</p> <p>6.7</p>
Karasek (1979)	Org. Science	N	D	<p>Characteristics of work</p> <p>Job demand and decision latitude</p> <p>950 employed adult males assessed their current job on</p> <p>Factor analysis</p>	<p>2 dimensions: job demands and job</p> <p>58.3</p>

	environments relevant to employee strain of Employment Survey	measures culled from the 1972 U.S. Quality	15 characteristics	control
Battistich & Thompson (1980)	Social Psych	M	D College situations 37 undergraduates kept situational diaries for two days + situations they encountered frequently over the last year	109 undergraduates provided pairwise comparisons of similarity of 30 most common situations reported in situational diaries MDS 4 dimensions: interpersonal intimacy, group vs. individual activity, social isolation, behavioral conformity <1.0
			70 undergraduates rated each situation on 38 characteristics	
Anderson (1983)	Social Psych	M	T Four types of situations taken from Situational Assessment Test: interpersonal failure, interpersonal success, non-interpersonal failure, and non-interpersonal success 24 undergraduates wrote self-generated causes of situations (e.g., person X just failed the midterm test in a class) on note cards; cards sorted into similar categories by two judges	22 undergraduates sorted "cause cards" into similar piles Cluster analysis 4 types: interpersonal failure, non-interpersonal failure, interpersonal success, non-interpersonal success 2.9
Van Heck (1984, 1989)	Ecolog. Psy	B	T Situational relevant nouns and attributes/characteristics Nouns: 750 obtained via dictionary search, reduced to 248 after elimination of synonyms and archaic terms	160 participants interviewed; responses analyzed w/ respect to context, location, objective characteristics, persons, objective characteristics of persons, actions, objects, 10 factors of situation types: 1) interpersonal analysis, factor conflict, 2) joint working, 3) intimacy/interpersonal relations, 4) recreation, 5) <1.0* (1984), 1.2* (1989)

						Characteristics: "Large and time number" obtained via critical incidents 744 participants rated situational nouns in terms of 659 ultimate characteristics			traveling, 6) rituals, 7) sport, 8) excesses, 9) serving, and 10) trading
Baumesiter & Tice (1985)	Social Psych	B	T	All possible types of situations	1,622 situationally relevant IVs published in JPSP	Sorting	Subjective experimenter judgments	5 broad categories subsuming 51 specific categories	<1.0
Grote & James (1989)	Org. Science	M	D	Dimensions underlying situations relevant to the expression of achievement-oriented behaviors	109 students completed a free-response questionnaire in which they described situations relevant to the expression of achievement orientation	23 undergraduates compared 30 situations from free-response questionnaire in pairwise fashion	Multidimensional scaling	2 dimensions: type of necessary ability (i.e., verbal v. nonverbal), degree of immediate stress	<1.0
James & James (1989)	Org. Science	M	D	Factors underlying emotionally relevant cognitions of work environments	18 variables taken from one of four perceptual constructs available in the Psychological Climate Inventory	422 military personnel, 288 systems analysts, 208 firefighters, 208 production personnel	Confirmatory factor analysis	1 general factor: evaluation of work environment's overall benefit or detriment to employee	6.8
Eckes	Social	M	T&D	Situations	48 students kept record	34 independent participants	Cluster analysis	9 un-interpreted	<1.0

(1995)	Psych	relevant to the “university milieu”	of situations and self- reported most common attributes thereof for one week	rated 30 most common situations on 18 most common dimensions	type/dimension clusters			
Amabile, Conti, Coon, Lazenby, Herron (1996)	Social Psych	D	N	Dimensions of work environments that are relevant past theory/research to creativity	12,525 archival responses to Conceptual grouping, principal components analysis	8 dimensions: org encouragement, supervisory encouragement, work- group supports, sufficient resources, challenging work, freedom, organizational impediments (neg), workload pressure (neg)	20.9	
Hattrup & Jackson (1996)	Org. Science	D	B	N/A (theory piece)	N/A (theory piece)	4 categories of dimensions: informational, task- relevant, physical, social, that subsume an indeterminate number of narrower dimensions (e.g., autonomy, danger)	3.6*	
Murtha, Kanfer, & Ackerman (1996)	Personalit y	T&D	M	Types (e.g., home, work) with dimensions (e.g., intimacy, hostility) relevant to expression of conscientiousne	Situations from Endler et al.’s (1962) S-R Inventory that are relevant to conscientiousness and agreeableness	137 undergraduates rated by Factor analysis self and acquaintances regarding generic personality and within- situation personality	4 factors relevant to conscientiousness: norms & expectations, things v people, intimacy, cooperative task- oriented	1.9

ss and agreeableness					4 factors relevant to agreeableness: hostility, nurturance re: social support, nurturance re: coop. relationships, pos v neg affect				
Vansteelan dt & Van Mechelen (1998)	Personalit y	N	T&D	Situations and dimension relevant to the expression of anger/hostility among college students	23 situations and behaviors originally developed for Endler & Hunt's (1968) situation-response inventory	54 psychology undergraduates rated combinations in terms of likelihood of engaging in behavior in question	Cluster analysis Canonical discriminant analysis	3 types of situations relevant to aggression: high frustration, moderate frustration, low frustration	3.1
						10 psych staff members judged same 23 situations on 6 frustration-relevant features (e.g., intentional, ego-threatening)—no info given as to how features were developed/selected		1 dimension: severity of consequences	
Ten Berge & De Raad (2001)	Personalit y	M	T	All situations relevant to the expression of traits in general	Students provided 2,234 examples of event, behavior reduced to 114 groups of situations, to which 18 more groups were added from Ven Heck's (1984) taxonomy of situations, yielding a total of 1,260 individual situations that formed 132 groups	43 (primarily female) undergraduates rated the extent to which it would be possible/likely for a given triad of trait-based behaviors to occur in a given group of situations	Dutch Principal components analysis, hierarchical cluster analysis	5 types: situations of: adversity, amusement, positioning, conduct, and daily routine	1.0

McAuley, Bond, & Kashima (2002)	Cross-cultural Psych	M	D	Objective characteristics derived from assessing dyad relationships that span combinations of gender, age, family relationships, social class/caste, occupation, social group, economic exchange, recreation, religion, healthcare, professional organizations, politics, and hospitality	56 role dyads sampled in an unspecified manner from 100 role dyads developed by Marwell & Hage (1970)	105 post-graduate students from Hong Kong and 93 advanced undergraduates from Australia assessed dyads (e.g., father-son) on 20 dimensions (e.g., range of activities, variety of locations, frequency of interactions) developed to cover aspects of who, what, when, and where	Factor analysis, 4 dimensions: cluster analysis complexity, equality, adversarialness of contact, and containment	1.1
Ten Berge & De Raad (2002)	Personality	B	T	Unclear	237 descriptions of situations originally developed by Ten Berge and De Raad, 2001 (e.g., "hearing something in confidence")	53 (mostly female) undergraduates rated themselves and were rated by three individuals who know them well on the basis of the extent to which they were "able to deal with" a host of situations	Principal components analysis 4 types: situations of: pleasure, individual adversity, interpersonal conflict, and social demand	1.3
Tett & Burnett	Org. Science	M	T	N/A (theory piece)	N/A (theory piece)	N/A (theory piece)	N/A (theory piece) 5 types relevant to trait expression at	8.8

