ABSTRACT

Benjamin B. Uhrich. BEYOND JUST HOURS WORKED: FURTHER VALIDATION OF THE WORKAHOLISM ANALYSIS QUESTIONNAIRE. (Under the direction of Dr. Shahnaz Aziz) Department of Psychology, April 2011.

The purpose of this study was to validate a new measure of workaholism, the Workaholism Analysis Questionnaire (WAQ), which was developed to address the methodological flaws of existing measures. The WAQ is a unidimensional measure that focuses on the *work drive* component of workaholism and its effect on work-life balance. The current study used a heterogeneous, working-professional sample to ensure the generalizability of the results. The WAQ's content validity was displayed when 14 graduate students discerned the 30 WAQ items from a pool of 40 items 89% of the time. In addition, the WAQ demonstrated discriminant validity by not correlating well with unrelated constructs, namely, the affective commitment and normative commitment subscales of Allen and Meyer's (1990) Three-Component Model of organizational commitment. Also, the WAQ showed concurrent validity by correlating well with a related construct, Obsessive-Compulsive Personality Disorder (OCPD). Finally, convergent validity was seen in that the WAQ correlated well with the Work Addiction Risk Test (WART), an existing and psychometrically sound measure of workaholism. In addition, a hierarchical regression analysis found that the WAQ explained incremental variance in OCPD beyond the WART. The development and validation of the WAQ is a substantial step in the right direction towards creating a unified definition of workaholism, as well as developing a reliable and valid measure for assessment purposes. Study limitations, directions for future research, and practical implications of this study are discussed.

BEYOND JUST HOURS WORKED:

FURTHER VALIDATION OF THE WORKAHOLISM ANALYSIS QUESTIONNAIRE

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CHAPTER I: INTRODUCTION

When most people hear the word *workaholism*, the next word that enters into their minds is alcoholism. This is undoubtedly the association that Oates (1971) wanted the reader of his book, "Confessions of a Workaholic," to draw when he described workaholism as "the compulsion or the uncontrollable need to work incessantly" (p. 11). Oates elaborates by suggesting that workaholism can permanently disturb health, happiness, and relationships. This definition of workaholism implies a connection to alcoholism by pointing out its addictive nature. As our understanding of workaholism has increased in breadth and complexity, its ties to alcoholism have only strengthened. Researchers have demonstrated commonalities between the two constructs by showing that workaholism can lead to the neglect of other interests, identity issues, rigid thinking, withdrawal, and denial (Porter, 1996).

Even though we still cannot clearly define everything that constitutes workaholism, it appears to be a multidimensional construct, consisting of high job involvement, high work drive, and low work enjoyment. In the medical field, a *syndrome* describes a group of symptoms that consistently occur together, but the full picture of the condition is still ambiguous (Haubrich, 1984; Macpherson, 2004). When the three facets of workaholism occur together, they consistently lead to negative work outcomes and health consequences (Burke, 2001; Spence & Robbins, 1992), thus qualifying workaholism as a syndrome (Aziz & Zickar, 2006). In the current study, the workaholism syndrome is conceptualized as an addiction. Furthermore, workaholics have a compulsion to work and cannot stop thinking about work, to the point that they neglect personal/family activities and experience negative health and work-related consequences. In brief, workaholics have an intense, internal drive to work that leads to a neglect of other interests and negative consequences. In agreement with this definition, the drive

component and work-life balance will serve as the foundation for a new measure of workaholism, the Work Analysis Questionnaire (WAQ).

The term workaholism has become very popular in the media. Despite the positive connotation that society tends to associate with workaholism, as well as its connection to the accepted illness of alcoholism, there has been very little empirical research on the topic. Several reasons for this neglect are thematic in the workaholism literature. First, researchers have failed to agree on a unified definition for workaholism (Buelens & Poelmans, 2004; Burke, 2001; Scott, Moore, & Miceli, 1997). This disagreement is especially true in regards to the dimensions of workaholism (i.e., work involvement, work drive, and work enjoyment) first proposed by Spence and Robbins (1992), which have served as the unsteady core of workaholism since their derivation. Secondly, the most commonly used measures of workaholism are methodologically flawed. Given that there is no consensus in regards to the dimensions that form the crux of workaholism, measures of workaholism are often criticized for their lack of validity and reliability (Ersoy-Kart, 2005; McMillan, Brady, O'Driscoll, & March, 2002). Lastly, researchers have not been able to impress upon society that the behavioral component of workaholism, working excessively, can lead to negative outcomes. Instead, organizations prefer that their employees work longer hours, which presumably leads to financial gains for both the organization and the employee. Spruell (1987) adds that work addiction is "the addiction most rewarded in our culture" (p. 44). If workaholism does not result in a decrease in employee productiveness, researchers will have a challenging time convincing organizations that its study is necessary.

