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ARE OUR VALUES BEING MEASURED ADEQUATELY? CREATION OF A MORE COMPRHENSIVE WORK VALUES SCALE

by

DANIEL R KRENN

THESIS

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

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Approved by:

_____

Advisor Date

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CHAPTER 1 "BACKGROUND

Introduction

Personal values systems are an individual difference that has received surprisingly little attention within organizational research. Personal values typically refer to terms that describe what we find important in our lives (Locke, 1991; Robinson & Betz, 2008). These personal values are influential in many aspects of our lives, including work. For example, values are also an influential factor in person-organization fit (Borg, Groenen, Jehn, Bilsky, Schwartz, 2011). Prior research has associated values with goal setting which effectively influences motivation and performance (Locke, 1991; Young, Beckman, & Baker, 2012). These findings apply to higher levels of analysis as well. Values can be collective constructs that explain what groups find important. For example, values are a component of organizational culture and climate (Schein, 1990). There is a relationship between presence of shared group values and group level performance (Huang, Liang, & Hsin, 2012). In addition, the alignment of an individual's personal values with a group's personal values can be predictive of important individual outcomes such as intention to stay with an organization (Edwards & Cable, 2009). Because values influence many constructs within organizational research, accurate and useful assessments of work related values are somewhat important in research and business practice. As such, the overarching goal of this paper is to improve assessment of work related personal values.

In the psychology literature, it has become an accepted theory that the person and situation interact to produce behavior (Chatman & Barsade, 1995; Diener, Larsen, & Emmons, 1984; Lewin, Heider, & Heider, 1936). Because the environment and person interact, sound research should consider both factors. Researching the "person" aspect is essentially the process of considering individual difference variables such as personality, intelligence, and values. For example, most researchers agree that general cognitive ability an important and effective predictor

of performance (Chernyshenko, Stark, & Drasgow, 2010; Ree, Earles, & Teachout, 1994). However, not all research on individual difference variables is respected as much as general cognitive ability. An individual difference variable that has met criticism is values (Chernyshenko et al, 2010). Presently, values scales are prone to at least four problems: 1. Inaccurate responding due to self-report Likert scale use. 2. Limited information obtained from scales. 3. Issues with adequacy of measurement. 4. Inconsistencies in existing values taxonomies.

Like personality scales, values scales are predominantly dependent on honest self-report from participants and are prone to socially desirable responding. Fisher and Katz (2000) argued that, because values are assessed through self-report measures, values are subject to social desirability. This social desirability occurs because individuals want to present themselves in a positive manner (Fisher & Katz, 2000). Relatedly, if there is no consequence for responding in certain ways, individuals may respond with insufficient effort.

Other issues that may arise from value assessment could include problems with method of delivery, method of measurement, and the method of ordering value importance. Some values scales assess the extent to which each value is important in a Likert format which frequently leads to missing information about the order of values. Other scales generate importance based ordinal lists of values, but do not provide information about the extent to which one value is more important than another. As Ovadia (2004) stated, both rating and ranking systems provide incomplete explanations of value importance.

Another noticeable problem is that previous values scales have typically created their own value taxonomy (e.g. Rokeach, 1973; Rounds, Henly, Dawis, Lofquist, & Weiss, 1981; Schwartz, 1992). Because of this, there is no standard or combined listing of values that can be used for values assessment. Some of these taxonomies list multiple values that are conceptually similar.

Other taxonomies are missing values that may be conceptually different. In some cases, values taxonomies suffer from both flaws. Inconsistencies in these taxonomies make accurate values assessment difficult because no taxonomy represents the full range of possible values. Some individuals may argue that values taxonomies should be created based on situational constraints. However, the major problem with picking from the existing taxonomies is that researchers/practitioners are never looking at a complete list of values, and, therefore, can never be sure that they are including all values relevant to their needs. A more complete taxonomy will allow researchers and practitioners to view all existing values simultaneously allowing for a more adequate taxonomy for their situation.

As discussed above, values assessments are subject to inaccurate assessment due to social desirability. Assessments are typically flawed or offer incomplete explanations of value importance. Values taxonomies are incomplete and, at times, redundant. Current values scales that do have minimal issues are generally long because multiple techniques are required to assess both order and importance. Because of these issues, values assessment is in need of a change. Thus, a new method for value evaluation and new taxonomy are necessary.

This paper has a dual focus. The first goal of this paper is to propose and test a new method of values assessment that addresses the most problematic limitations of earlier methods. Like some of the previous methods, this new method will combine ordinal and Likert measurement of values. However, this measurement technique will take less time to complete and, unlike previous techniques, this method will combine responses across ordinal and Likert measurements. The second goal of this paper is to create a new, universal taxonomy of values that collectively summarizes these existing values taxonomies. In the next few sections, values will be defined, the role of values in Industrial and Organizational Psychology will be explained, some of the major

taxonomies of values will be mentioned, and several of the most used values scales (usually based on taxonomies) will be discussed. The remainder of the paper will follow the process for scale creation presented in Hinkin (1998) to create a new values scale and complete taxonomy.

What Are Values?

Personal values typically refer to higher order goals similar to needs that result from our interaction with the world, and are constructs that determine what a person thinks is important in life, work, or culture (Locke, 1991; Robinson & Betz, 2008). These values are, in many ways, closely related to goals and motivation. Latham and Pinder (2005) suggested that values are a precursor for the formation of goals. In his motivation sequence model, Locke (1991) suggested that values are inspired by needs and lead to goals, intentions, performance, rewards, and satisfaction. Because values can be both an individual and collective construct, personal values may also influence group behaviors such as group performance or group norms setting (Huang et al., 2012). Values are intertwined with a variety of terms including needs, motives, goals, and preferences. In discussion of the motivation sequence, Locke (1991) stated that needs are the driving force behind value formation as needs provide information about what is required for survival and well-being. Locke (1991) also stated that goals and intentions are specific, often behavioral adaptations of values. A person who needs to fulfill their basic drive for belongingness may place an emphasis on values that relate to relationship formation such as honesty or friendship. The fact that the person values honesty and friendship may lead to an individual to perform behaviors and set specific expectations for themselves in order to promote honesty and find friendship. Motives and preferences are useful in making connections with values. While values explain what a person finds important, motives explain why a person finds certain issues important. Preferences are a hierarchy or order to which a person finds certain values important. Therefore,

values can be thought of as a central factor that explains how our drives translate into behavior (Locke, 1991).

In order to better understand the different types of values and the different methods of assessing them, it is important to understand what the causes and effects of values are. Values have been associated with a variety of antecedents and outcomes. Values may be predictive of motivation as certain values, such as power, have been associated with anticipated work weeks per year (Lips & Lawson, 2009). Values are sometimes used in the assessment of person-organization fit. Chatman (1991) found a relationship between value based person-organization fit and a variety of outcomes including confidence, job related endurance, job satisfaction, turnover, and intent to leave. Values in general (as opposed to value fit) have also been related to job satisfaction and turnover (George & Jones, 1996; McNeely & Meglino, 1994) Related to the construct of fit with the organization, other research has examined congruence of values. Values have also been related to organizational citizenship behaviors, counterproductive work behaviors, and justice orientation (Holtz & Harold, 2013; McNeely & Meglino, 1994). Meglino, Ravlin, and Adkins (1989) found that congruence of values (or similarity between organizational and personal values) predicted job satisfaction and organizational commitment. Finegan (2000) found similar results as perception of organizational values predicted affective, normative, and continuance commitment. Values congruence has also been used to predict leadership effectiveness. Brown and Trevino (2009) found that congruence on certain values predicted socialized charismatic leadership.

Assessment of Values

There are several ways that values can be assessed. Some of the more commonly used techniques include ordinal assessment and Likert assessment. However, psychometrics research has generated a variety of options that could be potentially useful for values assessment.

Psychometrics research has identified a few distinctions that separate different scaling techniques. First, there are different levels of measurement (Allen & Yen, 1979). These include nominal (categorical), ordinal (rank ordered), interval (rank ordered with non-arbitrary values assigned), and ratio (interval data with a non-arbitrary zero). Nunnally (1967) also suggested that scales can also either be relative (compares items to each other) or absolute (compares an item to a standard).

Relative measures have been frequently used in values assessment. The most basic form of relative measure that has been used in values research is a rank ordered measure, where individuals rank personal values from most important to least important. One of the benefits to rank order measures is that other measures of personal values may not give complete ordinal information. For instance, Likert measures (described in more detail below) allow for values to be rated as equally important with each other. Therefore, it is not always possible to tell which values are more important than others in Likert measures. Rank order measures address this issue. In addition, social desirability may be less of a problem with rank order measures as participants are forced to make decisions about which values are more important than others. However, such measures are not without problems. First, there is no official importance score for each value. Therefore, it is difficult to determine how much more important one value is compared to another. If researchers or practitioners are trying to determine compatibility of values, this ordinal method may not yield enough information. Additionally, because the method asks for comparison of all personal values to each other at once, this problem may be difficult for participants to complete with larger lists of personal values. Other relative techniques may address some of these issues. Paired comparison techniques generate very similar information to rank order techniques, but require participants to compare items 2 at a time (Allen & Yen, 1979; Nunnally, 1967). However, there are drawbacks to this method as well. Like rank order scaling, information about extent of importance is not present

in paired comparison scaling. Furthermore, this technique may take quite a bit longer as participants are forced to compare every item to every other item. A final relative technique, Coombs' unfolding technique, approaches rank order using a visual scale (Allen & Yen, 1979). However, this technique suffers from the same limitation that the other relative techniques suffer from. There is limited information about how important items are in comparison to each other.

Other scales follow more of an absolute rating approach, such that each item is compared to a standard. In this case, the measure indicates the extent to which a value is important. Some traditional absolute scaling techniques are inappropriate for values assessment. One such example is Guttman scaling. Guttman scaling presents individuals with rank ordered. Individuals select the statement that describes their position best, with the understanding that endorsing that statement also suggests endorsement of all of the statements of lesser value (Allen & Yen, 1979; Nunnally, 1967). This could potentially be used in values assessment where individuals complete a Guttman style scale for each personal value. However, this would be very exhaustive and time intensive as participants would be forced to read several items for each personal value. Because of the limitations to Guttman scaling, a more commonly used absolute technique is Likert scaling. The Likert method gives the researcher information about how important each individual value is to an individual. Unfortunately, due to the nature of normative measurement, individuals can theoretically rate all values as very important. Because of this, the Likert method is prone to social desirability and may be problematic for researchers/practitioners because a participant may rate unimportant values as extremely important even if they are not truly important to the person. Reynolds and Jolly (1980) found that Likert measures of values tend to show lower reliability than rank ordering scales. Additionally, because this method is usually delivered in 5 or 7 point Likert scales, many values may be assigned the same value making it difficult to determine which values

are most/least important. In other words, the data will give researchers a measure of value importance, but may not provide enough information to create an ordinal list of values based on importance. A final absolute technique that could be used in values assessment is Stapel's scaling. Though traditionally more common in marketing research, Stapel's scaling could potentially be useful in values assessment. Stapel's scales are scales that allow something to either be rated positively or negatively that can also be rated varying degrees of positive or negative (Crespi, 1961). For example, in personal values research, an individual would have the opportunity to either rate a value as important or not important while also indicating the extent to which that value is either important or not important. The potential added benefit of this approach is that it gives participants a way to clearly distinguish what is important from what is unimportant. However, it still suffers from many of the same major limitations as Likert scales. Participants may respond in socially desirable ways, and the scale may not yield enough information to truly determine rank order.