(2003)						work: job demands, distracters, constraints, releasers, and facilitators
Stewart & Barrick (2004)	Org. Science	M	D	N/A (theory piece)	N/A (theory piece)	1 dimension: cooperation- competition, 4 dimensions: positivity, negativity, productivity, ease of negotiation
Edwards & Templeton (2005- study 1)	Social Psych	B	D	1,039 situational adjectives culled from unabridged dictionary	316 undergraduates rated the situation they experienced the previous evening at 9:00pm on the basis of 395 situational adjectives	1.0
				395 terms randomly selected from list of 1,039	218 participants engaged in above task (using 4:00pm as frame of reference) using new list of 100 adjectives	
				100 terms randomly selected from list of 1,039 (intentional lack of overlap with previous list)		
Edwards & Templeton (2005- study 2)	Personality	B	D	Situations that college students experience encountered over a period of time (e.g., not doing as well as you had hoped on an exam, attending a class lecture)	142 participant subgroup of MDS, linear 316 undergraduates described above sorted 33 one sentence descriptions of situations into groups of their choosing	3 dimensions: valence, task- orientation, amount of involvement situation elicits/social interaction
					218 participants described above rated each 33 one sentence descriptions on terms associated with positivity, negativity, productivity, and ease of negotiation	3 clusters: positive and easy to negotiate, negative and non- productive situations, productive, moderately negative, and difficult to negotiate situations

Yang, Read, & Miller (2005)	Personality	B	T	~3,000 situationally based Chinese idioms, winnowed to 928 on the basis of coder consensus	2 lists 140 idioms each randomly selected from bank of idioms	Situations sorted on the basis of similarity by 404 Chinese and 179 American participants (list 1) and 148 Chinese and 189 American participants (list 2)	Hierarchical cluster analysis	2 broad clusters: positive versus negative [sample 1] and failing versus succeeding [sample 2])	1.3
Fleeson (2007-study 1)	Personality	B	D	26 college students provided four daily reports of reported experiencing situations for 14 days	All participants provided assessments of each situation they experienced	Participants answered 11 questions about each situation they experienced (e.g., how well do you know the others that were around?)	Principal components analyses of 11 questions about situations	3 dimensions: anonymity, friendliness, task-orientation	8.0
Fleeson (2007-study 2)	Personality	B	D	47 college students provided five daily reports for reported experiencing five weeks	All participants provided assessments of each situation they experienced	Participants answered 10 questions about each situation they experienced (seven were identical to those used in the above description)	Principal components analyses of 10 questions about situations	3 dimensions: anonymity, task-orientation, others'	8.0
Saucier, Bel-Bahar, & Fernandez (2007)	Personality	B	T	77 college students provided 7,272 reports of situations that modify the expression of their traits	Two sets of roughly 1,000 stimuli were selected in a stratified manner from the original list	First and third authors sorted stimuli into intuitively based categories. Five coders (including first and third authors) then categorized a new set of 1,000 stimuli into the intuitively based categories.	Sorting tasks assessed through agreement indices	4 broad domains of variables: locations, associations, activities, & passively experienced processes	1.5
Current Study	Org. Science	M	T&D	5.4 million, situational	50 stimuli selected on the basis of cluster	93 employed adults engaged in pairwise	Cluster analysis, MDS	2 dimensions: formality-informality,	N/A

descriptions of work situations created by entering work-relevant terms into random sentence generator	analysis result from sorting task involving random sample of 150 stimuli	comparisons of situational descriptions based on holistic similarity	maintenance-development 4 types: bureaucratic, strategic, incubative, prosaic
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^a B = “broad,” which is operationalized here as a taxonomy that is focused on situations in general, M = “moderate,” which is operationalized here as a taxonomy that is focused on some general category or domain of situations (e.g., family situations), N = “narrow,” which is operationalized here as a taxonomy that is focused on situations as they apply to some specific behavior or category of behaviors (e.g., situations that facilitate creativity).

^b The authors focused on T = types of situations, D = dimensions underlying situations, or T&D = both types and dimensions.

^c Citations per year for peer-reviewed journal articles were calculated via the Social Science Citation Index (SSCI); citations per year for books and book chapters (indicated by an asterisk ‘*’) were calculated via Google Scholar. As a comparison, the per year citation rates for some of the seminal Big Five personality publications are: McCrae and Costa (1987) = 43.7; Digman (1990) = 73.7; McCrae and John (1992) = 31.4; Goldberg (1993) = 50.4.

Appendix E

All Work-Relevant Terms Entered into Sentence Generator to Derive the Population of Potential Stimuli

Verbs (who)			
acknowledging arguing with briefing being interrupted by changing the diapers of communicating with consulting with drinking with engaging in talks with hiring interacting with looking for meeting with negotiating with observing promoting providing support to responding to questions from searching for speaking in front of staying in touch with supporting talking with testing transferring waiting for watching accomplishing	acquiring work for attempting to convince attending a sports event with calling changing the feeding tube of conferring with corresponding with eating with following up with holding interviewing making calls to mentoring networking with playing golf with providing assistance to recruiting routine report preparation for selecting speaking to strategizing with taking notes for teaching thinking about traveling with waiting to see working with adjusting	answering attempting to influence bathing caring for coaching and developing consoling discussing issues with engaging in casual conversation with guiding inquiring with listening to managing motivating notifying preparing providing consultation and advice to responding to scheduling solving problems with speaking with supervising talking to terminating training visiting with walking with administering	

Verbs (what)

advertising	analyzing	answering
applying	approving	archiving
arranging	arriving at	ascertaining
assembling	assessing	assisting
attending	auditing	balancing
banking	boarding	borrowing
briefing	budgeting	building
buying	calculating	calibrating
canceling	categorizing	changing
checking	checking for errors on	checking out
clarifying	cleaning	cleaning up
clearing	climbing	closing
closing up	coding	collecting
compiling	completing	computing
conducting a	confirming	constructing
contacting	controlling	coordinating
correcting	covering	creating
cross selling	cutting	delivering
demonstrating	depositing	designing
determining	developing	digging
directing	disassembling	discussing
distributing	documenting	doing
drafting	drinking	driving
dropping off	duplicating	eating
editing	engaging in	ensuring the compliance of
entering	establishing	estimating
evaluating and verifying	examining	executing
fabricating	faxing	feeding
filing	filling out	fine-tuning
finishing up	fixing	following up on
forecasting	fulfilling	funding
gathering	generating	getting

Verbs (what) – continued

getting ready to leave for	giving	going through
grading	guiding	handling
having	helping with	holding
identifying	identifying new	implementing
inputting	inquiring about	inspecting
installing	interpreting	investing
invoicing	judging	keeping
labeling	laying out	leading
licensing	lifting	lining up
listening to	loading	locating
looking around	looking for	looking up
maintaining	making	making decisions about
managing	maneuvering	manipulating
manufacturing	marketing	measuring distances
modifying	monitoring	moving
navigating	negotiating	observing
obtaining	opening a	operating
ordering	organizing	overseeing
packing	parking	performing
photocopying	picking up	pilot testing
piloting	planning	positioning
preparing	preparing for	preparing to go to a
prescribing	presenting	pricing
printing	prioritizing	problem solving
processing	procuring	producing
programming	projecting	promoting
proof reading	prospecting	providing
purchasing	reading	receiving
recording	recounting	recruiting
recycling	redirecting	refueling
refurbishing	registering for	regulating
rehearsing	rejecting	renewing