In a previous study (Swords, Aziz, Walker, & Wuensch, 2008), the Work Analysis Questionnaire (WAQ) was developed in order to address the problems of existing measures, as

well as the definition of workaholism discussed earlier. Essentially, the purpose of the current study is to further validate the WAQ by showing that it can distinguish workaholism from a separate, unrelated construct (i.e., organizational commitment), thereby demonstrating discriminant validity, and that it correlates with a construct that has been shown to relate to workaholism (i.e., obsessive- compulsive personality disorder), thereby demonstrating concurrent validity.

Workaholism as an Addiction

If workaholism is fueled by an individual's internal drive, as with other addictions, then from where does this drive to work excessively come? Robinson (1999) believes that workaholism is a symptom of a diseased family system that practices maladaptive rules, beliefs, and behavior patterns. Like alcoholism, codependent relationships, and other addictions, work addiction changes in nature and appearance as it is passed down through generations. Even if the family is not "diseased," children might perceive their parents' love as being contingent on their life successes, thereby fostering an unhealthy, intense work ethic (Machlowitz, 1980). Another theory is that workaholics feel out of control over their own lives due to a traumatic event or a chronic state of anxiety, so they work incessantly in an attempt to reestablish control over their lives (Naughton, 1987). Some workaholics may have low self-esteem and thus work extremely long hours in order to increase their feelings of self-worth (Ng, Sorensen, & Feldman, 2007), which is also a very common cause of drug and alcohol abuse (Bradshaw, 1988; Kitano, 1989). Scott et al. (1997) proposed that there are different types of workaholism that have different antecedents, a view echoed by many workaholism researchers (McMillan, O'Driscoll, & Marsh, 2001; Ng et al., 2007; Porter, 1996).

A workaholic is an addict of work, just like an alcoholic is an addict of alcohol; therefore, the expression of these two illnesses can appear very similar. Porter (1996) wrote an article entirely dedicated to linking the two addictions together. In the article, she explains how workaholics experience denial of their illness, withdrawal, and identity issues much like an alcoholic. Denial stems easily for a workaholic because, even though family members and friends might complain, a workaholic's organization may applaud the desire to work excessive hours. Withdrawal is perhaps the most intriguing symptom of workaholism because it alludes to the fact that workaholics have a real physical addiction to work. Indeed, several authors have postulated that workaholics experience an adrenaline rush when working, which is followed by depression, anxiety, headaches, sleeplessness, and other withdrawal symptoms when not at work (Fassel, 1990; Morris & Chaney, 1983; McMillan et al., 2001; Porter, 1996; Robinson & Kelley, 1998). McMillan et al. (2001) points out that there have been no studies to date that have empirically tested the fluctuation of chemicals in the body to support this notion, so clinical observations are the only proof of this particular symptom (Fassel, 1990; Robinson, 1989).

Given that working long hours does not put people at an immediate health risk, like alcohol or drug use, it could be argued that the most damaging consequence of workaholism is the disruption it creates to an individual's work-life balance. Porter (1996) asserts that it is the drive component, not work involvement, which causes workaholics to neglect other interests. This symptom of workaholism is included in the diagnoses criteria for other addiction disorders in the DSM-IV-TR (American Psychiatric Association, 2000). By working longer hours, an individual inevitably takes away from time that could be spent pursuing hobbies, spending time with family, or enjoying other activities that comprise a normal, balanced life. Having work-life balance is necessary because the time spent with family and friends or doing other enjoyable

activities serves as a psychological and physical recovery period that is crucial to avoiding health problems caused by job stress (Schaufeli, Bakker, van der Heijden, & Prins, 2009). Workaholism and work-life imbalance have been shown to strongly correlate in several studies (Aziz, Adkins, Walker, & Wuensch, 2010; Aziz & Cunningham, 2008; Aziz & Zickar, 2006), with work drive being the workaholic dimension that most strongly correlates with work-life imbalance (r = .42 - .48) (Aziz & Zickar, 2006; Bonebright, Clay, & Ankenmann, 2000). Workaholism has also been found to directly correlate with work stress (Aziz & Zickar, 2006; Aziz & Cunningham, 2008), which indicates that these three constructs (i.e. workaholism, work stress, and work-life imbalance) are highly intertwined. This empirically supported link between workaholism and work stress is important to note (Andreassen, Ursin & Eriksen, 2007), because stress has been linked to such negative physical and psychological health consequences as exhaustion (Taris, Schaufeli, & Verhoeven, 2005) and psychosomatic symptoms (Burke, 2000).