A third and final approach to the assessment of workplace values is to use a method that combines relative and absolute measurement. Using Super's work values taxonomy, Leuty (2013) suggested that both methods should be delivered separately (i.e. delivered in a Likert format followed by an ordinal ranking). Batson, Engel, and Fridell (1999) adopted a similar method where a Rokeach's card sorting task was combined with a Likert format scale. Another format option ignores values that are neither the most nor the least important. Rather than examining all values, the method developed by Lee, Soutar, and Louviere (2008) only focuses on the most and least important values. While these measures typically address many of these issues, they require significantly more time to complete and are essentially assessing the same values with two different scales, making them impractical and problematic in situations where

participants/applicants have many other questionnaires to complete. While previous combined measure techniques address most of the issues of current assessments, they take a lot of time to complete because participants are essentially completing multiple scales. One combined technique that has been used previously is the forced distribution technique, in which participants complete a chart that forces their personal values into a normal distribution. This technique makes it very easy for researchers or practitioners to identify which values are important versus not important. This technique also provides some information on rank order as the most important and least important values are identified. However, forced distribution techniques have two problems. First, there is an underlying assumption that personal values are normally distributed, which may differ across individuals. Second, you do not have information about order of importance toward values in the middle of the distribution. A final potential method of assessment that generates both pieces of information is to use an ipsative measurement. Ipsative scales require responses for multiple items to sum to a certain numerical value. In the case of a work values scale, an ipsative measure may initially seem like a promising answer to some of the problems with current scales. If values are assessed on a points system where participants are given a certain number of points to assign to all of their values, information about order and importance can be obtained by examining how many points are assigned to each value. Because the participants have a set number of points to assign to all values, they cannot simply apply the highest number of points possible to all values which limits the likelihood of social desirability. However, research on this ipsative measures reveals methodological flaws. Meade (2004) reviews many of the arguments against the use of such measures. Some of these arguments include the fact that internal validity is compromised in spite of the fact that social desirability is addressed, the inability to properly test for reliability,

violation of assumptions, and problems comparing across individuals. In other words, the ipsative measure creates just as many problems as it solves.

Collectively, relative or ordinal measures collect useful information about which personal values are more important than others, but do not give you information about the extent to which each value is important. Absolute measures, most notably Likert measures, yield this missing information, but fail to deliver adequate information about rank order of values. Furthermore, Likert measures are prone to issues such as social desirability. The most promising approaches attempt to gather both pieces of information, yet no approach to date has successfully combined both pieces of information into a single, practical scale.

Categorization of Values

Before discussing new alternatives for addressing the scaling issues, an overview of existing values assessments will be provided, first starting with an overview of different kinds of personal values. Previous research on values also suggests that values come in different forms. One form of values that have been investigated is cultural values. Cultural values refer to overarching values that are held by the majority of a specific ethnic culture or country. Unlike the other forms of values that will be discussed in the subsequent paragraphs, cultural values are investigated at the macro level of analysis due to the fact that cultural values are a collective form of values (Fischer & Poortinga, 2012). Some researchers have examined the aggregation of personal value information to the cultural level as a method for assessing cultural values (Fischer & Poortinga, 2012; Vauclair, Hanke, Fischer, & Fontaine, 2011). Additional research has examined the effects of cultural value change on personal values, and found a relationship between the two constructs (Lonnqvist, Jasinskaja-Lahti, & Verkasalo, 2011). While this research has shown that values scales are typically useful at both levels of analysis, further discussion of these

scales and their roles in multilevel research is beyond the scope of this paper. Therefore, further discussion of cultural values will be omitted.

Another form of values examined by researchers is general personal values. General personal values refer to values that are inspired by overall needs in life and inspire overarching life goals. One of the earliest personal value taxonomies was developed by Rokeach in 1973. Rokeach's taxonomy identified 18 (divided into 2 larger categories) allegedly distinctive personal values that he believed were the most commonly held by individuals. Some of these values were comfort, security, peace, self-respect, courage, honesty, and imagination. While his scale contained 18 values, he argued that there were likely many more values that were, on average, much less important to individuals. While Rokeach's scale was influential in the personal values literature, and is one of the most cited and used values scales, the scale and taxonomy have been met with criticism. For example, Gibbons and Walker (1993) argued that several of his value dimensions (such as salvation and religion) were too similar to be considered distinctive. Also, these dimensions, at times, are too vague and can be interpreted in different ways (Gibbons & Walker, 1993). Other research has argued that, even though the scale has a large number of values, many important value constructs are missing from the scale (Braithwaite & Law, 1985). Some researchers have been less concerned with the 18 major values identified by Rokeach, but have criticized his 2 major categories (Heath & Fogel, 1978). A final criticism of this scale concerns the method of delivery. Rokeach's scale is typically delivered using the ordinal method discussed above, by asking participants to put the values in order from most important to least important. While this allows for identification of the most important value(s), it has clear limitations. Most notably, this method of assessment makes values an absolute ordinal variable which is impractical for researchers and less useful in statistical analysis (Johnston, 1995).

Another influential taxonomy was developed by Schwartz (1992). This taxonomy and scale have been used in a variety of subfields of psychology including I/O (Chernyshenko et al., 2010). Schwartz's taxonomy is based on a less complicated set of values than Rokeach's taxonomy. Schwartz's taxonomy encompasses 10 personal values (achievement, benevolence, conformity, hedonism, power, security, self-direction, stimulation, tradition, and universalism) categories divided into four dimensions (Openness to change, Self-transcendence, Self-enhancement, and Conservation). Compared to the Rokeach Value Survey, the Schwartz scale has received much less criticism. One criticism of this scale is that, while its dimensions may be accurate, some value categories such as religiosity may be missing from the scale (Lindeman & Verkasalo, 2005). A second criticism for this scale concerns its method of delivery (Lee & Soutar, 2009). The items for the Schwartz scale are delivered in a Likert method in which participants are told to rate the extent to which the value is important in their lives.

The third type of values taxonomy measures values that are more relevant in work or organizational settings. This type of values taxonomy can be thought of as a special case of the personal values taxonomies discussed in the preceding paragraph. While many of these values may overlap with personal values, these scales were designed to approach the values from an organizational context. For example, an early work values scale was created by studying the personal values of managers in the U.S. (England, 1967). One such scale is the Minnesota Importance Questionnaire (MIQ; Rounds et al., 1981). This scale is comprised of 20 work or job based values such as co-worker altruism, responsibility, creativity, advancement, and recognition. Traditionally, the MIQ has been administered and scored in a method similar to the Rokeach Value Survey. Like Rokeach's scale, results obtained from the MIQ are limited by the scoreless order of the values.

Another major work values scale is the Organizational Culture Profile (OCP; Cable & Judge, 1997; O'Reilly, Chatman, & Caldwell, 1991). The OCP was created primarily to test person-organization fit, but emphases the use of work values in this assessment (Cable & Judge, 1997). With OCP, values order is assessed in methods similar to the MIQ and Rokeach's scale. Participants are told to sort a large number (either 40 or 54 depending on the version) of values into groupings from most to least important. The benefit of this scale is that it adds additional values and value dimensions that are not present in other scales. Unfortunately, it has the same basic flaw as the MIQ and Rokeach's scale because the data collected are ordinal in nature.

Other work values scales have attempted to use multiple option forced choice selection techniques to assess values. One example of this is the Comparative Emphasis Scale (CES; Ravlin & Meglino, 1987). The CES assesses values by having participants pick between dichotomous sets of goals that are associated with specific types of values. While this method may remove some social desirability problems from value assessment, there is at least one issue with the validity of such a scale. Even though goals are frequently caused by values, other factors such as motives can influence these results (Locke, 1991). In other words, asking questions about goals may not be a completely valid way of measuring values. Another criticism of this taxonomy is that the number of values identified is limited. For example, the CES only uses six values (achievement, working hard, concern for others, helping others, fairness, and honesty) which omits a large number of values.

Some work value scales have concentrated on career values rather than work values. Such scales are designed to aid in career orientation and career choice, and address both personal work goals and values. Scales such as O*NET's career values inventory were created to aid in exploration for potential future careers (McCloy, Medsker, Wall, Rivkin, & Lewis, 1999). The

O*NET career values inventory contains 36 forced choice items where the individual has to decide which of the two items is most important to them. Another career values inventory was created by Knowdell (1982). The Career Values Card Sort Task allows individuals to sort values into different categories such as always valued or never valued. While this task may seem somewhat novel, it is essentially a more interactive Likert scale.

Another potentially beneficial future direction for values research is to take the role of context into consideration when measuring values. For example, Krumm, Grube, and Hertel (2013) proposed that existing work value measures do not take the role of age into account and created the Munster work value measure to address this concern. However, aside from the work of Krumm et al. (2013), not much research has examined demographic or environmental context (aside from macro level cultural perspectives) on values.

As suggested in the previous sections, both personal and work values scales are limited representations of values. Values are influential variables in organizational contexts. For example, values can determine the extent to which individuals are motivated to work hard for their organization, how well people work and get along with their co-workers, how a business or company focuses their work requirements, what kind of climate/culture exists in a company or business, and whether a person fits into that climate or culture (Chernyshenko et al., 2010; Latham & Pinder, 2005; Locke, 1991). Because of newly emerging literature supporting the importance of values (Borg et al., 2011; Huang et al, 2012; Locke, 1991; Schein; Young et al., 2012, 1990), better assessment techniques are necessary in the measurement of values. In the remainder of this paper, I will present the framework for a new work values scale, test the validity of that framework, and suggest ways in which this values framework may be generalized to other contexts such as personal

or cultural values. While this framework does not address all of the issues associated with values assessment, the most problematic issues in values assessment are addressed.

CHAPTER 2 "NEW SCALE"

Essential Components of New Scale

As stated in the previous paragraphs, many of the existing values scales are useful in some respects. The Rokeach Value Survey, the MIQ, and the OCP all allow participants to put values in an order. The Schwartz Value Survey allows for participants to rate the extent that they find values important. All of these scales (as well as the CES) give a list of a variety of values. The values used for the new scale will be comprised of these values (see next section).

However, these scales also have limitations. None of these scales allow for simultaneous assessment of order and importance ratings. For example, if a researcher wants to examine value congruence, they will need to compare value scales for two employees (such as a manager and subordinate). If only order is assessed, the researcher will have no numerical quantity to identify how important the top values are. For example, the manager and subordinate may have trust, achievement, and self-direction as their top three values. However, the manager may only think that their top two are extremely important while the subordinate may think that all three are of equal importance. If importance is assessed with a 5 or 7 point Likert scale, this issue is addressed assuming the number of values being assessed is relatively small. However, with a large number of values, multiple values are likely to be listed as extremely important (e.g. a rating of 7). If this is the case, there is no way to determine which of these values is more important. The primary goal of this new scale is to address this limitation by creating a method of value assessment that assesses both order and importance in a way that can be combined mathematically.