Verbs (what) – continued

re-organizing	repairing	replacing
replenishing	reporting	requesting
resolving	responding to	restoring
retaining	retrieving	returning to
reviewing	routine report preparation for	running
scheduling	searching	searching for
securing	seeking	selecting
selling	sending	sending off
servicing	serving	setting
setting up	settling	sewing
shelving	shipping	showing
shutting	shutting down	signaling
signing	solving	sorting
sourcing	speaking at a	speaking in front of
specifying	staffing	stocking
stooping	stopping by	stopping work
storing	strategizing about	structuring
studying	supervising	supporting
surfing the internet	synchronizing	tabulating
taking	taking action on	taking notes for
teaching	terminating	testing
thinking about	tidying	touring
tracking	training	transcribing
transferring	transmitting	traveling to
troubleshooting	typing	understanding
underwriting	unloading	updating
upgrading	using	verifying
viewing	visiting	waiting at the
walking around	walking back to	walking to the
washing	watching	working on
writing	writing up	

Nouns (who)

a broker	a child I take care of	a client
a colleague	a committee	a consultant
a crying baby	a consumer	a contractor
a coworker	a customer	a driver
a governmental representative	a liaison	a member of another department
a nurse	a patient	a peer
a peer support group	a potential employee	a repeat customer
a retail customer	a school group	a service partner
a small business customer	a speaker	a student
a student's parents	a supplier	a support group
a support team	a technical liaison	a technical representative
a technology assistant	account executives	administrators
an external supplier	an instructor	an occupational health coordinator
animals	associates	bookkeeping personnel
branch sales staff	by myself	children
colleagues	community stakeholders	contractors
coworkers	current customers	customers
direct reports	equipment operators	existing clients
fellow employees	financial advisors	guests
inside sales department	investors	management
my administrative assistant	my boss	my business partner
my employees	my employer	my manager
my peers	my project manager	my secretary
my spouse	my staff	my subordinates
my supervisor	myself	new clients
new hires	newborn animals	one of our suppliers
other departments	other staff	parents
patients	prospective clients	senior management
stakeholders	students	support units
tax payers	teachers	team members
the board of directors	the company's receptionist	the director
the division chief	the executive director	the foreman

Nouns (who) – continued

the office staff	the owner	the plant liaison
the producer	the project consultant	the project management team
the project manager	the public	the purchasing department liaison
the sales staff	the superintendent	vendors

Nouns (what)

a balance confirmation	a bath	a bottle
a budget meeting	a budget review	a business deal
a business lunch	a business meeting	a business party
a cab	a checklist	a child's nebulizer
a class	a client account relationship	a client contact
a client inquiry	a client meeting	a client's technical problem
a communication plan	a company vehicle	a conference
a conference call	a conflict	a construction site
a contract	a contractor's work	a course
a credit account	a credit application	a credit inquiry
a customer order	a data collection meeting	a departmental meeting
a discussion with a customer	a driver log	a financial plan
a financial planning meeting	a fitness class	a forklift
a general consultation	a group meeting	a guided tour
a hard copy of a research proposal	a house	a job interview
a legislative review	a management meeting	a market analysis
a message	a mortgage application	a mortgage renewal
a new account	a new business opportunity	a new staff schedule
a package	a portfolio	a portfolio review
a presentation	a production meeting	a product's availability
a product's design	a quote	a rate approval
a records management system	a report	a retail credit account
a retail investment	a sale	a sales call

Nouns (what) – continued

a sales request	a seminar	a service call
a shift change report	a shipment	a sign
a site	a small business credit account	a snack
a speech	a staff meeting	a store display
a strategy	a team building activity	a technical report
a therapy session	a tour	a vehicle to be repaired
a vehicle walk around	a video	a walk-in client sales appointment
a website	a work function	a work meeting
a work order	a work-related social event	a workshop
a write-up	account activity files	account paperwork
account transactions	account transfers	accounting records
accounts	administrative activities	administrative support
advertisement design	advice	Aircraft
an account	an account application	an account maintenance request
an airplane	an annual review	an appointment
an assessment	an ATM (automated teller machine)	an emergency
an event schedule	an initial investment plan	an internal account
an internal audit	an internal meeting	an internal project
an order form	an outdoor walk	an unscheduled break
analysis requirements	animal enclosures	applicant qualifications
applications	appointment bookings	archive retrieval
articles, books, and columns	assigned reading	assignments
authorization	bar codes	billing
billing issues	booking notification	branch acquisition
branch administration	breakfast	building applications
building codes	building inspections	business
business correspondences	business costs	business development
business licensing	business loans	business plan analysis
business strategies	call data	call reports
campaigns	cardholder payment	cash
cash balances	cash management	cash transactions
claims	clerical support	client claims

Nouns (what) – continued

client data	client follow-up	client orders
client questions	clinical research	coffee
cold calls	collateral documentation	collection issues
collections	comments	commercial administration
commercial credit application	commercial marketing	commercial support
committee work	community events	company assets
complaint resolution	complaints	computer inquiry issues
computer reports	computer software	computer support
computer systems	computers	conflicts
construction planning	construction tools and equipment	contact with a customer
contract documentation	contracts	cooperation
copies	council attendance	credit
credit notes	credit reports	credits and debits
custodial duties	customer account requests	customer activities
customer complaints	customer instructions	customer relationships
customer sales and service	customer service	customer service reports
customer support	customer technical support	customers' needs
daily reports	data	data analysis
data entry	data or information	database administration / maintenance
database problems	decisions	deliveries
delivery issues	demonstrations and shows	devices
dinner	dispute resolution	disputes
documentation	documents	drawings
duties	e-business services	electronic equipment
electronic product implementation	emails	emergency calls
emergency repairs	emotional support	employee absences
environmental compliance	equipment and materials	equipment and supplies
equipment issues	equipment repair time	Errors
estate accounts	events	Evidence
exception reporting	exchange rates	external communications
external inquiries	external paperwork	facility inspections
failure analysis	field memos	field work

Nouns (what) – continued

fighting a fire (literally)	files	financial commitments
financial deposits	financial reports	financial statements
fleet administration	fleet optimization	flyers
follow-up orders	food	forklift maintenance
formal communications	forms and databases	forms and manuals
funds	general policies and procedures	goals
grant applications	grievances	housekeeping
ideas	implementation of changes	incoming calls
incoming sales calls	incoming trucks	indicants
industrial machinery	industry associations	informal communications
information	information files	in-house payroll
inquiries	in-store service work	internal calls to sale representatives
internal communications	internal financial information	internal inquiries
internal phone calls	internal queries	internal resources
internal technical support	internet research	interpersonal relationships
inventory	inventory management	Investments
invoices	lab work	laundry
lead generation	legal issues	lending products
lesson plans	letters	liabilities
litigation	loads	loan rates
log books	logistics	long-range business objectives
long-range strategic planning	loss control reports	lunch
machine and equipment maintenance	machinery	machines and processes
mail	maintenance activities	manual labor
manufactured products	marriage licenses	materials and supplies
measurements	mechanical equipment	medical attention
medical charts	medical information	medication
memos	merchandise	merchandise contact
merchant inquiries and services	messages	mileage expenses/reimbursement
mortgage rates	mutual fund acquisitions	my day planner
my office	my schedule	my sermon
my studio	my truck	my work clothes