The Workaholism Battery

The Workaholism Battery (Work-BAT) was originally developed by Spence and Robbins in 1992 to measure workaholism, and it is the most widely used instrument in this area of research (McMillan et al., 2002). Before Spence and Robbins (1992) started developing the measure, they conceptualized a *workaholic* as being high on work involvement, high on work drive, and low on work enjoyment. The Work-BAT breaks workaholism into three facets- *work involvement, work drive, and work enjoyment*: Work involvement measures an attitude of psychological involvement with work, work drive measures the internal pressure to work independent of pressure from external sources, and work enjoyment measures the degree of gratification experienced when working.

Spence and Robbins (1992) conducted a cluster analysis of their WorkBat on a population of 291 social workers that resulted in six worker types (see Table 1). Despite the Work-BAT's prevalence in workaholism research, it has been criticized for multiple internal and external validity problems. Spence and Robbins (1992) claimed that the Work-BAT contained sufficient internal consistency (α = .67-.86), face validity, and convergent validity with both personal and work factors. However, McMillan et al. (2002) proposed that Spence and Robbins's initial cluster analysis procedure was flawed because the *participants* were clustered to create the worker type profiles, when generally the *items* should have been clustered before creating the profiles in order to ensure structural validity. They also criticized the original participant pool for its homogeneity stating that a population of 291 degree-qualified social workers would not generalize to a heterogeneous national sample.

Table 1: *Classification of Worker Types*

Worker Type	Work Involvement	Work Drive	Work Enjoyment
Positively engaged worker	High	High	High
Workaholic	High	High	Low
Unengaged worker	Low	Low	Low
Work enthusiast	High	Low	High
Relaxed worker	Low	Low	High
Disenchanted worker	Low	High	Low

McMillan et al. (2002) retested the Work-BAT with a heterogeneous sample of 320 participants and found several other flaws: 1) The work involvement facet had weak convergent validity; 2) using a K-mean cluster analysis, 33% of the participants did not fit into a particular worker profile; and 3) results of an exploratory factor analysis showed a two-factor solution (work enjoyment and work drive) which explained 41% of the total variance. This procedure also shortened the Work-BAT from 25 to 14 questions. It should be noted that other empirical studies incorporating factor analyses have eliminated the work involvement dimension, opting for the two dimensional approach to workaholism (Andreassen et al., 2007; Burke, Richardsen, & Martinussen, 2002; Kanai, Wakabayashi, & Fling, 1996). The work enjoyment and work drive dimensions of the "new" Work-BAT had strong convergent validity, but produced weak correlations with the number of hours worked (work enjoyment, $r = .16$; work drive, $r = .22$). These weak, yet significant correlations with the number of hours worked make it difficult to conclude that this measure identifies workaholism, given that its two components do not strongly correlate with workaholism's main behavioral outcome. As a result, the Work-BAT lacks criterion-related validity. The authors concluded that these weak correlations imply that workaholism cannot be explained solely in terms of hours worked per week.

Given that workaholism is being studied cross-culturally, it is important that the Work-BAT has acceptable psychometric properties that generalize to various populations. Ersoy-Kart (2005) tested the Work-BAT's reliability and validity with a Turkish sample and replicated many of the findings discussed by McMillan et al. (2002). Ersoy-Kart also did a factor analysis that identified a two-factor model for workaholism- work enjoyment and work drive. Therefore, the Work-BAT was shortened to 20 items that contained these two factors and produced acceptable reliability ($\alpha = .83$). Individuals with Type A personalities are thought to have the same main

tendencies as workaholics, such as perfectionism and excessive control, hence work enjoyment and work drive were tested with a Type A behavior scale. Both facets converged weakly, but significantly (work enjoyment, $r = .22$; work drive, $r = .24$). Work enjoyment and work drive failed to produce any significant correlations with hours worked per week; again attesting that this measure cannot support Spence and Robbins's (1992) initial assertions that work involvement is the core indicator of workaholism (Ersoy-Kart, 2005).