The new scale will be delivered in a manner similar to that of Leuty (2013) in that both an ordinal and Likert element will be used. Prior to using the scale, it will be explained that the results

will take into account the diversity of their values, making it less likely that individuals will respond in a socially desirable manner. Individuals will start with a Likert format scale. Individuals will be asked to rate the extent to which they think each value is important on a scale ranging from 1 (*very unimportant*) to 7 (*very important*). The scale development literature suggests that a 5 or 7 point Likert scale should be used as scale with less than five options does not provide enough potential variability in responding while scales with more than seven options force individuals to pick from equally attractive answers (Alwin & Krosnick, 1991; Lehmann & Hulbert, 1972; Miller, 1956). After completing the Likert format of the scale, individual will rank order the values within each Likert level. For example, if an individual rated five values as a 7, they would decide which of the five was the most important, which was the second most important, etc.

To analyze these data, the within Likert level values (i.e. all the values that were listed as being equally important in the Likert step) will be coded starting with zero such that higher numerical values indicate lower importance. Each numerical value will be multiplied by .01 and subtracted from the original Likert value. In other words, if there were three values that were assigned a Likert score of 7, their final scores would be 7 for the most important value, 6.99 for the next most important value, and 6.98 for the final value. This method will yield clumps of ordered values.

Through this method, the extent question (i.e. the extent to which each value is important) is answered by the clumps of values that fall close to each other. The ordinal question is answered by examining the final importance values individually.

The Value Taxonomy

In the last few sections, many methods of value assessment were discussed. Some of these techniques were accompanied by new values taxonomies. Furthermore, other values taxonomies

were created that drew on some of these methods described above. As a result of this, there are several taxonomies of values in existence. In addition to a new method of value assessment, additional research on value taxonomy should be conducted. Taxonomies vary significantly. Some taxonomies contain values that appear to be redundant. For example, logic and intelligence, which both appear in the Rokeach taxonomy, could potentially be considered the very similar values. In existing work taxonomies, not being constrained by rules and being rule oriented, which appear in the Organizational Culture Profile, may be considered the same value measured in reverse. Other taxonomies are missing values that appear on other lists. Many taxonomies of values approach a complete list, but are missing a key term that appears in another values set. For example, the Rokeach taxonomy acknowledges a religious value while the Schwartz taxonomy does not include any value related to religion. Many of the work value inventories, such as the MIQ and the Organizational Culture Profile, only include values directly relevant to work. However, knowledge of other values such as logic or intelligence may be useful when assessing job, organization, or team fit as well as other potential work related outcomes. Therefore, some taxonomies do not cover a comprehensive, diverse set of values, while others include more than one value with nearly identical meanings. In other words, the values overlap with each other. It is not that the current taxonomies are not necessarily poor. They are just incomplete.

There are a variety of reasons why previous taxonomies of values have been created. Some of these values taxonomies were created because many of the existing work values taxonomies show low reliability and validity (Robinson & Betz, 2008). Others have argued that they were fulfilling a need for something more specific by creating a new taxonomy. For example, the Organizational Culture Profile was created to measure values believed to be influential in within organizational culture (O'Reilly, Chatman, & Caldwell, 1991). In the context of work values, the

latter point may take on two forms. First, through the arguments for more specific taxonomies, contextual taxonomies such as work value taxonomies have been created. Second, the argument could be made that more specific taxonomies will allow for researchers and practitioners to select a taxonomy that is ideal for their situation. However, both of these arguments may be somewhat inaccurate. First, the creation of mores specific taxonomies such as work values has allowed for values specific to work contexts. However, relevant non-work related personal values that may be influential in organizational fit or job fit are likely missing. To address the second argument, it would seem that having more taxonomies would allow for more customization and contextual consideration. However, researchers and practitioners are forced to sort through all of the existing taxonomies and pick the one that best represents what they want. By having a more complete taxonomy, these individuals will have a complete list available to them that can then be adjusted to fit their contextual needs. As they will have a complete list of values, there is less of a chance that they will leave off something that is potentially useful or relevant.

As discussed in previous sections, it is important to have a complete taxonomy so that individuals have a complete taxonomy of values from which they can create their own list that is specific to their needs. To address this issue, a new taxonomy is needed that draws on existing taxonomies.

Benefits and Uses of New Scale

In order to further explain why a new values scale is important and how this particular values scale is useful, the following sections are provided. Practical and theoretical uses for this particular scale will be provided. While some previous methods of assessment may have some of these benefits (e.g. ordinal assessment to some extent decreases social desirability), previous assessment techniques are limited in that they do not have all of the benefits that this new method

provides. The end goal of this section is to point out that this scale is useful in a large number of contexts and addresses many of the concerns of existing assessment methods. The uses that will be discussed in the following sections will include discussion of value importance, value profiling, value congruence, and variance of values, as well as potential uses for the measurement technique outside of values research.

Value importance and order assessed in one measure.

Value importance can be assessed by examining the numerical values created by the scale. Higher numerical values indicate that the work value is of high importance, while lower numerical values indicate that the work value is of low importance. In addition, for each person, every personal value would show a different numerical value, allowing the interpreter to also determine rank order of personal values.

Decreased cognitive load for rank ordering.

The traditional rank order approach of personal values scales requires an individual compare many personal values to each other. Because the individual is forced to think about how a personal value fits within a large value taxonomy in terms of importance, this perhaps could lead to mental fatigue and increased cognitive load. Because the rank ordering in the new measurement technique is done within each Likert level instead of across all personal values simultaneously, this could decrease cognitive load (assuming some degree of variability across the Likert levels).

Value profile.

Another use for this scale is the creation of value profiles. Based on combinations of value importance levels similar to those proposed in the previous section (i.e. conformity and tradition are extremely important while social hierarchy is only somewhat important), a system of profiles could be created to determine what a given combination of values translates to and what should be

taken away from the combined value importance levels. While creation of value profiles is beyond the scope of this project, future research may use value clumps to create value profiles.

Measuring Value Congruence

This scale may also be used to measure value congruence. A recommended way for assessing value congruence with this scale involves polynomial regression. Edwards (1993) suggested that the use of difference scores in congruence assessment may lead to inaccurate results. Through use of polynomial regression, researchers are able to look at the extent to which there is agreement and discrepancy and how that relates to outcomes (Shanock, Baran, Gentry, Pattison, & Heggestad, 2010). Though this method can theoretically be done with any numerical values scale, inaccurate assessment is still possible to due the problems discussed in the previous sections. For more information on how to use polynomial regression in combination with this scale, see Shanock et al. (2010).

Variance of values.

Another practical use to this scale may be to measure the variance of values. While it may be most useful to consider the rank order and score of the values, it may also be useful to determine how dispersed the values are. Someone with high value variance would find only a few values extremely important. Someone with extremely low value variance would see all values as equally important. For example, this could be useful in contexts such as teamwork where you may need to place groups of employees into specific teams. Woehr, Arciniega, and Poling (2013) suggested that excessive diversity in values can be problematic in team effectiveness. Following this idea, knowledge of each individual's important values and the variance of those values would enable managers to create teams more effectively. Individuals with high value variance may fit into teams with different values rather poorly. Individuals with low value variance see most values as equally

important, and, therefore, may fit into any team. A manager would want to place high value variance employees first so that their values fit the job that a specific team will be working on. Low value variance employees may be more variable in their fit for a particular team or task. Therefore, a manager could place them last. The easiest way to determine the spread of values is to use a standard deviation or variance of value scores for an individual. Some researchers (e.g. Meade & Craig, 2012), have suggested that this method may simply identify insufficient effort responding. To some extent, this may be true. Individuals who are not fully considering each value may be more inclined to rank them equally important. However, some of these individuals may legitimately find most values equally important. Moreover, if steps (such as the method proposed earlier in this paper) are taken to reduce false responding, variance of values should provide an adequate estimate for how dispersed individuals' values sets are. With this method of assessment, individuals with high value variance will have higher variance in importance scores.

Methodological Adaptations

Though the new method of assessment was designed for workplace values assessment, it could be useful in other contexts. For instance, this new method could be useful in career assessments, where individuals are trying to determine what field or jobs they are interested in pursuing. This may also be useful in personnel contexts such as selection. In selection or promotion, this may be useful as an alternative to cutoffs. Ordered rankings of applicants may be generated while also getting clear information about who is acceptable or unacceptable for a job. Similarly, this could apply to performance appraisal contexts. Wagner and Goffin (1997) argued that relative (or comparative) measures of performance yield more accurate results than absolute (non-comparative) measures of performance. This method may be used to rank order and judge employees against established standards. (The results would essentially yield a behaviorally

anchored rating scale with rank ordered employees.) There may be additional contexts inside and outside of I/O psychology that this method may also be useful.

CHAPTER 3 "STUDY ONE"

Purpose

Before a scale can be developed, a taxonomy of values needed to be established. The goal of the first study was to create this taxonomy. Using a small sample of students, the initial set of values was created through focus group sessions.

Method

Participants

This study consisted of 16 graduate students from a large, Midwestern university. Though the participants were mostly from the US, there was variation in gender (56.25% female) and some variation in race (75% Caucasian). There was also substantial variation in the research interests of the graduate students, which likely equated to different levels of previous knowledge about personal values. Roughly 45% had a background in clinical psychology, 45% had a background in industrial/organizational psychology, and 10% had a background in experimental psychology.

Procedure

In this study, participants worked as a group to create a proposed taxonomy of values. Participants were provided with 161values that were taken from the Rokeach Value Scale, the Schwartz Value Scale, England's Taxonomy, Knowdell's card sorting task, the Organizational Culture Profile, the Minnesota Importance Questionnaire, Super's Work Value's Inventory-Revised, and the Comparative Emphasis Scale.(For a complete list of these values, see Appendix A.) Participants were told that the goal of this study was to reduce the number of values listed to avoid redundancy. The participants grouped the 161 values into overarching value categories.

This task was completed using a card sort. First, the task was done individually to allow for everyone to come up with their own list. Then, the participants worked in groups of 3-4 to find some commonalities among their lists. Finally, the entire group worked together to come up with a consensus list. Participants sorted cards containing individual values into overarching value category piles. Participants were told that an "other" bucket can be generated, but should only be used if they believe that no other terms share common meaning with the term in question. During the process, a researcher was in the room to monitor the extent to which there is agreement in the value combinations. If the participants failed to come to a consensus, the researcher called for a vote. Assuming at least seventy-five percent agree with the majority, the process continued with the next card. If there was not at least seventy five percent agreement, the discussion continued on the value term in question. Following the card sort, participants collectively provided a name and definition for each value category.

Results/Discussion

The first study was qualitative in nature. Because of this, no formal analysis was conducted. For any value combinations that did not have perfect agreement, percent agreement was calculated. The cutoff of 75 percent was applied such that if at least 75 percent of the individuals involved of the study agreed, the value combination was used. This cutoff of 75 percent was recommended by Greenberg (1986) as a common cutoff for similar analyses. In the present study, no instances of substantial disagreement emerged. When disagreement did occur, participants were eventually able to come to agreement. The final group discussion took roughly an hour and a half.

The group identified a list of 14 value categories. The following values were identified as non-redundant: group work, independence, creativity, status, achievement, challenge, well-being, stability/risk, quality interpersonal relations, knowledge/ability, equity/altruism, tradition,

organizational focus, and recognition/feedback. (A listing of these values, the definitions, and the examples of the words that were sorted into each category can be found in Appendix B.)While this study was useful in identifying potential value constructs, the results of this study are limited by the qualitative methods and small sample size that were used. Subsequent studies in this paper aim to validate this taxonomy and validate the proposed method of delivery for this taxonomy.