Nouns (what) – continued

my work equipment	my work station	my work tools
my workday	needed repairs	network configuration
new accounts	new applications	new business
new credit applications	new orders	new product ideas
new products	night deposits	notes
numerical estimates	office supplies	old financial documents
on-site technical support	opportunities	order details
orders	organizational operating practices	organizational policies and procedures
our products	outdoor maintenance	outgoing calls
outgoing cash	packages	papers
paperwork	parts	passenger vehicles
payroll	payroll problems	payroll procedures
performance standards	permit reviews	personal assistance
personal calls	personal care	personnel issues
personnel planning	personnel reviews	phone calls
phone messages	photocopies	physical activity
physical labor	placards	plans
plant tours	play area	play time
policies and procedures	policy renewals	post analysis
post implementation review	post-dated check payments	pre-analysis
preparing events	presentation preparation	presentations
preventative maintenance	problems	procedural standards
process improvement	processes	product administration
product design consulting	product development	product information
product prices	product requirements	product research and development
product samples	product support	products
profit analysis	programs	project management
project supervision	promotional marketing	property maintenance
proposals	public relations	purchasing requisitions
qualifications	quality control	questions
quotes	rate changes	rates and fees
regulatory compliance	regulatory paperwork	relationships

Nouns (what) – continued

remote technical support	rental agreements	repairs
report preparation	reports	requests
required training	research manuals	resources
respect	results	resumes
retail banking activities	retail credit maintenance	retail products
retention calls	reward and recognition activities	risk
risk management	safety compliance	sales
sales assistance	sales calls	sales emails
sales leads	sales letters	sales management
sales materials	sales meetings	sales presentation
sales reports	sales support	schedules
seminar materials	services	shipping containers
shipping memos	skill building	small business sales calls
software administration	software applications	software conversion consultation
software support	software training	solutions
some work items	specifications	staff inquiries
staff suggestions	standards	statistical reports
stock	stock orders	store visits
strategic support	structures and materials	student absence messages
summaries and manuals	supplier development	supplies
supply issues	support	surroundings
survey analyses	systems	systems issues (hardware and/or software)
tasks	tax returns	taxes
team building	team duties	team meetings
technical information and assistance	technical problems	technical support
technical training	technology issues	telephone calls
territory analysis	territory data	thank you notes
the budget	the company's mission statement	the daily huddle
the daily market update	the day	the internet
the mail	the minutes of a meeting	the operation of equipment
the spending of money	the work of others	time and attendance records
time sheets	tours	toys

Nouns (what) – continued

trades and orders	trailers	training delivery
training needs	transaction reports	transactions
transfers	transport issues	travel
truck routes	trucks	unscheduled assistance
vehicle inspection	vehicle maintenance	vehicles
vendor issues	vendor meetings	verbal instructions
visitors	voice mails	warehouse maintenance
warehouse releases	warranty claims	watercraft
weekly reports	Work	work activities
work supplies	worksheets	written instructions

Context

after the start of the job	after work	as a community service (pro bono)
as a means of networking	as efficiently as possible	as part of a team building activity
as part of compliance procedures	as part of my management duties	as part of my primary duties
as part of my project management duties	as quickly as possible	at a board meeting
at a building supply store	at a business lunch	at a client's office
at a coffee shop	at a community event	at a conference
at a customer's house	at a customer's office	at a job fair
at a meeting	at a potential rental space	at a resort
at a restaurant	at a sales presentation	at a third party agency
at a tradeshow	at a training meeting	at a warehouse
at a weigh station	at an appointment	at another office
at customer locations	at home	at lunch
at my desk	at the airport	at the bank
at the community center	at the construction site	at the customer's factory
at the customer's office	at the customer's warehouse	at the fax machine
at the head office	at the help desk	at the jobsite
at the main office	at the next customer location	at the office supply store
at the photocopier	at the post office	at the recruiting office

Context – continued

at the shop	at the storage facility	at the store
at the warehouse	at the worksite	at work
back to the office	based on details outlined by my boss	based on federal regulations
based on my best judgment	based on my supervisor's instructions	based on recent changes
based on recent developments	because I forgot to do so before	because it is part of my job
because it is part of my team duties	because my boss asked me to	because of recent changes
because of recent developments	because the law requires it	before a presentation
before an approaching deadline	before work	between meetings
between reviews	by phone	due to missing information
due to weather	during a power outage	during a production meeting
during a regional business trip	during a service visit	during a teleconference
during a walk through	during an on-the-job training session	during an unscheduled work break
during breakfast	during equipment repair time	during idle time
during my coffee break	during my downtime	during my work break
during operational downtime	during the children's nap time	during the daily huddle
even though I am not supposed to	face-to-face	for a client
for a conference	for a new client	for business
for clients	for my staff	for others
for prospects	for the day	for the good of the community (pro bono)
from all relevant sources	from another branch	from another store
from clients	from customers	from internal sources
from my home office	from my manager	from the help-desk
in a cab	in a client's home	in a company vehicle
in a professional manner	in a storage trailer	in an attempt to improve it
in an emergency	in another city	in another department
in my car	in my home office	in order to assess its accuracy
in order to comply with regulations	in order to comply with standards	in order to help our relationship develop
in order to identify the problem	in order to identify the source of the error	in order to meet my manager's expectations
in person	in response to a customer's complaint	in the backroom / storage area
in the break room	in the computer system	in the mailroom
in the parts department	in the preparation area	in the staging area

Context – continued

in the store	in the workshop	in writing
my truck	on a company laptop	on my computer
on my work laptop	on the bus	on the phone
one-to-one	online	outdoors
outside my office	over my lunch hour	over the telephone
regarding company policies	regarding our benefits package	regarding renewals
that occurred overnight	throughout the plant	to a client
to prospective clients	to protect them from the elements	via email
via fax	via the web	while at a conference
while at the client's office	while in a loud and distracting environment	while on my commute
while on stand-by	while on the road	while the computer system is down
while traveling	while working	while working late
while working overtime	with a client	with a customer
with an employee	with clients	with my boss
with my co-workers	with my employees	with my supervisor
with my work team	with the branch manager	