This review has highlighted some key flaws in the Work-BAT, both theoretically and methodologically, that can be corrected. First, the work involvement dimension is the flagship component of workaholism, since the "workaholic types" all have high work involvement in common (Spence & Robbins, 1992). While this makes intuitive sense because workaholics most likely work long hours, work involvement is consistently a misfit in the workaholism model (Andreassen et al., 2007; Ersoy-Kart, 2005; McMillan et al., 2002). There are several explanations for work involvement's exclusion, but the most obvious one is that people work long hours for different reasons (e.g. they are pressured by their supervisor or constantly have to make deadlines). In addition, since its inception, Spence and Robbins's (1992) workaholism model faced methodological flaws because their measure was tested on an extremely homogeneous population of 291 social workers. Since then, other studies attempting to test the psychometric properties of the Work-BAT have also utilized unrepresentative samples (Bonebright et al. 2000; Burke, 1999a, 1999b, 1999c). This approach to validating the Work-BAT has created generalizability problems because it has not been successful in measuring workaholism in people from different cultures (Ersoy-Kart, 2005), nor has it proven to be effective for measuring workaholism in different occupations. As it stands, the Work-BAT has not been found to be a psychometrically sound or effective measure of workaholism.

The Work Addiction Risk Test

Robinson's Work Addiction Risk Test (WART; 1989) is the oldest, empirically supported measure of workaholism (McMillan et al., 2001). Robinson defines workaholism as the "overindulgence in and pre-occupation with work, often to the exclusion and detriment of the workaholic's health, intimate relationships, and the participation of child rearing" (Flowers & Robinson, 2002; p. 517). This definition emphasizes the workaholic's tendency to put work in front of other important aspects of his or her life, particularly relationships and health, thereby tying workaholism to addiction theory (McMillan et al., 2001). Robinson (1999) claims that work addiction stems from a diseased family system and is passed down through generations in different forms. This origin and pattern of transmission is similar to other addictive behaviors, like alcoholism and codependent relationships. Robinson and Kelley (1998) assert that workaholics may even experience a work hangover when coming down after an adrenaline rush brought on by a work binge. Compared to Spence and Robbins (1992), these ties with addiction theory bring Robinson's theory of workaholism closer to the original definition of workaholism (Oates, 1971).

The WART is a 25 item self-report inventory, which uses a four point Likert-type scale and produces a total score ranging from 25 to 100; the higher the participant's score, the more workaholic tendencies he or she demonstrates. Multiple principle components analyses have been performed on the scale (Flowers & Robinson, 2002), confirming that there are five factors being measured in the WART's conceptualization of workaholism: Compulsive Tendencies, Control, Impaired Communication/Self-Absorption, Inability to Delegate, and Self-Worth. Flowers and Robinson (2002) conducted a principle components analysis on the WART responses from 107 Workaholics Anonymous members and 363 undergraduates, and found it to

be comprised of the five different factors listed above. The experimenters then ran a discriminant analysis to see which factors correctly predicted the workaholics in the population. The results of the analysis showed that three factors of the WART's original five (compulsive tendencies, control, and impaired communication/self-absorption) made the greatest distinction between the two samples, with an 88.5% correct classification rate. This three factor solution has been replicated in other studies (e.g. Clarke, Lelchook, & Taylor, 2010).

The WART has proven to be a psychometrically sound instrument. Several different tests of the WART's reliability have confirmed that it is a consistent and stable measure, producing Cronbach's alphas of .88 (Robinson, 1999) and .85 (Robinson, Post, & Kahkee, 1992), a test-retest reliability of .83 (Robinson et al., 1992), and a Spearman-Brown split-half correlation coefficient of .85 (Robinson & Post, 1995). In a study involving 363 undergraduates, Robinson (1996) established concurrent validity for the WART by correlating it with measures of anxiety and Type A behavior, a construct theoretically related to workaholism (Machlowitz, 1980; Schwartz, 1982). The correlations between these measures and the WART were: the State-Trait Anxiety Inventory, (r = .40, p < .05); the Type A Self-report Inventory (r = .37, p < .05); and four scales of the Jenkins Activity Survey, namely, the Type A scale (r = .50), the Speed and Impatience Scale (r = .50), the Hard-driving and Competitive scale (r = .39), and the Job Involvement scale (r = .20). To establish the WART's face validity, Robinson and Post (1994) asked 50 undergraduates to match each item with the scale the item was attempting to measure; all scales proved to have suitable face validity. The WART demonstrated adequate content validity when 20 psychotherapists correctly identified the 25 items from the WART out of a pool of 35 items 89.4% of the time.