CHAPTER 4 "STUDY TWO"

Purpose

Study two builds off of study one by testing the validity of the proposed taxonomy that was established in study 1. This study used a larger sample and incorporated quantitative analysis.

Method

Participants

As previously stated, 75 percent agreement is recommended as a cutoff for studies that involve percent agreement (Greenberg, 1986). Gwet (2012) suggests that a minimum sample size of 16 should be used to obtain 75 percent agreement. However, while 75 percent agreement is all that is required, higher agreement would be preferred. Because of this, a more stringent level of 90 percent agreement was used to determine sample size. The recommended sample size for this study will be approximately 100. However, the second part of this study will incorporate factor analysis. It is recommended that 2 participants should be used for every item. Moreover, to account for the possibility of insufficient effort, an additional 100 participants will participate in this study.

Participants were 323 undergraduates from a large Midwestern university. However, of the 323 participants, 28 did not complete the entire study. These participants were removed from the sample. Furthermore, many participants showed abnormally short response times to the survey. A measure of time elapsed during study completion was calculated from the start and finish times. One participant was removed because the response time was approximately 24 days long. Even

after this participant was removed, the measure showed a skew of 6.63 (SE=0.14) which is indicative of extreme skew. Therefore, the measure was transformed using the 1/X function as discussed in Tabachnick & Fidell (2013). The resulting transformed measure was standardized. An additional 21 participants were removed for having response times of less than 12 minutes (i.e. greater than 2 standard deviations below the mean). The final sample consisted of 273 participants.

Procedure

Participants were given the opportunity to sort the same set of values into value categories created based on the results of study 1. Participants were presented with the list of 161 values used in study 1 and sorted these values into the overarching value categories created in study 1. Participants had the category definitions available, and were told that there is no limit as to how many of the terms can be sorted into each category. To reduce the likelihood of order effects, the order in which the value categories will be presented was randomized.

Following the value sort, participants completed a brief quiz where they were asked to match the value category label to the definition. After completing the quiz, participants were presented with the same list of values, and rated the extent to which each value was personally important to them on a seven point Likert scale. These data were used to factor analyze the values taxonomy. Though this method has been pointed out as potentially problematic, the second study was not conducted to test the new method. The second study was to assess the validity of the taxonomy. Moreover, with 161 values, using the proposed method would likely have led to participant exhaustion and difficulty organizing the values in stage 2.

Results

The results of the first part of study two were analyzed through an examination of agreement across participants similar to the method proposed in Greenberg (1986). Percent

agreement was calculated by determining a percentage of the number of values correctly sorted into the proposed categories. Support for the taxonomy would be indicated by 75 percent of the values being sorted correctly, indicating high agreement with the proposed taxonomy.

First, the total number of values were examined for adequate agreement using the following formula: Total number of values correctly sorted/total number of values sorted. The total number of values sorted correctly was 14161 out of 42660. This yielded 33.20 percent agreement, which is well below the 75 percent cutoff. Percent agreement was also calculated at the value level using the following formula for each of the 161 values: total number sorted into correct bucket/total number sorted. Of the 161 values, only 1 value was correctly sorted into the correct bucket more than 75 percent of the time. Finally, percent agreement was assessed at the bucket level. In a formula similar to the ones above, total agreement was calculated within each bucket using the following formula: total number of values correctly sorted within a bucket/total number of values sorted within a bucket. The total number of buckets that reached 75 percent within bucket agreement was 0 out of 14.

While these analyses failed to show any evidence of agreement, there is some evidence that the data were trending in the right direction. The correct value bucket was the most common response in 113 of 161 values or 70.19 percent of the time. Furthermore, results of the value bucket definition quiz indicated that insufficient effort may still be an issue. Therefore, these analyses were completed with a smaller sample of 142 participants who scored over 70 percent on the value bucket definition quiz.

First, the total number of values were again examined for adequate agreement using the following formula: Total number of values correctly sorted/total number of values sorted. The total number of values sorted correctly was 9438 out of 22565. This yielded 41.83 percent agreement,

which is still well below the 75 percent cutoff. For percent agreement at the value level, the following formula was again used: total number sorted into correct bucket/total number sorted. Of the 161 values, only 16 values were correctly sorted into the correct bucket more than 75 percent of the time, resulting in agreement for only 9.94% of values. Finally, percent agreement was assessed at the bucket level using the following formula: total number of values correctly sorted within a bucket/total number of values sorted within a bucket. While 2 buckets approached the 75 percent agreement mark (group work at 74.38% and creativity at 74.21%), the total number of buckets that exceeded 75 percent within bucket agreement was again 0 out of 14. Therefore, even with the sample reduced to higher effort responders, the results failed to demonstrate adequate agreement.

For the second part of this study, an exploratory factor analysis (EFA) was run. An exploratory factor analysis was run using principle components extraction and varimax rotation. The number of factors was set at 14, which corresponds to the number of value buckets generated in study 1. The resulting solution arrived at 14 factors in 23 iterations. However, the Eigenvalues in the Total Variance Explained matrix revealed that 14 factors only explained 58.72% of the variance. This matrix also indicates that the ideal structure would be composed of approximately 38 value buckets rather than the proposed 14. Furthermore, an examination of the rotated component matrix revealed factor loadings that were generally low and inconsistent with the proposed taxonomy from study 1. Additionally, no discernable themes emerged from the factors in the factor solution. The results of the EFA provided no support for the proposed value taxonomy.

Discussion

Collectively, studies one and two were designed to create an exhaustive but non-repetitive values taxonomy. In study one, a small group of graduate students generated a list of proposed

value categories, and created definitions to describe those categories. The goal of study two was to test whether the proposed taxonomy was valid.

This question was first examined by determining whether a larger sample of undergraduate students could resort the longer list of 161 values into their proposed value categories. Though values were often sorted into the right category by the majority, agreement failed to approach the recommended 75% mark proposed by Greenberg (1986) in any form. Therefore, the first method failed to validate the taxonomy generated in study one.

This question was also examined by an exploratory factor analysis using the same sample of undergraduate students. The results of the EFA generated a taxonomy that differed greatly from the taxonomy created in study one. The resulting factors made no conceptual sense, and had no clear themes. Furthermore, results indicated that the number of adequate value categories may be much higher than what was generated in study one. This second method also failed to validate the taxonomy generated in study one.

There are many explanations for why the taxonomy may have not been validated by either method in study two. First, the instructions for the sort task may not have been clear enough for the participants to understand what they were supposed to do. Evidence for this may be found in the fact that some terms that should have been easily sorted still did not register acceptable levels of agreement (e.g. only 68% of participants correctly sorted "achievement" into the "achievement" bucket). Second, for the EFA component of the study, participants simply rated the importance of each value. However, this is the exact same method that was criticized earlier in this paper. It is possible that the EFA failed to generate clear results because of the problems with importance measures that were discussed in previous sections of this paper. There were also several problems that may have influenced the results for both parts of this study. Participants were required to sort

a large number of values into categories, and then were subsequently asked to rate the importance of this same list of values. Because this study was so long for participants, it is possible that participant fatigue and insufficient effort responding could have occurred, especially during the second task. Finally, it is possible that the sample that was chosen for this study was not ideal for investigating this phenomenon. To do this study effectively, participants needed a strong enough vocabulary to understand what each of the value terms meant, and a nomological network developed enough to make connections between all of the value terms.

There are a few options that could address some of these issues in subsequent research. It would likely help to separate the two tasks into separate studies with separate samples, and to use a sample that has a strong vocabulary and nomological network. An alternative option would be to approach the entire process following the recommendations set by Hinkin (1998) more directly. This process would likely use two forms of factor analysis rather than a value sorting task, such that the first study uses an EFA to examine how the structure of values might look while the second study uses a confirmatory factor analysis (CFA) to determine whether the values factor structure is supported in a subsequent sample.

CHAPTER 5 "STUDY THREE"

Purpose

The overarching goal of the present paper was to create a new work related personal values scale that address many of the limitations of previously created work-related personal values measures. Within this overarching goal were two sub-goals of this paper. The first goal was to create an improved work-related values taxonomy. The second goal was assess a new measurement technique for assessing these values using the taxonomy developed as part of the first goal. The two previous studies attempted to address the former goal by creating and validating a new values taxonomy. However, the second study failed to validate the taxonomy that was

generated in the first study. As a result, the focus of study three shifted. Rather than assessing a completely novel scale of workplace values with a new taxonomy and new measurement technique in this study, study three was adjusted to focus solely on the measurement technique laid out earlier in this paper. Specifically, the final study focuses on providing evidence for the reliability or validity of the measurement technique. As previous research has found relationships between values and a variety of outcomes (discussed in a previous section of this paper), it is expected that the new measurement technique should also be related to these outcomes.

H1: The new value measurement technique shows test-retest reliability.

H2: Value order in the new measurement technique shows similarity to value order in ordinal values scales.

H3: Value importance degree in the new measurement technique shows similarity to value importance degree in other Likert values scales.

H4: The new values measurement technique shows discriminant validity from personality.

H5: The new measurement technique will show face validity.

H6: Values are related to organizational citizenship behaviors, job satisfaction, turnover intentions, organizational commitment, and counterproductive work behaviors as evidence for the criterion related validity of the new values measurement technique.

Method

Participants

A power analysis conducted in GPower suggests that, with an effect size of 0.2, a sample of at least 266 individuals should be used. The number 300 was chosen in order to generate a wider range of variance in values that a smaller sample may not capture. Participants consisted of working adults within the U.S. with a minimum workload of 30 hours a week recruited through

Amazon Mechanical Turk. Initially, 312 participants completed this study. However, 14 participants completed the survey outside of the U.S., and were removed. Additionally, 3 participants were removed for failing to complete more than half of the survey. The final sample consisted of 295 participants. Participants' age averaged 34 years. Of the 295 participants, 172 (58.30%) were male, 238 (80.70%) were Caucasian, and 23 (7.80%) were of Hispanic ethnicity. For the second wave, 165 participants responded to the survey. However, 19 failed to provide adequate information to match wave 1 to wave 2, and were removed from analyses. The final wave 2 sample was 146 participants. Of the 146 participants, 86 (58.90%) were male, 114 (78.60%) were Caucasian, and 18 (12.30%) were of Hispanic ethnicity. The average age of the wave 2 sample was 32.94 years.

Procedure

Participants completed a survey containing multiple values assessments, a personality assessment, a face validity measure, and several work related outcomes measures (that will be used to assess criterion related validity). Originally, participants were going to complete three values assessments: the new values inventory based on studies one and two, the Schwartz Value Inventory and the Organizational Culture Profile.

However, since no validated taxonomy was successfully developed in the previous studies, participants instead completed three assessments of workplace values using one taxonomy. The taxonomy that was used needed to be an established measure of workplace values that is frequently used in research on work related personal values. Because participants were going to be completing the assessment in multiple formats, it also needed to have a relatively small number of items. Based on these criteria, Manhardt's taxonomy was chosen. Participants completed Manhardt's taxonomy in three formats: Likert, Ordinal, and the proposed combined approach. In order to separate the

administration of each values assessment, participants completed other measures in between each of the administrations. Participants completed a face validity scale. A big five personality scale was used for measurement of discriminant validity. Participants also completed measures of organizational citizenship behaviors, job satisfaction, turnover intentions, organizational commitment, and counterproductive work behaviors to assess criterion related validity.