Appendix F

150 Stimuli from Procedures 2 (Alphabetical Order)

Stimulus #	Stimulus	Cluster
1	Answering phone calls at the main office.	3
2	Answering questions from the board of directors after a presentation.	2
3	Answering students' questions at a community event.	2
4	Archiving credit applications based on federal regulations.	3
5	Arguing with the owner over the telephone.	2
6	Arguing with the project manager in her office.	2
7	Assessing training needs based on recent developments.	2
8	Attempting to influence senior management at a client's office.	2
9	Attending a company-sponsored fitness class with my coworkers.	1
10	Attending a presentation in another department.	2
11	Being interrupted by my staff during my coffee break.	1
12	Briefing the division chief during a teleconference.	2
13	Calculating billing because it is part of my job.	3
14	Calculating payroll as efficiently as possible.	3
15	Calling a supplier while working late.	2
16	Calling my administrative assistant from the airport.	2
17	Carpooling to work with a coworker.	1
18	Categorizing post-dated check payments at the warehouse.	3
19	Changing a child's diaper as part of my regular duties.	3
20	Chatting with a coworker in the break room.	1
21	Chatting with customers at my restaurant.	1
22	Chatting with sales associates at the store.	1
23	Checking for errors during equipment repair time.	3
24	Checking for system errors as part of my project management duties.	3
25	Checking in with a colleague at a potential rental space.	2
26	Checking in with a consultant between meetings.	2
27	Cleaning animal enclosures in order to comply with regulations.	3
28	Cleaning up my workspace during idle time.	3
29	Coaching and developing equipment operators at the worksite.	2
30	Coaching and developing students outdoors.	2
31	Communicating new safety compliance standards because the law requires it.	2

Stimulus #	Stimulus	Cluster
32	Communicating with patients during an appointment.	2
33	Completing maintenance activities at the construction site.	3
34	Consulting with a technical liaison to identify the source of an error.	2
35	Consulting with new hires at the store.	2
36	Consulting with stakeholders based on details outlined by my boss.	2
37	Contacting an external supplier because my boss asked me to.	2
38	Covering equipment and materials to protect them from the elements.	3
39	Dealing with stakeholders because it is part of my job.	2
40	Dealing with the foreman via email.	2
41	Disassembling a vehicle in order to identify the problem.	3
42	Discussing internal financial information during a weekly staff meeting.	2
43	Discussing issues with the production staff operational downtime.	2
44	Discussing problems with direct reports as part of a team building activity.	2
45	Documenting outgoing calls because the law requires it.	3
46	Doing manual labor at the worksite.	3
47	Drinking with prospective clients for business.	1
48	Driving with a student because it is part of my job.	3
49	Eating a snack in the break room during my coffee break.	1
50	Engaging in casual conversation with associates at the storage facility.	1
51	Engaging in routine report preparation for my manager.	3
52	Estimating software conversion costs based on my supervisors instructions.	3
53	Evaluating computer systems at a client's office.	3
54	Faxing client orders to the main office.	3
55	Feeding a child I take care of because it is part of my job.	3
56	Feeding newborn animals as part of my primary duties.	3
57	Filling out my time sheet at the end of the day.	3
58	Fine-tuning equipment in the workshop.	3
59	Fixing a forklift at the jobsite.	3
60	Following up with fellow employees in person.	2
61	Following up with the support team at a business lunch.	2
62	Gathering process improvement information as part of compliance procedures.	3
63	Going over account transactions at my desk.	3
64	Going over mortgage rates with a client.	2
65	Going through customer complaints with my employees.	2

Stimulus #	Stimulus	Cluster
66	Going through customer service reports at a restaurant.	3
67	Grading student assignments at home.	3
68	Handling external communications because it is part of my job.	2
69	Helping a subordinate with a speech as part of my management duties.	2
70	Inquiring about a product's availability from another store.	2
71	Inquiring about a sale from my home office.	3
72	Interviewing a potential employee at the main office.	2
73	Listening to voicemails after my lunch break.	3
74	Locating data in order to comply with regulations.	3
75	Meeting with the executive director regarding conference planning.	2
76	Meeting with the project consultant regarding technical problems.	2
77	Mentoring a subordinate as part of long-range strategic planning.	2
78	Networking with senior management at a business lunch.	1
79	Organizing equipment and supplies at the factory.	3
80	Organizing sales reports for a client.	3
81	Photocopying forms at the main office.	3
82	Planning a conference because it is part of my job.	3
83	Planning a work-related social event with my co-workers.	1
84	Planning my workday at a coffee shop.	3
85	Playing golf with clients as a means of networking.	1
86	Presenting our financial plan to the board of directors.	2
87	Pricing computer systems online.	3
88	Pricing equipment and materials at a tradeshow.	3
89	Proofreading a post implementation report with a co-worker.	2
90	Providing assistance to an instructor based on recent changes.	3
91	Providing assistance to subordinates during a production meeting.	3
92	Providing consultation and advice to administrators at a client's office.	3
93	Providing consultation and advice to the purchasing department liaison based on my best judgment.	3
94	Providing information to a customer because it is part of my job.	3
95	Providing information to potential investors at a business lunch.	2
96	Providing remote technical support to a client.	2
97	Providing software training at another office.	2
98	Reading a hard copy of a research proposal on a plane.	3

Stimulus #	Stimulus	Cluster
99	Reading financial statements at my desk.	3
100	Reading grant applications at home.	3
101	Recording cash transactions based on company policies and procedures.	3
102	Refueling a company vehicle during a regional business trip.	3
103	Rehearsing a speech in my office.	3
104	Responding to questions from an external supplier while driving home from work.	2
105	Responding to questions from sub-contractors during a walk through.	2
106	Reviewing contractor proposals because the law requires it.	3
107	Running a financial planning meeting via conference call.	2
108	Searching for financial advisors online.	3
109	Sending a package to prospective clients.	3
110	Sending forms and manuals to a client.	3
111	Serving coffee at the restaurant.	3
112	Signing paperwork in a cab.	3
113	Socializing with a coworker outside my office.	1
114	Solving problems with customers while at a conference.	2
115	Sorting financial deposits at the end of the day.	3
116	Speaking to account executives because my boss asked me to.	2
117	Speaking to administrators regarding our benefits package.	2
118	Speaking with a client during a production meeting.	2
119	Speaking with a consultant at a third party agency.	2
120	Speaking with a governmental representative as part of compliance procedures.	2
121	Speaking with fellow employees while in a loud and distracting environment.	2
122	Supervising equipment operators at the worksite.	2
123	Supervising new employees because my boss asked me to.	2
124	Supporting a client while working late.	3
125	Surfing the internet during my work break.	1
126	Surfing the internet even though I am not supposed to.	1
127	Tabulating the parts department's time sheets.	3
128	Taking care of personal issues over the phone.	1
129	Taking notes during a long-range strategic planning meeting.	3
130	Taking notes for my project manager at the customer's factory.	3
131	Talking about incoming trucks at a meeting.	2
132	Talking to a consultant about software administration.	2

Stimulus #	Stimulus	Cluster
133	Talking to coworkers from another office.	2
134	Talking with a nurse about a patient.	2
135	Talking with associates based on details outlined by my boss.	2
136	Talking with prospective clients over the phone.	2
137	Teaching children at the community center.	2
138	Thinking about new product development based on details outlined by my boss.	3
139	Tidying my studio after work.	3
140	Tidying up the play area during the children's naptime.	3
141	Training the company's receptionist to use a new computer system.	2
142	Troubleshooting computer systems for a client.	3
143	Updating a retail credit account based on recent changes.	3
144	Visiting with a coworker while the computer system is down.	1
145	Waiting for my staff at the storage facility.	1
146	Waiting for the branch's sales staff at a coffee shop.	1
147	Watching a speaker at a community event.	1
148	Working with my peers at a job fair.	1
149	Writing personal emails while I'm supposed to be working.	1
150	Writing up time and attendance records in my office.	3

Appendix G

Step 2 Instructions

INTRODUCTION:

Thank you for agreeing to be part of my dissertation. I am interested in better understanding the ways in which work situations experienced across a variety of occupations can be grouped into categories based on their similarity.