Even though the psychometric properties of the WART have been tested and appear to be strong, there are some obvious shortcomings in both the research and the measure that are very similar to the criticisms surrounding the Work-BAT. One major concern is that the current version of the WART was created using an undergraduate population (Robinson, 1999) and psychometrically tested using only undergraduates and members of Workaholics Anonymous (McMillan et al., 2001). This creates the same generalizability problems for the WART as the Work-BAT. Another point of concern is the uncertainty of the WART's factor structure. Flowers and Robinson's (2002) principle components analysis of the WART resulted in five factors; however, their discriminant analysis showed that only three of these factors (compulsive tendencies, control, and impaired communication/self-absorption) accurately identified workaholism. Flowers and Robinson (2002) admit that the Inability to Delegate and Self-Worth subscales are "ill defined, consisting of few items with minimal impact on separating the two groups" (p. 525). Furthermore, the discriminate analysis revealed that the total WART score misdiagnosed 43% of the workaholic sample as nonworkaholics, revealing the WART's potential problem with underestimating the prevalence of workaholism. Clark et al.'s (2010) principle components analysis of the WART originally resulted in six factors, but their parallel analysis reduced the WART down to three factors, which they named Impatience, Compulsion to Work, and Polychronic Control. It should be noted that Clark et al.'s (2002) dimensions of workaholism include a factor that measures Impatience and leaves out the Impaired Communication/Self-Absorption factor in the Flowers and Robinson (2002) construct, indicating a disagreement in the composition of the WART's three factor structure. Taris et al., (2005) calls for further shortening of the WART, from three subscales to just one. They argue that the eight-question Compulsive Tendencies subscale is an adequate conceptual representation of

workaholism and, due to the subscale's considerable overlap with the entire WART on correlates of workaholism, that there is "little information lost by focusing on the Compulsive Tendencies subscale only" (p. 51). This statement is partially acknowledged by Flowers and Robinson's (2002) findings that the items in the Compulsive Tendencies subscale were the most accurate items for discriminating between workaholics and nonworkaholics. The lack of diversity in test populations and the uncertainty of the factor structure are two major shortcomings that the WART has in common with the Work-BAT, highlighting its potential problems with reliability and validity.

Organizational Commitment

For decades, organizational commitment has been the focus of many researchers in the areas of management and organizational behavior. Like workaholism, organizational commitment is a complex construct that consists of multiple dimensions. Also like workaholism, researchers frequently disagree on the definition and the conceptual model of organizational commitment. Becker (1960) suggested that organizational commitment was created and strengthened by an individual's running tally of benefits, also referred to as "side-bets," that would be lost if the individual were to leave the organization. The threat of losing these side-bets, along with the individual's perceived lack of alternatives in the job market, committed him or her to the organization. In their 1974 article, Porter, Steers, Mowday, and Boulian claimed that individuals became more committed to their organization when they identified strongly with the organization, which in turn created an emotional attachment. Meyer and Allen (1984) claimed that both Becker's side-bet theory and an emotional attachment were responsible for an individual's commitment to an organization. They claimed organizational commitment was a combination of these two facets and coined them Continuance Commitment

(CC) and Affective Commitment (AC), respectively. In 1990, Allen and Meyer proposed a third dimension of commitment, Normative Commitment (NC), which occurred when the individual felt morally obligated to stay with his or her organization. This multi-dimensional approach demonstrated that an individual could be committed to an organization because he or she wanted to stay, needed to stay, and ought to stay. Allen and Meyer's Three-Component Model of organizational commitment (TCM) is the most widely accepted and researched model of organizational commitment today.