At a later time, participants were prompted to complete the proposed value inventory for a second time in order to assess test-retest reliability. This second administration occurred approximately 2 weeks later. Two weeks was chosen because enough time will have passed between time points that the individual will have forgotten their original responses. However, the administration also occurred soon enough that changes in individuals' personal values should be virtually non-existent.

Measures

Values (extent measure): Manhardt's taxonomy was used again to measure extent of importance. Participants responded to the same 25 values delivered in a Likert format. Participants rated the extent to which they believed that each value is important on a five point Likert scale ranging from 1 (*very unimportant)* to 5 (*very important)*.

Values (ordinal measure): Ordinal ranking of values was also measured using Manhardt's taxonomy. However, in this method, participants rated the 25 values from most important to least important. Values were recoded such that higher numbers indicated higher endorsement of importance.

Values (main scale): Values was assessed using the 25 item work related personal values taxonomy developed by Manhardt (1972). As discussed earlier in this paper, participants rated the extent to which these values are important on a Likert scale ranging from 1 (*very unimportant*) to

7 (*very important*). After completing the Likert format of the scale, individual rank ordered the values within each Likert level from most important to least important. Final importance scores were computed using the method described in chapter 2.

Face Validity: Face validity was assessed using a three item measure that asks the participants whether they believed the proposed scale assessed their values efficiently, whether they believe that all values were adequately represented by the proposed scale, and whether they believe that any two values were similar from the proposed scale were similar. Alpha for this scale was 0.60. However, of the original scale items, one related to the taxonomy while the other two related to the measurement technique. If the taxonomy related item is removed, the scale reliability increases to 0.91. Therefore, the 2 item scale was used instead of the three item scale.

Personality: Personality was measured using a 10 item big five personality measure developed by Rammstedt and John (2007). This scale contains 2 items for each of the big five personality dimensions (openness, conscientiousness, extraversion, agreeableness, and neuroticism). A sample item was "I see myself as someone who is reserved." Alpha for this scale was 0.62 for openness, 0.62 for conscientiousness, 0.76 for extraversion, 0.56 for agreeableness, and 0.81 for neuroticism.

Job Satisfaction: Job satisfaction was measured using a 5 item measure developed by Hackman & Oldham (1975). A sample item was "I feel a great sense of personal satisfaction when I do this job well." Alpha for this scale was 0.90.

Turnover Intentions: Turnover intentions was measured using a 4 item measure developed by Kelloway, Gottlieb, & Barham (1999). A sample item was "I am thinking about leaving this organization." Alpha for this scale was 0.94.

Organizational Commitment: Organizational commitment was measured using 6 items from the affective dimension of the organizational commitment scale created by Meyer, Allen, & Smith (1993). A sample item was "I feel personally attached to my work organization." Alpha for this scale was 0.93.

OCBs: OCBs were measured using 12 items from a measure developed by Van Dyne, Graham, & Diensch (1994).The original measure contained 34 items across three dimensions of loyalty, obedience, and participation. However, due to the length of this study (and the possibility of response burnout), the four highest loading items for each of the three dimensions were used rather than the full scale. A sample item was "I frequently make creative suggestions to coworkers." Alpha for this scale was 0.85.

CWBs: CWBs were measured using a 15 item measure of deviant behavior developed by Aquino, Lewis, & Bradfield (1999). A sample item was "I leave work early without permission." Alpha for this scale was 0.92.

Manhardt's Taxonomy and the face validity scale can be found in Appendix C.

Results

Before examining the hypotheses, descriptive statistics were examined to determine whether data adequately met statistical assumptions. Many of the measures were initially shown to violate normality assumptions due to high skewness. To address this, transformations were conducted based on the recommendations of Tabachnick and Fidell (2013). Measures that showed lower significant skew were transformed using square root or log 10 functions. Measures that showed higher significant skew were transformed using 1/X functions.

After normality was ensured, data were analyzed to determine whether the scale showed sufficient reliability and validity. To assess test-retest reliability, the new scale items from the first

administration were correlated with the new scale items of the second administration. For test-retest reliability, significant correlations should be found between the first administration and the second administration. According to Allen and Yen (1979), standards for adequate test-retest reliability can differ depending on contextual factors such as length of time between administrations. However, 0.70 is often used as an acceptable cut off for reliability (Nunnally, 1978). Pearson's correlations between wave 1 and wave 2 are presented in Table 1. Of the 25 correlations, all 25 were significant, $p<0.05$. However, none of the relationships surpassed the 0.70 cut off. Correlations varied from 0.30 to 0.66, and the average correlation across all values was 0.49. Though all 25 values correlated significantly across the two waves, there was insufficient evidence of test-retest reliability. Therefore, hypothesis 1 was not supported.

In order to assess construct validity of the new measurement technique, it is important to establish that the new measurement technique converges with previous values assessments and diverges from other related but distinct constructs. In the present study, convergent validity was assessed by determining how highly correlated ordinal and Likert measures of values are to the new measure of values. Discriminant validity was assessed by examining the relationships between the new measure of values and personality.

Before examining construct validity of the new measure, the relationships between Likert and ordinal assessments were examined to determine if they converged with each other. Because these two measures are used to assess convergent validity, low correlations between these measures could pose methodological problems for hypotheses 2 and 3. Kendall's Tau correlations were used to examine the strength of relationships between the Likert measure and ordinal measure. Table 2 presents the correlations between each of these measures. Convergent validity is demonstrated if two criteria are met (Campbell & Fiske, 1959; Hinkin, 1998). First, the two

measures must be significantly correlated with each other. Second, the correlations must be relatively high. The relationships between the Likert and ordinal measures were positive and significant, $p < 0.05$. However, correlation strength varied substantially. Correlations varied from 0.23 to 0.49, and the average correlation across all values was 0.34. Because the correlations between the two measures were not very high, the results suggest that only one of the two criteria are met for construct validation. The two measures should not be considered construct valid with each other.

Because of the low correlations between the Likert and ordinal measures, hypotheses 2 and 3 are unlikely to yield similar results. Hypothesis 2 proposed high, significant relationships between the new measure of values and the ordinal measure of values. Kendall's Tau correlations were used to examine the strength of relationships between the new measure and ordinal measure. Table 3 presents the correlations between each of these measures. As discussed above, evidence for convergent validity is demonstrated if high, significant correlations exist between the two measures (Campbell & Fiske, 1959; Hinkin, 1998). As shown in the table, all relationships were positive and significant, $p < 0.05$. However, like the relationships between the Likert and ordinal measures, correlation strength varied substantially. Furthermore, correlations ranged from 0.22 to 0.57, with an average correlation of 0.38. The correlation range and average are higher than that of the Likert/ordinal correlations. However, the results still only meet a portion of the criteria for construct validation. Therefore, hypothesis 2 is not supported.

Hypothesis 3 proposed high, significant relationships between the new measure of values and the Likert measure of values. Pearson correlations were used to examine the strength of relationships between the new measure and Likert measure. Table 4 presents the correlations between each of these measures. As shown in the table, all relationships were positive and

significant, $p < 0.05$. However, like the relationships between the Likert and ordinal measures, correlation strength varied substantially. Furthermore, correlations ranged from 0.26 to 0.66, with an average correlation of 0.49. The correlation range and average are higher than that of the either of the previous two sets of correlations. Even though the correlations are higher than the previous sets of correlations, the new and Likert measures are still only moderately correlated. Therefore, the results still only meet a portion of the criteria for construct validation. Hypothesis 3 is not supported.

In order to assess discriminant validity, each of the values from the new measure were correlated with each of the big five personality dimensions (openness, conscientiousness, extraversion, agreeableness, and neuroticism). The Pearson correlations between the new measure and personality are found in Table 5. Hinkin (1998) suggests that evidence of discriminant validity exists when correlations of the measures of values should be higher than correlations between the new measure and personality. For openness, 4 of the 25 correlations were significant. This includes creativity ($r=0.39$, $p<0.05$), change ($r=0.13$, $p<0.05$), intellectual stimulation ($r=0.23$, $p<0.05$), and routine in work ($r=-0.17$, $p<0.05$). The strength of these significant correlations (i.e. the absolute value of the correlations) ranged from 0.13 to 0.39, and averaged 0.23. The low correlations in comparison to the convergent analyses shows divergence between openness and the new measure. For conscientiousness, 10 of the 25 correlations were significant. This includes use of expertise ($r=0.21$, $p<0.05$), continued development ($r=0.25$, $p<0.05$), being respected by others ($r=0.17$, $p<0.05$), job security ($r=0.13$, $p<0.05$), solving company problems ($r=0.32$, $p<0.05$), having leisure time ($r=-0.27$, $p<0.05$), supervising others ($r=0.22$, $p<0.05$), advancement ($r=0.17$, $p<0.05$), quality leaders ($r=0.13$, $p<0.05$), and accomplishment ($r=0.21$, $p<0.05$). The strength of these significant correlations ranged from 0.13 to 0.32, and averaged 0.21. The low

correlations in comparison to the convergent analyses shows divergence between conscientiousness and the new measure. For extraversion, 10 of the 25 correlations were significant. This includes being respected by others ($r=0.18$, $p<0.05$), contributing to society ($r=0.14$, $p<0.05$), solving company problems ($r=0.24$, $p<0.05$), working with others ($r=0.28$, $p<0.05$), having leisure time ($r=-0.13$, $p<0.05$), comfortable work conditions ($r=-0.16$, $p<0.05$), working independently ($r=-0.12$, $p<0.05$), supervising others ($r=0.32$, $p<0.05$), and social interaction ($r=0.26$, $p<0.05$). The strength of these significant correlations ranged from 0.12 to 0.32, and averaged 0.20. The low correlations in comparison to the convergent analyses shows divergence between extraversion and the new measure. For agreeableness, 11 of the 25 correlations were significant. This includes use of expertise ($r=0.17$, $p<0.05$), continued development ($r=0.18$, $p<0.05$), being respected by others ($r=0.17$, $p<0.05$), job security ($r=0.13$, $p<0.05$), contributing to society ($r=0.21$, $p<0.05$), solving company problems ($r=0.24$, $p<0.05$), working with others ($r=0.19$, $p<0.05$), working independently ($r=-0.15$, $p<0.05$), rule clarity ($r=0.14$, $p<0.05$), quality leaders ($r=0.14$, $p<0.05$), and social interaction ($r=0.16$, $p<0.05$). The strength of these significant correlations ranged from 0.13 to 0.24, and averaged 0.17. The low correlations in comparison to the convergent analyses shows divergence between agreeableness and the new measure. For neuroticism, 4 of the 25 correlations were significant. This includes solving company problems ($r=-0.16$, $p<0.05$), having leisure time ($r=0.12$, $p<0.05$), working independently ($r=0.15$, $p<0.05$), and supervising others ($r=-0.21$, $p<0.05$). The strength of these significant correlations ranged from 0.12 to 0.21, and averaged 0.16. The low correlations in comparison to the convergent analyses shows divergence between extraversion and the new measure. Collectively, none of the personality measures showed high correlations with the new values measure, and, on the whole, the correlations among the values measures were generally higher than the correlations between

personality and the new measure. Furthermore, this aligns with previous research that has shown relatively low relationships (magnitudes ranging from 0.00 to 0.34) between work values and personality traits (Leuty & Hansen, 2012). This suggests that, like previous assessments of personal values, the new measurement technique shows discriminant validity from personality. As evidence of discriminant validity exists, hypothesis 4 is supported.