Recall that you must work at least 30 hours per week in a non-student occupation to be eligible to participate.

GENERAL INSTRUCTIONS:

Assign each of the situational descriptions to a group based on its similarity to other situations in that group. Even though you may have strong personal opinions about some of these situations, please do your best to think about them as if you were a neutral observer, who is watching others engage in these situations.

Take, for example, the following situation:

Having a performance appraisal with my boss.

Even though this situation might make you nervous, try to focus on its objective characteristics as much as possible. For example, in this situation: a) someone is being evaluated, and b) there is a power difference between the two individuals involved. Thus, you might choose to put this situation into a category that you name “formal assessment situations” or “evaluative situations” (again, these decisions and labels are completely up to you).

As another example:

Chatting with a co-worker at the water cooler about our weekend plans.

Here you might choose to create a category for “unsanctioned activities” or “socializing.” Again, these choices are yours to make – please do your best, however, to view them as if you were an impartial observer.

SORTING INSTRUCTIONS:

To create a group, simply click the "add group" button at the top of the window on the next page. To name this group, click the section of the new folder labeled "click to name." To put a given situation into a given category, simply drag the description from the list on the left, into the group that *you think* it best belongs in.

Please note that there are no right or wrong answers and there is no right or wrong number of groups to create. Simply read each description and place it into the category that you think it best fits into – but please make sure that the items that you ultimately place into a given group are similar to the other items you placed in that group.

If you are unsure about what to do, please click the “watch demo” button below. This demonstration will show you how to create groups, name groups, and place stimuli in them.

This activity will take roughly one hour and must be completed in one sitting (i.e., you *cannot* save your work and come back to it at a later time).

Thank you for taking the time to participate in this study. Please feel free to contact me at: meyer@psych.purdue.edu if you have any questions, comments, or concerns.

Sincerely,

Rustin Meyer

Purdue University

Graduate Student: Industrial/Organizational Psychology

Email: meyer@psych.purdue.edu

Homepage: <http://web.ics.purdue.edu/~meyerrd/>

POST-TASK CLOSING:

If you want to learn more about the specific purpose of this study, read on at your own risk...

Purpose of my Dissertation

Psychologists have long recognized that a full understanding of human behavior requires that we understand aspects of individuals (e.g., their personality, intelligence, values) and aspects of the situations they experience. This school of thought is known as "interactionism," but its full implementation obviously requires a thorough understanding of individuals and a thorough understanding of situations. Researchers on the person-side of this equation have done a very good job of making sense of the myriad variables that can be used to describe who we are, but situational researchers have made substantially less progress. Thus, it has traditionally been very difficult to fully understand behavior as a joint function of persons and situations.

Drawing from the Linnaean taxonomy used by biologists to classify organisms, my research is devoted to developing a similar taxonomy that can be used to categorize the

different types of situations that humans experience. Although my dissertation is focused exclusively on work situations, my ultimate goal is to create a framework that can be used to categorize **all** types of situations (e.g., family situations, educational situations, leisure situation), with the ultimate hope that this taxonomy will be able to be used by researchers in a variety of fields in an attempt to better apply the concept of interactionism.

The task that you just completed will be analyzed via a family of statistical tests known as "cluster analysis," which is used to better understand groups of similar stimuli. A smaller number of the situations you just classified will then be compared by another group of researchers in a "pair-wise" fashion (meaning that all possible combinations of situations will be compared directly to each other on the basis of their holistic similarity). I will then use a substantively different statistical technique known as "multidimensional scaling" to gain a better understanding of the psychologically-active ingredients that ultimately underlie each type of situation.

As an analogy, imagine you are interested in understanding various types of beverages and the effects they have on behavior. After a little research, you find that beverages can best be divided into two categories: light-colored cold beverages and dark-colored warm beverages. You then discover that dark-colored warm beverages tend to increase energy and awareness, whereas light-colored cold beverages do not. Although this information is important and interesting, it says very little about the "active ingredient" that causes these behavioral differences. After more research, you ultimately determine that caffeine is the substantive cause of this differential outcome. Thus, you have moved from understanding how superficial changes in stimuli (i.e., the color and temperature of beverages) affect outcomes, to understanding the root cause of these differences (i.e., caffeine).

I am trying to do the same thing with our understanding of situations. On the one hand, it is interesting to observe that Darth Vader bows in willful subordination to his supervisor (The Emperor) but frequently abuses his subordinates, but our understanding of *why* he does this can only be discovered once we fully understand him as a person *and* the psychologically-meaningful differences between interacting with his supervisor and interacting with his subordinates. My dissertation is the first step in this process—thanks for being a part of it (and may The Force be with you).

Appendix H

Stimulus Set 3a

Attending a presentation in another department.
Calculating payroll as efficiently as possible.
Calling a supplier while working late.
Chatting with sales associates at the store.
Checking for errors during equipment repair time.
Cleaning animal enclosures in order to comply with regulations.
Coaching and developing students outdoors.
Communicating new safety compliance standards because the law requires it.
Consulting with stakeholders based on details outlined by my boss.
Covering equipment and materials to protect them from the elements.
Discussing issues with the production staff during operational downtime.
Engaging in routine report preparation for my manager.
Faxing client orders to the main office.
Fixing a forklift at the jobsite.
Inquiring about a product's availability from another store.
Planning a conference because it is part of my job.
Presenting our financial plan to the board of directors.
Providing information to potential investors at a business lunch.
Reviewing contractor proposals because the law requires it.
Tabulating the parts department's time sheets.
Talking about incoming trucks at a meeting.
Visiting with a coworker while the computer system is down.
Waiting for the branch's sales staff at a coffee shop.
Writing personal emails while I'm supposed to be working.
Writing up time and attendance records in my office.

Appendix I

Stimulus Set 3b

Attending a company-sponsored fitness class with my coworkers.
Calling a supplier while working late.
Carpooling to work with a coworker.
Categorizing post-dated check payments at the warehouse.
Chatting with a coworker in the break room.
Checking for system errors as part of my project management duties.
Communicating with patients during an appointment.
Completing maintenance activities at the construction site.
Contacting an external supplier because my boss asked me to.
Dealing with the foreman via email.
Discussing internal financial information during a weekly staff meeting.
Discussing problems with direct reports as part of a team building activity.
Feeding newborn animals as part of my primary duties.
Filling out my time sheet at the end of the day.
Fine-tuning equipment in the workshop.
Going over mortgage rates with a client.
Going through customer service reports at a restaurant.
Interviewing a potential employee at the main office.
Locating data in order to comply with regulations.
Refueling a company vehicle during a regional business trip.
Reviewing contractor proposals because the law requires it.
Socializing with a coworker outside my office.
Speaking to administrators regarding our benefits package.
Talking with prospective clients over the phone.
Tidying my studio after work.

Appendix J

Step 3 Instructions

WELCOME (DEMOGRAPHICS):

Thank you for agreeing to participate in my dissertation. This portion of the activity asks about basic background information and will be used for descriptive purposes only. Please use a nickname to ensure your anonymity and skip any questions you are uncomfortable answering .

When you are done, please click the "submit" button below.