Despite the fact that studies on organizational commitment almost always find non-zero correlations between AC, CC, and NC, results of factor analyses have supported that these are distinguishable components of organizational commitment (Dunham, Grube, & Castenada, 1994; Hacket, Bycio, & Hausdorf, 1994; Meyer, Allen, & Smith, 1993). Of particular interest is the strong relationship between AC and NC. The most recent meta-analysis on organizational commitment found that AC had a corrected correlation of .63 with NC, based on 54 studies (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Despite the remarkably consistent and strong link between these two components, and the fact that they have similar correlation patterns with antecedent and consequence variables, the magnitude of these correlations tends to be adequately different, which bolsters the argument that both components are worth retaining. Also, researchers have suggested that continuance commitment is more accurately measured by two separate subcomponents, lack of alternatives and perceived sacrifice (McGee & Ford, 1987; Meyer et. al, 2002; Panaccio & Vandenberghe, 2009). These subcomponents are correlated with each other, but in opposite directions with affective and normative commitment. The perceived sacrifice subcomponent is closer to Beck's (1960) original definition of continuance

commitment, while the lack of alternatives subcomponent might be its best antecedent (Powell & Meyer, 2004).

Based on Allen and Meyer's (1990) original definitions, the antecedents of the three components of organizational commitment are as follows: AC is predicted by positive work experiences, CC by increasing investments in the organization, and NC by a general sense of obligation to others (Meyer et al., 1993). An individual's general work experience has a much larger effect than personal characteristics on all three dimensions of organizational commitment (Mathieu & Zajac, 1990; Meyer et al., 2002). AC is established when an employee feels a certain amount of good will towards the company, allowing the employee to more easily identify with and adopt the company's goals and mission. Thus, AC is enhanced by attitude variables that help the employee develop a favorable opinion of the company, like organizational support and dependability (Allen & Meyer, 1990), job satisfaction (Hackett et al., 1994), procedural justice (Moorman, Niehoff, & Organ, 1993), and competence-related variables (e.g., feedback and challenge; Allen & Meyer, 1990). CC is strengthened when employees perceive a lack of alternatives to their current organization and when they feel their knowledge and skills are not transferable (Meyer et al., 2002). Normative commitment is theorized to be caused by a sense of obligation to others. However, normative commitment's correlation with sense of obligation is barely stronger than continuance commitment's correlation with sense of obligation (Meyer et al., 1993). Instead, NC has stronger correlations with the same attitude-based variables as affective commitment, but to a lesser extent (Allen & Meyer, 1996; Meyer et al., 2002).

The different subscales of organizational commitment should have divergent relationships with workaholism. Upon first glance, an employee with high AC might appear to have the same intense work involvement as a workaholic. The critical distinction between the

two constructs is that workaholism is defined in terms of this intense work behavior, whereas AC is affective in nature. AC is more of a reaction that can vary depending on the organization that the employee works for, but the workaholic's drive to compulsively work exists, regardless of the way they feel about their current organization or supervisor. CC is strengthened when one feels they may lose benefits they have worked hard to attain upon leaving the organization, or when one feels they have inadequate alternatives for employment. Organizational reward systems and praise from peers may encourage workaholics who have a high need for achievement. Also, workaholics with low self-esteem who view the world as more dog-eat-dog may be more likely to perceive a lack of alternatives to their current employment situation. Lastly, NC is strongly related to AC, is correlated with the same attitude-based variables as AC, and may even be a consequence of high AC (Bergman, 2006). This deep connection with AC establishes divergence between NC and workaholism. Therefore, the WAQ, which measures the intensity of the work drive component, should have varying relationships with Allen and Meyer's (1990) subscales of organizational commitment.

Obsessive-Compulsive Personality Disorder

The DSM-IV-TR (American Psychiatric Association, 2000) defines obsessive–compulsive personality disorder (OCPD) as "a pervasive pattern of preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency" (p. 725). A person with OCPD often has intrusive thoughts and engages in repetitive behaviors that can be both time consuming and socially alienating, leading to emotional and economic loss. Both the National Epidemiological Survey on Alcohol and Related Conditions (Grant et al., 2004) and a review of epidemiological studies by Torgersen (2005) found OCPD to have the highest prevalence rate out of all personality disorders in the general population.