Hypothesis five examined the face validity of the new measure. As part of the study, participants completed a measure of perceived face validity. The first item of this scale examined the extent that the participant believed that their values were sufficiently assessed by the scale. Responses indicated that, on average, participants agreed with this statement (M= 4.09, SD=0.67). The second item of this scale examined the extent that the participant believed that the scale adequately represented their values. Responses indicated that, on average, participants agreed with this statement (M= 4.15, SD=0.78). On the whole, the two item scale suggested that the scale was perceived as valid (M=4.12, SD=0.68). This provides support for hypothesis 5.

To examine hypothesis 6, each of the values measures were correlated with five outcome measures in order to assess criterion related validity of the new measurement technique. Similar patterns of relationships between the new measure and the other two values measures provides evidence for criterion validation. First, the relationships between each of the personal values and OCBs were examined. (These correlations are found in table 6.) Of the 25 Pearson correlations between the Likert measured values and OCBs, 19 were significant, $p<0.05$. Of the 25 Kendall's Tau correlations between the Ordinal measured values and OCBs, 11 were significant, $p<0.05$. Of the 25 Pearson correlations between the values assessed with the new measure, 16 were significant, $p<0.05$. Furthermore, similar patterns emerged between values assessed with the Likert measure and values assessed with the new measure. Of the 19 significant Likert measure correlations, 15

showed similar correlations in direction and significance to the parallel new format measures. Similar patterns were also found between the new measure correlations and the ordinal measure correlations. Of the 11 significant ordinal measure correlations, 8 correlations showed similarity in direction and significance to the ordinal measure correlations. The above results show some evidence that the new measure is a criterion valid measure of Likert values and ordinal values.

Next, the relationships between each of the personal values and CWBs were examined. (These correlations are found in table 7.) Of the 25 Pearson correlations between the Likert measured values and CWBs, 12 were significant, $p<0.05$. Of the 25 Kendall's Tau correlations between the Ordinal measured values and CWBs, 1 was significant, $p<0.05$. Of the 25 Pearson correlations between the values assessed with the new measure and CWBs, 8 were significant, $p<0.05$. Furthermore, inconsistent patterns emerged between values assessed with the Likert measure and values assessed with the new measure. Of the 12 significant Likert measure correlations, 6 showed similar correlations in direction and significance to the parallel new format measures. The one significant correlation with CWBs using the ordinal method was also found using the Likert method. In contrast to the findings with OCBs, evidence of criterion validation with CWBs was weak and inconsistent.

Next, the relationships between each of the personal values and organizational commitment were examined. (These correlations are found in table 8.) Of the 25 Pearson correlations between the Likert measured values and organizational commitment, 16 were significant, $p<0.05$. Of the 25 Kendall's Tau correlations between the Ordinal measured values and organizational commitment, 9 were significant, $p<0.05$. Of the 25 Pearson correlations between the values assessed with the new measure and organizational commitment, 14 were significant, $p<0.05$. Furthermore, similar patterns emerged between values assessed with the Likert measure and values

assessed with the new measure. Of the 16 significant Likert measure correlations, 11 showed similar correlations in direction and significance to the parallel new format measures. Similar patterns were also found between the new measure correlations and the ordinal measure correlations. Of the 9 significant ordinal measure correlations, 6 correlations showed similarity in direction and significance to the ordinal measure correlations. Once again, the above results show some evidence that the new measure is a criterion valid measure of Likert values and ordinal values.

Next, the relationships between each of the personal values and job satisfaction were examined. (These correlations are found in table 9.) Of the 25 Pearson correlations between the Likert measured values and job satisfaction, 11 were significant, $p<0.05$. Of the 25 Kendall's Tau correlations between the Ordinal measured values and job satisfaction, 4 were significant, $p<0.05$. Of the 25 Pearson correlations between the values assessed with the new measure and organizational commitment, 10 were significant, $p<0.05$. Like CWBs, inconsistent somewhat inconsistent patterns were found between the values assessed with the Likert measure and values assessed with the new measure. Of the 11 significant Likert measure correlations, only 6 showed similar correlations in direction and significance to the parallel new format measures. Similar patterns were found between the new measure correlations and the ordinal measure correlations. Of the 4 significant ordinal measure correlations, 3 correlations showed similarity in direction and significance to the ordinal measure correlations. In addition, the one value that showed inconsistency between the ordinal and new measure had the same correlation (-0.10), but was not significant for the new measure. The above results show some evidence that the new measure is a criterion valid measure of ordinal values. However, evidence for criterion validation of Likert values was inconsistent.

Finally, the relationships between each of the personal values and turnover intentions were examined. (These correlations are found in table 10.) Of the 25 Pearson correlations between the Likert measured values and turnover intentions, 9 were significant, $p<0.05$. Of the 25 Kendall's Tau correlations between the Ordinal measured values and OCBs, 2 were significant, $p<0.05$. Of the 25 Pearson correlations between the values assessed with the new measure, 7 were significant, $p<0.05$. Similar patterns emerged between values assessed with the Likert measure and values assessed with the new measure. Of the 9 significant Likert measure correlations, 6 showed similar correlations in direction and significance to the parallel new format measures. (An additional value showed a similar but non-significant correlation.) Of the 2 significant ordinal measure correlations, only 1 was similar in direction and significance to the ordinal measure correlations. The above results show some evidence that the new measure is a criterion valid measure of Likert values. However, given the low number of significant correlations with ordinal values, there is little evidence to support criterion validation for ordinal measures.

To summarize the hypothesis 6 analyses, the new measure showed evidence of criterion related validity for Likert values measurement for OCBs, organizational commitment, and turnover intentions, but not CWBs or job satisfaction. The new measure also showed evidence of criterion related validity for ordinal values measurement of OCBs, organizational commitment, and job satisfaction, but not for CWBs or turnover intentions. Collectively, the results of these analyses suggest partial support for hypothesis 6.

Discussion

The goal of study 3 was to assess the reliability and validity of the new measurement technique proposed earlier in this paper. Specifically, study 3 addressed construct, face, and

criterion related validity of the new measurement method. This study also examined test-retest reliability of the new measurement method.

The present study failed to demonstrate test-retest reliability of the new measurement method. While significant (and often moderate to large) relationships did exist between the items across administrations, the items were not sufficiently correlated to be considered consistent across administrations.

There are several reasons why this may have occurred. One possible explanation is that the construct of personal values may be too complex for individuals to adequately differentiate between all of the items sufficiently. For example, if an individual rated achievement and creativity both as being extremely important and then rank ordered them with achievement coming before creativity, perhaps the difference in importance between the two is too miniscule for this rank ordering to provide meaningful information. If this is the case, perhaps a Likert (or ordinal) measure alone might provide sufficient information. A second explanation for these inconsistencies could have been that too much time passed between administrations. Test-retest reliability assumes consistency of a construct across the two time points. In this case, it was essential that personal value importance remained constant across the two weeks. It is conceivable that life events may have created enough change in value importance that the previous assessment of values did not adequately represent the structure of their values system at time 2. A final explanation could have been related to insufficient effort in the surveys. Response times were somewhat low considering the number of questions that participants had to complete.

In the absence of reliability, evidence for validity can be difficult to establish. Therefore, the results of the validity hypotheses should be interpreted with caution. Of the three methods of validity assessment, construct validity showed the most inconsistent patterns. While some the

bivariate relationships suggested that personality and personal values were distinct constructs, evidence for convergence was non-existent. The Likert items generally showed stronger relationships with the new measure than the ordinal items. However, the new measure did not show strong enough relationships to demonstrate convergence with either the ordinal or the Likert format measures. One likely explanation for the lack of convergence was that the ordinal and Likert measures appeared to be fundamentally different. Relationships between the ordinal and Likert measures were low. If the goal of the new measurement was to provide information from both Likert and ordinal scales, perhaps the differences between the two older techniques were contaminating their relationships with the new measure. Interpreting these analyses in tandem, the evidence does not support construct validity for the new measure.

Criterion related validity also was inconsistent with this scale. The new measure showed consistent evidence of criterion related validity for OCBs and organizational commitment, and showed some evidence of criterion related validity for job satisfaction and turnover. There was no consistent evidence of criterion related validity for CWBs. A plausible explanation for these inconsistencies is similar to what was discussed in the previous paragraph. Perhaps the differences between ordinal and Likert format scales were contaminating relationships between the new measure and the criteria.

In spite of the inconsistent findings for criterion related and construct validation, the study did show evidence of face validation. On average, the participants believed that the assessment technique described their values fairly well. However, these results should be interpreted with caution. Subjective methods for assessing validity such as content validation or, in this case, face validation have been shown to only correlate modestly with other validation techniques, and has

been criticized for being a weaker approach for assessing validity (Carrier, Dalessio, & Brown, 1990; Murphy, 2009).

Though some of the hypotheses were supported, other equally important hypotheses were not supported. Collectively, the results of study three provide inconclusive data about the new method.

CHAPTER6 "GENERAL DISCUSSION"

This goal of this paper is to propose and validate a new scale that assesses values. It was expected that this scale would address many of the problems associated with the previous scales by allowing for ordinal and Likert measurement of value importance simultaneously. The first two studies were designed to create and test a new, more comprehensive taxonomy of workplace values. Study 1 used a small sample of graduate students to sort a large list of values from previous value measures into overarching value labels. The results of study 1 identified 14 overarching value categories. Study 2 assessed whether or not the 14 value taxonomy generated in study 1 would hold up in a larger sample. The validity of this taxonomy was first assessed through seeing how well other participants could resort the large list of values into the smaller list of value categories. The validity of this taxonomy was also assessed by traditional factor analytic techniques. The results were the same across both methods. The 14 overarching values were not validated by study 2.

With studies 1 and 2 failing to provide a meaningful taxonomy, study 3 was conducted using an existing taxonomy to test a new measurement method that combines relative and absolute measurement and yields ordinal values that are clumped in terms of importance. Study 3 provided inconclusive findings for the new method. The method did not yield test-retest reliability, but showed some positive (yet inconsistent) evidence of validity for the new method. However, because of the absence of reliability, the evidence of validity should be accepted with caution.

Implications, Limitations, and Future Directions

Taken together, the implications of the present studies are relatively limited. The first two studies did not successfully generate a validated taxonomy. Therefore, researchers and practitioners should not use the taxonomy that was established in study 1. However, as noted earlier, some limitations did emerge in this process. It is possible that iterative replications of studies 1 and 2 could have eventually yielded a usable taxonomy. Unfortunately, given that graduate student subject matter experts were used in study 1, repeated focus groups with these participants were impractical. Earlier in this paper, it was argued that a more comprehensive taxonomy is needed. More research is needed to successfully create such a taxonomy. Though the process would require several large samples, one possible approach to creating this taxonomy would be to attempt studies 1 and 2 using methods even more closely aligned with Hinkin (1998). In this case, repeated administrations of the 161 values could be used to narrow down to a useable taxonomy of values using an exploratory technique, and a final administration could be used to validate the final list of values using a confirmatory technique.