WELCOME:

Thank you for your interest in this study—please note that all of your responses are completely anonymous.

The first portion of the study asks about basic background information and will be used for descriptive purposes only. Please skip any questions you are uncomfortable answering.

Please click 'Next' if you agree to participate in this portion of the study. Please click 'Exit and Clear Survey' if you do not wish to participate.

INSTRUCTIONS:

The next portion of the study asks you to compare pairs of work situations on the basis of their general similarity. Even though you may have strong personal opinions about some of these situations, please do your best to think about them as if you were a neutral observer who is watching others engage in them.

Take, for example, the following pair of hypothetical (non-work related) situations:

- ‘Waiting in line to get on a roller coaster with friends’
- ‘Waiting to go sing a solo in front of a large number of people’

Even though you might love roller coasters but hate singing, try to focus on the aspects of these situations that would be apparent to an outside observer, with a focus on the extent to which these aspects are similar versus dissimilar. For example, the individual is waiting in both situations, the individual is likely experiencing some nervous anticipation in both situations, but the singer is being evaluated whereas the roller coaster riders are not.

When making this general assessment, please use the following 1 to 7 scale to rate the similarity/dissimilarity of these situations:

- 1 = Very Dissimilar
- 2 = Dissimilar
- 3 = Somewhat Dissimilar
- 4 = Neither Similar nor Dissimilar
- 5 = Somewhat Similar
- 6 = Similar
- 7 = Very Similar

There are no right or wrong answers. Simply read each description and make the judgment that best describes the relationships among each of these situations in your mind, using any criteria that seem relevant to you.

Please work at whatever pace you are most comfortable with and feel free to pause whenever you get fatigued. This activity will take most participants roughly one hour to complete. If you need to stop, you may save your work and come back to it at a later time using the 'Save Survey and Return' function.

Please click 'Next' if you agree to participate in this portion of the study. Please click 'Exit and Clear Survey' if you do not wish to participate.

CLOSING:

Thank you very much for participating in my dissertation—your assistance is sincerely appreciated. If you have any questions, comments, or concerns please feel free to contact me at: meyer@psych.purdue.edu

You may now close your internet browser or learn more about me by clicking here: <http://web.ics.purdue.edu/~meyerrd/>

VITA

VITA

Rustin D. Meyer
 703 Third Street – Room 2192
 West Lafayette, IN 47907-2081
 Cell: (765) 532-1164
 Email: meyer@psych.purdue.edu

EDUCATION

PhD – Purdue University Major: Industrial/Organizational Psychology	August 2009 (expected)
M.S. – Purdue University Major: Industrial/Organizational Psychology	Fall 2003 – Spring 2006
B.A. – University of Northern Iowa	Fall 1998 – Spring 2003

PUBLICATIONS

- Meyer, R. D. (2007). Incremental validity. In S. Rogelberg (Ed.), Encyclopedia of industrial/organizational psychology. Thousand Oaks, CA: Sage Publications.
- Meyer, R. D. (2007). Verbal protocol analysis. In S. Rogelberg (Ed.), Encyclopedia of industrial/organizational psychology. Thousand Oaks, CA: Sage Publications.
- Meyer, R. D., & Dalal, R. S. (2009). Situational strength as a means of conceptualizing context. Industrial and Organizational Psychology: Perspectives on Science and Practice, 2, 99-102.
- Meyer, R. D., Dalal, R. S., & Bonaccio, S. (in press). A meta-analytic investigation into situational strength as a moderator of the conscientiousness-performance relationship. Journal of Organizational Behavior.
- Reeve, C. L., Meyer, R. D., & Bonaccio, S. (2006). Intelligence-personality associations: The importance of distinguishing between general and narrow dimensions of intelligence. Intelligence, 34, 387-402.

EXTRAMURAL FUNDING

Dalal, R. S., & Meyer, R. D. – Co-PI (Pending Final Approval). Dissecting Situational Strength. Army Research Institute, Research Contract (Proposed budget: \$120,000.00).

DISSERTATION PROGRESS

Proposal Defended:	Completed Spring 2008
Data Collection:	Completed September 2008
Expected Completion:	March 3rd, 2009

MANUSCRIPTS UNDER REVIEW

Dalal, R. S., & Meyer, R. D. Implications of situational strength for HRM. Human Resource Encyclopedia.

Meyer, R. D., & Dalal, R. S. (revise and resubmit). A Review and synthesis of situational strength in the organizational sciences. Journal of Management.

PROJECTS IN PREPARATION

Bonaccio, S., Meyer, R. D., Reeve, C. L., & Dalal, R. S. (In Preparation). Does Intelligence Predict Discretionary Work Behavior? Society for HR Management. (Proposed budget: \$200,000.00).

Dalal, R. S., Jose, I., & Meyer, R. D. Examining the role of situational strength in person-environment fit. (data collection in progress).

Meyer, R. D. Toward a dimension-based, hierarchical taxonomy of situations. (data collection in progress).

Meyer, R. D., Dalal, R. S., & Jose, I. Development and psychometric properties of the Situational Strength Scale. (data collection in progress).

Meyer, R. D., & Campion, M. A. The practical consequences of using a rectangular null distribution when calculating rwg. (data collection in progress).

Meyer, R. D., & Krasikova, D. Confirmatory Factor Analysis in the Organizational Sciences. (data collection in progress).

Reeve, C. L., Goh, A., & Meyer, R. D. On the use of moderated multiple regression (MMR) in the organizational sciences (data collection in progress).

TECHNICAL REPORTS

- Weiss, H. M., MacDermid, S. M., Weigand, K. E., Jackson-Mehta, A. R., & Meyer, R. D. (2005). Status of forces report: Organizational commitment benchmarking. West Lafayette, IN: Military Family Research Institute: Purdue University.
- Lutz, G. M., Gonnerman, M. E., Jr., Mayfield, J., Meyer, R., Maitland, A. (2002). Alumni and Public Views of UNI: 2002 Survey Results. Cedar Falls, IA: University of Northern Iowa, Center for Social and Behavioral Research. Report prepared for UNI Office of Marketing and Public Relations (Cedar Falls, Iowa). (pp. 136).

CONFERENCE PRESENTATIONS AND POSTERS

- Meyer, R. D. (2003, April). Overt racism or cultural misunderstandings: An examination in employment interviews. Poster presented at the 9th annual University of Northern Iowa Undergraduate Research Conference, Cedar Falls, IA.
- Meyer, R. D. (2003, April). Perceptions of the devil's advocate in small group discussion. Poster presented at the 10th annual University of Northern Iowa Undergraduate Research Conference, Cedar Falls, IA.
- Meyer, R. D. (2003, April). Psychological issues among animal shelter employees who perform euthanasia. Poster presented at the 10th annual University of Northern Iowa Undergraduate Research Conference, Cedar Falls, IA.
- Meyer, R. D. (2003, May). Overt racism or cultural misunderstandings: An examination in employment interviews. Poster presented at the Psi Chi Division of the Midwest Psychological Association's Annual Research Conference, Chicago, IL.
- Meyer, R. D. (2003, May). Perceptions of the Devil's advocate in small group discussion. Poster presented at the Psi Chi Division of the Midwest Psychological Association's Annual Research Conference, Chicago, IL.
- Meyer, R. D., Reeve, C. L., Heggstad, E. D., & McCloy, R. (2005, April). Cognitive mapping strategies of responses to multidimensional forced-choice personality items. Poster presented at the 20th Annual Conference of the Society for Industrial and Organizational Psychology, Los Angeles, CA.
- Olson, T. M., Meyer, R. D., & Dalal, R. S. (2005, April). Contributions of different types of events to mood at work. Symposium presented at the 20th Annual Conference of the Society for Industrial and Organizational Psychology, Los Angeles, CA.
- Reeve, C. L., Meyer, R. D., & Bonaccio, S. (2005, April). Relations among general and narrow dimensions of intelligence and personality. Poster presented at the 20th Annual Conference of the Society for Industrial and Organizational Psychology, Los Angeles, CA.