In addition, the argument was made earlier in this paper that a new method of assessment for personal values is needed. While the level of detail generated with this measurement technique may not be needed in all contexts, this technique is useful in circumstances where both rank order and extent of importance information is needed. Study 3 failed to consistently support the proposed method of assessment. Based on the findings of study 3 alone, the proposed method of assessment should not be used. Nevertheless, more research is needed before this method is abandoned as a practical method for assessing personal values. Future research should examine this method in other ways or using other samples to try to get a more conclusive view of whether or not this method of assessing workplace values is more effective. An added direction for the future would

be to propose and examine other methods to address some of the limitations brought up in this paper. With the proposed method yielding inconsistent results, it is possible that further research discounts this method as a viable option for assessing personal values. Therefore, other assessment techniques should be created to address the aforementioned limitations.

Though the results of study 3 did not validate the proposed method as a measurement technique for personal values, it is possible that the technique may be valid in other contexts. The measurement technique could be used in other contexts such selection, relative performance appraisals, or career choice evaluations. Additional research is needed to determine if this approach works more effectively in other contexts.

A surprise finding in the third study was that the ordinal assessments of personal values and Likert assessments of personal values were not very highly correlated. This was not hypothesized a priori, and therefore should be accepted with some caution. Perhaps this was an artifact of something specific to this study. However, there is a possibility that there is some validity to this finding. If so, it would suggest that ordinal assessments and Likert assessments of personal values are providing fundamentally different information. In the future, researchers should explore these differences further.

One additional limitation is that values are a somewhat ill-defined construct. To what extent are personal values just indicative of societal values? Should the construct of personal values include tangible items such as money? Is it truly possible to differentiate all personal values from each other in terms of importance? How stable are personal values? Questions such as these are largely unanswered. Because of the limitations on our understanding of what conceptual space personal values occupy and our lack of understanding for how personal values function, accurate assessment of personal values may be difficult to achieve.

Conclusion

This paper advocates for new approaches to the study and use of workplace related personal values. Existing personal values assessments have a variety of methodological and validity problems. Though the present studies did not address all of the existing limitations, these studies were an attempt to improve the measurement of personal values by addressing some of the most notable assessment problems. Though the present studies did not generate a usable taxonomy or validate a new assessment technique, they did provide a starting point for further research on both workplace values assessment and innovative measurement techniques that combine ordinal and Likert measurement. Additional research on both topics will likely reveal improvements in both research and practice of psychology in organizations.

APPENDIX A

List of Values from Rokeach Value Scale, the Schwartz Value Scale, England's Taxonomy, Knowdell's card sorting task, the Organizational Culture Profile, the Minnesota Importance Questionnaire, Super's Work Value's Inventory- Revised, and the Comparative Emphasis Scale:

Ability
Achievement
Adaptability
Advancement
Adventure
Aesthetics
Affiliation
Aggressiveness
Altruism
Ambition
Analytics
Artistic Creativity
Attention to Detail
Authority
Autonomy
Being on the frontiers of knowledge
Benevolence
Broadmindedness
Career Advancement
Caution
Challenge
Challenging Problems
Change
Comfort
Community
Compassion
Competence
Competition
Concern for Others
Conflict
Conformity
Conservatism
Control
Cooperation
Courage
Creative Expression
Creativity
Decision making
Decisiveness
Devotion to Work
Dignity
Diversity
Efficacy
Emotions
Employee Welfare
Environment
Equality
Excitement
Exercising Competence
Fairness
Family
Family Orientation
Fast Pace
Force
Freedom
Friendliness
Friendship
Fun/Humor
Group Work
Hard Work
Harmony
Hedonism
Helpfulness
Helping Others
Helping Society
High earnings
High Productivity
High Stakes Work
Honesty
Honor
Imagination
Income/Economic return
Independence
Individuality

Industry Leadership
Influence
Influencing People
Innovative Thinking
Intellectual Status
Intelligence
Job Satisfaction
Job Tranquility
Knowledge
Leisure
Liberalism
Lifestyle (Quality of Life)
Location of Job
Logic
Low Stress Work
Loyalty
Mental Challenge
Money
Moral Fulfillment
Obedience
Openness
Opportunism
Organization
Organizational Efficiency
Organizational Growth
Organizational Stability
Peace
Personal Gratification
Physical Challenge
Physical health
Pleasure
Politeness
Positive health
Power
Practicality
Praise
Praising
Precision Work
Prejudice
Prestige
Profit Gain
Profit Maximization
Property
Public Contact
Quality Driven
Quality/Good coworker interactions
Quality/Good Work Environment
Rationality
Recognition
Religion
Reputation
Responsibility
Results Orientation
Risk
Risk Taking
Role Conformity
Rule Orientation
Safety
Security
Self-Control
Self-Accomplishment
Self-direction
Self-Respect
Self-Trust
Skill
Social Hierarchy
Social Recognition
Social Status
Social Welfare
Spirituality
Stability
Status
Steep learning Curve
Structure
Success
Supervision
Supervision
Supportiveness
Team Orientation
Time Freedom
Tolerance
Tradition
Trust
Variety
Working alone
Working with others
Work-life balance

APPENDIX B

Values Taxonomy

Value Label	Definition	Examples Sorted Words
Group Work	value of working with others	Working with others, quality coworker interactions, team orientation
Independence	valuing independence and freedom in work	Autonomy, self-direction, supervision, responsibility
Creativity	value being creative	Creativity, innovative thinking, variety, imagination
Status	relative social or professional standing of someone or something	Authority, high earnings, social hierarchy, power
Achievement	doing things successfully	Success, achievement, advancement, hard work
Challenge	doing things that are hard or difficult	Challenging problems, fast pace, steep learning curve, precision work
Well-Being	state of being comfortable, healthy, and happy	Comfort, family orientation, low stress work, employee welfare
Stability/Risk	certainty/uncertainty	Caution, adventure, excitement, risk
Interpersonal Relations	value of quality interactions	Affiliation, trust, friendship, conflict
Knowledge/Ability	facts, information, and skills acquired by a person	Ability, skill, rationality, intelligence
Equity/Altruism	fairness; well being of others	Tolerance, concern for others, harmony, benevolence
Tradition	sticking to the rules	Conformity, rules orientation, change, rules orientation
Organizational Focus	quality of workplace	Organizational efficiency, stability, industry leadership
Recognition/Feedback	being identified/rewarded for my accomplishment	Recognition, praise

APPENDIX C

Manhardt's Values Taxonomy (i.e. items used in study 3 values assessments):

creativity
use of your expertise
continued development
being respected by others
job security
income/financial gain
contributing to society
risk
solving important company problems
working with others
having leisure time
change/variety in work
comfortable work conditions
advancement
working independently
recognition
supervising others
intellectual stimulation
aesthetics
rule clarity
quality leaders
routine in work
social interaction
autonomy/work freedom
accomplishment

Face Validity Scale:

Please rate the following statements on a scale from 1 to 5 from strongly disagree (1) to strongly agree (5).

I believe that this scale sufficiently assessed my values. _____

I believe that all values were adequately represented by this scale._____

I believe that no two values in this scale were similar. _____

APPENDIX D

Value	Correlation
Creativity	0.64*
Use of Expertise	0.41*
Continued Development	0.48*
Being Respected by Others	0.51*
Job Security	0.53*
Income/Financial Gain	0.55*
Contributing to Society	0.66*
Risk	0.49*
Solving Important Company Problems	0.54*
Working with Others	0.59*
Having Leisure Time	0.53*
Change/Variety in Work	0.44*
Comfortable Work Conditions	0.51*
Advancement	0.61*
Working Independently	0.30*
Recognition	0.41*
Supervising Others	0.52*
Intellectual Stimulation	0.61*
Aesthetics	0.37*
Rule Clarity	0.48*
Quality Leaders	0.30*
Routine in Work	0.65*
Social Interaction	0.57*
Autonomy/ Work Freedom	0.34*
Accomplishment	0.32*

Note: Significant correlations ($p<0.05$) are indicated with a *

Table 1. Pearson's correlations between wave 1 new measures and wave 2 new measures.

Value	Correlation
Creativity	0.42*
Use of Expertise	0.26*
Continued Development	0.26*
Being Respected by Others	0.34*
Job Security	0.49*
Income/Financial Gain	0.46*
Contributing to Society	0.46*
Risk	0.34*
Solving Important Company Problems	0.41*
Working with Others	0.41*
Having Leisure Time	0.46*
Change/Variety in Work	0.29*
Comfortable Work Conditions	0.26*
Advancement	0.45*
Working Independently	0.39*
Recognition	0.32*
Supervising Others	0.40*
Intellectual Stimulation	0.41*
Aesthetics	0.25*
Rule Clarity	0.33*
Quality Leaders	0.30*
Routine in Work	0.30*
Social Interaction	0.42*
Autonomy/ Work Freedom	0.32*
Accomplishment	0.23*

Note: Significant correlations ($p<0.05$) are indicated with a *

Table 2. Kendall's Tau correlations between Likert measures and Ordinal measure

Value	Correlation
Creativity	0.42*
Use of Expertise	0.32*
Continued Development	0.26*
Being Respected by Others	0.32*
Job Security	0.54*
Income/Financial Gain	0.57*
Contributing to Society	0.39*
Risk	0.24*
Solving Important Company Problems	0.39*
Working with Others	0.37*
Having Leisure Time	0.44*
Change/Variety in Work	0.22*
Comfortable Work Conditions	0.34*
Advancement	0.42*
Working Independently	0.41*
Recognition	0.30*
Supervising Others	0.39*
Intellectual Stimulation	0.46*
Aesthetics	0.33*
Rule Clarity	0.41*
Quality Leaders	0.40*
Routine in Work	0.41*
Social Interaction	0.35*
Autonomy/ Work Freedom	0.42*
Accomplishment	0.30*

*Note: Significant correlations ($p<0.05$) are indicated with a **

Table 3. Kendall's Tau correlations between New measures and Ordinal measures.

Value	Correlation
Creativity	0.56*
Use of Expertise	0.26*
Continued Development	0.43*
Being Respected by Others	0.45*
Job Security	0.54*
Income/Financial Gain	0.45*
Contributing to Society	0.61*
Risk	0.47*
Solving Important Company Problems	0.56*
Working with Others	0.51*
Having Leisure Time	0.59*
Change/Variety in Work	0.39*
Comfortable Work Conditions	0.40*
Advancement	0.44*
Working Independently	0.51*
Recognition	0.52*
Supervising Others	0.66*
Intellectual Stimulation	0.53*
Aesthetics	0.48*
Rule Clarity	0.54*
Quality Leaders	0.42*
Routine in Work	0.58*
Social Interaction	0.52*
Autonomy/ Work Freedom	0.39*
Accomplishment	0.38*

*Note: Significant correlations ($p<0.05$) are indicated with a **

Table 4. Pearson correlations between New measures and Likert measures.