- Meyer, R. D. (2006, May). Conscientiousness, situations and organizational citizenship: An interactional meta-analysis. In R. S. Dalal (chair), Citizenship, and counterproductivity: Using innovative methods to explore difficult questions. Presented at the annual meeting of the Society for Industrial and Organizational Psychology (Dallas, TX).
- Meyer, R. D. (2006, June). Situational moderators of the conscientiousness-performance relationship: An interactional meta-analysis. Presented at the annual meeting of the International Public Management Association's Assessment Council (IPMAAC; Las Vegas, NV).
- Meyer, R. D., & Baysinger, M. A. (2007, March). RIASEC environments as conscientiousness-performance moderators: A meta-analytic test of congruence versus situational strength. Presented at the 2007 IOOB student conference (Indianapolis, IN).
- Meyer, R. D., Dalal, R. S., Baysinger, M. A., & Bonaccio, S. (2007, May). RIASEC environments as meta-analytic conscientiousness-performance moderators: Congruence versus situational strength. Presented at the annual meeting of the Society for Industrial and Organizational Psychology (New York, NY).
- Meyer, R. D., & Krasikova, D. (2009, April). A review of confirmatory factor analysis in the organizational sciences. Presented at the annual meeting of the Society for Industrial and Organizational Psychology (New Orleans, LA).

SOLE INSTRUCTORSHIP TEACHING EXPERIENCE

Industrial/Organizational Psychology (PSY 272) Fall 2007, Fall 2008, & Spring 2009

Developed, taught, and managed Purdue's Introduction to I/O Psychology course (three semesters). Enrollment consisted of roughly 80 sophomore-level students and one graduate TA.

Introduction to Psychology (PSY 120) May 2006 – May 2009

Developed, taught, and managed Purdue's Introduction to Psychology course (seven semester). Enrollment ranged from 18 to 35 students during May and Summer terms, and 380 to 460 students during the Fall and Spring terms.

TEACHING ASSISTANTSHIPS

Industrial/Organizational Psychology (PSY 272) Fall 2005 & Spring 2006

Assisted in the development and grading of exams and assignments, attended classes, held office hours, and guest lectured on organizational development, organizational power, and organizational communication.

Elementary Psychology (PSY 120) – Honor’s Coordinator Fall 2003, Spring 2004,
& Spring 2008

Coordinated and designed educational workshops regarding the basics of psychological research methods for groups of undergraduate honor’s students who were designing independent research projects.

Undergraduate TA – Psychological Statistics Fall 2002

Provided one-on-one assistance to students regarding basic statistical techniques common in the social sciences, helped develop course materials, held office hours, and attended class.

Undergraduate TA - Psychological Research Methods Fall & Spring 2001

Helped advanced undergraduate students design and present mock research projects and publications; included one-on-one interactions, developing lectures and other course materials, and providing formal written feedback.

Undergraduate TA - Introductory Social Psychology Fall 2000

RELEVANT WORK EXPERIENCE

Research Assistant May 2004 – August 2005

Purdue University’s Military Family Research Institute (MFRI)

Purdue’s MFRI is an inter-disciplinary research center sponsored the U.S. Department of Defense’s Office of Community and Family Policy. MFRI is dedicated to studying military family quality of life issues with researchers from diverse areas such as Industrial/Organizational Psychology, Family Studies, the Krannert School of Management, and Statistics. I have worked on numerous studies while at the MFRI including co-authoring a technical report dedicated to benchmarking levels of organizational commitment among military members and their families.

Research Assistant May 2001 – May 2003

University of Northern Iowa’s Center for Social and Behavioral Research (CSBR)

The University of Northern Iowa’s CSBR, conducts a variety of types of social research for both local and state governmental agencies, as well as private organizations. My duties included quantitative analysis, data management, report and presentation preparation, data entry, database management, and the logistical coordination of various aspects of the research process.

RELEVANT COURSEWORK

Regression	Industrial Psychology
ANOVA	Organizational Psychology
Advanced Research Methods (2 semesters)	Personnel Selection
Multivariate Statistics	Individual Differences
Multilevel Modeling	Job Attitudes
Factor Analysis	Work Motivation
Psychometrics	Publishing in the Org. Sciences

COMPUTER SKILLS

SPSS	AMOS
SAS	HLM
Zumastat	LISREL
Microsoft Office suite	

PROFESSIONAL SERVICE

Ad hoc reviewer – Organizational Research Methods

Reviewer – SIOP Conference

INVITED TALKS

Life as a PhD graduate student in I/O Psychology - University of Northern Iowa,
Spring 2004.

PROFESSIONAL ORGANIZATION MEMBERSHIP

American Psychological Association	(Student Affiliate)
Society for Industrial and Organizational Psychology	(Student Affiliate)
Academy of Management	(Student Affiliate)
International Public Management Association's Assessment Council	

LOCAL SERVICE ACTIVITIES

Lab Coordinator - Dalal Lab: Purdue University

Coordinated all laboratory activities for Dr. Reeshad Dalal's Industrial/Organizational Psychology and Decision Making lab; included recruiting and selecting research assistants, scheduling, managing lab space, developing educational workshops on numerous steps in the psychological research process.

Purdue Association of Graduate Students in I/O Psychology: Treasurer Fall 2004 – Spring 2006

Managed the finances of Purdue's I/O graduate student association.

I/O Graduate Student Recruitment Weekend Coordinator Spring 2004

Coordinated the weekend activities of prospective Purdue I/O graduate students.

Graduate Student Advisory Council

Provided input regarding policies for graduate education within Purdue University's Department of Psychological Sciences.

HONORS AND AWARDS

Graduate Research Publication Award (Psychology), Spring 2009

Graduate Student Award for Outstanding Teaching (Psychology), Spring 2009

Winner of the International Public Management Association Assessment Council's (IPMAAC) 2006 Student Paper of the Year Award for: Situational Moderators of the Conscientiousness-Performance Relationship: An Interactional Meta-Analysis.

Psi Chi National Honor Society

Omicron Delta Kappa Honor Society - Granted to the top one half of one percent of campus leaders.

Golden Key National Honor Society

Dean's List - College of Social and Behavior Sciences: Fall 1999 – Spring 2003

Alderman Scholarship Recipient

Farm Bureau Scholarship Recipient

REFERENCES

Dr. Reeshad S. Dalal (advisor)
Assistant Professor of Psychology
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(217) 840-3825
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University of North Carolina at Charlotte
(704) 687-4748
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