Value	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
Creativity	**0.39***	0.04	0.07	0.03	0.04
Use of Expertise	0.01	**0.21***	0.09	**0.17***	-0.05
Continued Development	0.07	**0.25***	0.10	**0.18***	-0.10
Being Respected by Others	-0.02	**0.17***	**0.18***	**0.17***	0.00
Job Security	-0.02	**0.13***	-0.04	**0.13***	0.03
Income/Financial Gain	-0.06	-0.08	-0.08	-0.08	-0.03
Contributing to Society	0.01	0.08	**0.14***	**0.21***	0.09
Risk	-0.07	-0.06	0.03	-0.03	0.00
Solving Important Company Problems	0.01	**0.32***	**0.24***	**0.24***	**-0.16***
Working with Others	-0.05	0.10	**0.28***	**0.19***	-0.10
Having Leisure Time	-0.04	**-0.27***	**-0.13***	-0.08	**0.12***
Change/Variety in Work	**0.13***	-0.04	0.00	-0.01	0.03
Comfortable Work Conditions	-0.04	-0.03	**-0.16***	-0.03	0.10
Advancement	-0.01	**0.17***	0.10	0.08	-0.03
Working Independently	0.11	-0.10	**-0.12***	**-0.15***	**0.15***
Recognition	0.04	0.11	**0.16***	0.03	0.05
Supervising Others	-0.01	**0.22***	**0.32***	0.03	**-0.21***
Intellectual Stimulation	**0.23***	0.11	0.04	0.08	-0.02
Aesthetics	0.10	-0.03	0.04	-0.02	0.00
Rule Clarity	0.08	0.09	-0.02	**0.14***	0.04
Quality Leaders	0.06	**0.13***	0.04	**0.14***	-0.04
Routine in Work	**-0.17***	0.02	-0.08	0.02	0.10
Social Interaction	-0.07	0.02	**0.26***	**0.16***	-0.04
Autonomy/ Work Freedom	0.07	0.01	0.00	0.03	-0.01
Accomplishment	0.10	**0.21***	0.09	0.04	0.04

Note: Significant correlations ($p<0.05$) are bolded and indicated with a *

Table 5. Pearson correlations between new measures and personality dimensions.

Value	Likert Measure	Ordinal Measure	New Measure
Creativity	**0.32***	**0.08***	**0.14***
Use of Expertise	**0.36***	**0.11***	**0.22***
Continued Development	**0.36***	**0.11***	**0.31***
Being Respected by Others	**0.19***	0.00	**0.19***
Job Security	0.04	-0.05	0.07
Income/Financial Gain	-0.09	**-0.13***	**-0.11***
Contributing to Society	**0.26***	0.03	**0.18***
Risk	**0.12***	0.01	0.03
Solving Important Company Problems	**0.34***	**0.17***	**0.36***
Working with Others	**0.32***	**0.11***	**0.25***
Having Leisure Time	**-0.15***	**-0.27***	**-0.23***
Change/Variety in Work	**0.12***	-0.06	0.06
Comfortable Work Conditions	0.06	**-0.15***	-0.08
Advancement	**0.22***	0.05	**0.13***
Working Independently	-0.05	-0.08	-0.06
Recognition	**0.14***	0.04	**0.20***
Supervising Others	**0.26***	**0.12***	**0.26***
Intellectual Stimulation	**0.26***	0.04	**0.12***
Aesthetics	**0.12***	**-0.08***	-0.02
Rule Clarity	**0.16***	-0.04	0.06
Quality Leaders	**0.21***	0.05	**0.22***
Routine in Work	0.02	**-0.14***	0.01
Social Interaction	**0.30***	0.03	**0.18***
Autonomy/ Work Freedom	0.08	-0.06	0.02
Accomplishment	**0.29***	0.05	**0.17***

Note: Significant correlations ($p<0.05$) are bolded and indicated with a *

Table 6. Correlations between values measures and OCBs.

Value	Likert Measure	Ordinal Measure	New Measure
Creativity	-0.09	0.01	-0.01
Use of Expertise	**-0.29***	-0.06	**-0.22***
Continued Development	**-0.22***	-0.03	**-0.21***
Being Respected by Others	**-0.14***	-0.01	-0.08
Job Security	**-0.21***	-0.03	**-0.17***
Income/Financial Gain	-0.06	0.01	-0.05
Contributing to Society	-0.08	0.05	-0.06
Risk	0.10	0.04	0.10
Solving Important Company Problems	**-0.12***	-0.03	-0.10
Working with Others	-0.11	-0.02	-0.09
Having Leisure Time	**0.12***	**0.18***	**0.21***
Change/Variety in Work	0.03	0.01	-0.03
Comfortable Work Conditions	**-0.12***	0.02	-0.05
Advancement	-0.11	-0.01	**-0.14***
Working Independently	0.04	0.03	0.05
Recognition	-0.04	-0.01	**-0.13***
Supervising Others	0.00	-0.07	-0.07
Intellectual Stimulation	**-0.12***	-0.06	-0.05
Aesthetics	**0.13***	0.04	**0.12***
Rule Clarity	**-0.12***	-0.03	**-0.12***
Quality Leaders	**-0.15***	-0.05	-0.10
Routine in Work	0.07	0.05	0.07
Social Interaction	-0.06	-0.02	-0.01
Autonomy/ Work Freedom	-0.05	0.02	-0.04
Accomplishment	**-0.12***	-0.05	-0.09

Note: Significant correlations ($p<0.05$) are bolded and indicated with a *

Table 7. Correlations between values measures and CWBs.

Value	Likert Measure	Ordinal Measure	New Measure
Creativity	**0.30***	**0.09***	**0.17***
Use of Expertise	**0.25***	0.08	**0.17***
Continued Development	**0.22***	**0.10***	**0.19***
Being Respected by Others	**0.12***	0.00	**0.19***
Job Security	-0.02	-0.03	0.06
Income/Financial Gain	-0.11	**-0.14***	**-0.15***
Contributing to Society	**0.26***	-0.01	**0.15***
Risk	**0.15***	0.03	0.09
Solving Important Company Problems	**0.32***	**0.14***	**0.39***
Working with Others	**0.29***	**0.09***	**0.24***
Having Leisure Time	-0.09	**-0.19***	**-0.13***
Change/Variety in Work	0.11	-0.05	0.04
Comfortable Work Conditions	0.06	-0.06	-0.04
Advancement	0.09	-0.02	0.04
Working Independently	**-0.13***	**-0.11***	-0.06
Recognition	**0.12***	0.03	**0.18***
Supervising Others	**0.23***	0.02	**0.25***
Intellectual Stimulation	**0.20***	0.05	0.11
Aesthetics	**0.16***	**-0.09***	0.03
Rule Clarity	0.06	-0.06	0.01
Quality Leaders	0**.18***	0.07	**0.17***
Routine in Work	0.08	**-0.11***	0.05
Social Interaction	**0.26***	0.05	**0.17***
Autonomy/ Work Freedom	-0.03	-0.04	-0.01
Accomplishment	**0.24***	0.07	0.09

Note: Significant correlations ($p<0.05$) are bolded and indicated with a *

Table 8. Correlations between values measures and Organizational Commitment.

Value	Likert Measure	Ordinal Measure	New Measure
Creativity	**0.23***	0.03	0.09
Use of Expertise	**0.29***	0.08	**0.25***
Continued Development	**0.30***	**0.11***	**0.24***
Being Respected by Others	0.07	-0.02	**0.16***
Job Security	0.07	-0.01	0.10
Income/Financial Gain	-0.11	**-0.10***	-0.10
Contributing to Society	**0.17***	-0.03	0.08
Risk	0.05	-05	-0.03
Solving Important Company Problems	**0.27***	**0.12***	**0.32***
Working with Others	**0.25***	0.06	**0.23***
Having Leisure Time	-0.08	**0.18***	**-0.14***
Change/Variety in Work	0.04	-0.03	0.04
Comfortable Work Conditions	0.09	-0.08	0.01
Advancement	**0.12***	0.01	0.09
Working Independently	0.07	-0.05	-0.06
Recognition	0.03	0.04	**0.12***
Supervising Others	0.11	0.03	**0.15***
Intellectual Stimulation	**0.16***	-0.04	0.09
Aesthetics	0.03	-0.07	-0.03
Rule Clarity	0.03	-0.04	0.00
Quality Leaders	**0.12***	0.06	**0.12***
Routine in Work	-0.01	0.06	0.02
Social Interaction	**0.20***	0.06	**0.17***
Autonomy/ Work Freedom	0.03	-0.01	0.04
Accomplishment	**0.23***	0.07	0.09

Note: Significant correlations ($p<0.05$) are bolded and indicated with a *

Table 9. Correlations between values measures and Job Satisfaction.

Value	Likert Measure	Ordinal Measure	New Measure
Creativity	**-0.21***	-0.02	-0.08
Use of Expertise	**-0.29***	-0.07	**-0.22***
Continued Development	**-0.24***	**-0.10***	**-0.18***
Being Respected by Others	-0.05	0.02	-0.11
Job Security	-0.08	0.00	**-0.12***
Income/Financial Gain	0.10	0.07	0.09
Contributing to Society	-0.10	0.05	-0.08
Risk	-0.06	0.00	-0.02
Solving Important Company Problems	**-0.22***	-0.08	**-0.28***
Working with Others	**-0.20***	-0.04	**-0.20***
Having Leisure Time	0.06	**0.14***	0.10
Change/Variety in Work	-0.07	0.05	-0.08
Comfortable Work Conditions	-0.07	0.06	-0.02
Advancement	-0.03	0.02	-0.05
Working Independently	0.07	0.06	0.00
Recognition	0.00	-0.02	-0.11
Supervising Others	-0.07	-0.02	-0.11
Intellectual Stimulation	**-0.12***	-0.04	-0.10
Aesthetics	-0.4	0.05	0.04
Rule Clarity	-0.03	0.01	0.00
Quality Leaders	**-0.13***	-0.07	**-0.14***
Routine in Work	0.00	0.04	-0.01
Social Interaction	**-0.13***	-0.03	**-0.17***
Autonomy/ Work Freedom	0.03	0.03	-0.07
Accomplishment	**-0.17***	-0.06	-0.08

Note: Significant correlations ($p<0.05$) are bolded and indicated with a *

Table 10. Correlations between values measures and Turnover Intentions.

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ABSTRACT

ARE OUR VALUES BEING MEASURED ADEQUATELY? CREATION OF A MORE COMPREHENSIVE WORK VALUES SCALE

by

DANIEL R KRENN

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Advisor: Dr. Boris Baltes

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Degree: Master of Arts

Personal values are essential components in organizational climate and culture, leader-follower relationships, as well as other variables frequently investigated in I/O and management. Even though understanding values is vital to organizational research, the scales that assess these constructs have many problems. Depending on the scale that is used, the value taxonomy may vary significantly. There are also problems with the measurement of these values. Some scales assess the degree to which each value is important individually. Other values scales assess the order of importance of values. However, no scale has been created that assesses the extent of importance and the order of importance simultaneously. Study 1 generated a new taxonomy of work related personal values using a small sample of graduate students working in focus groups. Study 2 examined the validity of the taxonomy generated in study 1, but found no support for the proposed taxonomy. Study 3 tested the reliability and validity a new assessment technique. However, results revealed mixed support for the new technique. Suggestions are made for practical and empirical use of this scale as well as future directions for values assessment

AUTOBIOGRAPHICAL STATEMENT

Daniel Krenn is a graduate student at Wayne State University. He received his B.A. in Psychology from Auburn University and is pursuing both his M.A. and Ph.D. in Industrial/Organizational Psychology from Wayne State University. His research interests relate to employee well-being and organizational fairness. His research primarily examines aggressive and discriminatory behavior in the workplace, biases/accuracy in personnel practices, work-life balance, and effective teaching in the psychology classroom.