The conceptual ties between workaholism and OCPD are strongly rooted in the academic literature of both illnesses. OCPD is often thought of as an antecedent of workaholism. Naughton (1987) opines that workaholism is a stable personality characteristic developed in childhood, whereby children learn the value of working and adopt the compulsive practices of their parents. Ng et al. (2007) propose that workaholism is produced by dispositional traits, sociocultural experiences, and behavioral reinforcements; OCPD is cited as a key dispositional trait. Other researchers consider the two illnesses as a single disorder, postulating that workaholics are simply individuals with OCPD in an occupational setting (Naughton, 1987). Schwartz (1982) states that obsessive-compulsive workers prioritize being absorbed by their job over doing their job, which is a hallmark of the workaholic. Scott et al. (1997) effectively intertwines the two illnesses in that they describe three different types of workaholism, two of which meet the criteria for obsessive-compulsive illnesses. The *Perfectionist Workaholic* has a "preoccupation with details, rules, and lists" and "an unusually strong need to be in control, leading to inflexibility, rigidity, and behaviors aimed at gaining control" (p. 298). *Compulsive-Dependent Workaholics* know that their behavior is unreasonable, but continue to work excessively to suppress their obsessive thoughts, primarily about work (Scott et al., 1997). Based on their conceptualization of these two forms of workaholism, it seems apparent that Scott et al. (1997) believe that workaholism and OCPD are extremely similar in nature and expression.

Naughton (1987) theorized that when individuals are highly committed to work and heavily involved in work, they may still perform well in demanding jobs despite working unusually long hours. However, when one is both highly committed to work and has high OCPD tendencies, they will engage in a ritualized pattern of thoughts and behaviors that could render them dysfunctional, severely impairing their work performance. Mudrack (2004) sought to

confirm Naughton's theory and found that individuals who were highly involved in their job and also displayed dimensions of OCPD (i.e., obstinacy, orderliness, rigidity, and superego), engaged in more non-required work, a variable they used to measure workaholism. This study is an excellent example of empirical support for a theory that explains the relationship between OCPD and workaholism.

OCPD is most closely linked with the drive component of workaholism; this connection has been supported through empirical research (Aziz et al., 2010; McMillan, 2002). For people with either OCPD or workaholism, the drive to satisfy their obsession is so great that they lose control and focus on other important areas of life. Burke & Fiksenbaum (2009) empirically linked the drive component of workaholism to more obsessive job behaviors, less job and career satisfaction, more work stress, and poorer emotional and physical health. Aziz et al. (2010), using Spence and Robbins's (1992) measure, employed a statistical technique to observe the various worker types continuously, rather than using the traditional median-split approach. They found that the positively engaged worker and the workaholic composites were both significantly correlated with obsessive-compulsive behavior (r = .32 and .25, respectively), but the work enthusiast was not correlated. These results further strengthen the argument that it is the work drive component of workaholism that might have the strongest relationship with obsessive-compulsive behavior.

Personality research supports the findings in workaholism research that links workaholism to OCPD. Samuel and Widiger (2010) investigated the temperament and trait dimensions of OCPD using the Schedule for Adaptive and Nonadaptive Personality test (SNAP; Clark, 1993). They found OCPD to be related to many traits commonly found in the workaholism literature, including positive relationships with conscientiousness and neuroticism

(Burke, Matthiesen, & Pallesen, 2006), anxiousness (Robinson, 1996), anger hostility (Oates, 1971; Scott et al., 1997), competence (Burke et al., 2006), achievement striving (McMillan et al., 2001), and negative temperament (Clark et al., 2010). In a study of the SNAP by Morey, Warner, Shea, Gunderson, Sanislow, Grilo, Skodol, and McGlashan (2003), it was found that, out of twelve different personality disorders, workaholism correlated the strongest with obsessive-compulsive personality (r = .45). Moreover, out of the sixteen SNAP trait scales, workaholism correlated the strongest with obsessive-compulsive personality. These results confirm findings from other studies using the SNAP (Clark 1999; Clark, McEwen, Collard, & Hickok, 1993), which also demonstrated a strong, positive relationship between obsessive-compulsive personality and workaholism (r = .18 - .40). After assessing the SNAP, Samuel and Widiger (2010) concluded "workaholism appears to be a core trait of obsessive-compulsive personality disorder" (p. 331).

Current Study

The Workaholism Analysis Questionnaire (WAQ) was created to address the conceptual, structural, and methodological flaws of the two most commonly used measures of workaholism, the WART and Work-BAT. The WART and Work-BAT were both developed using unrepresentative samples of the general working population, whereas the WAQ was developed with a much more eclectic sample, correcting the generalizability problems of the WART and Work-BAT mentioned earlier. In addition, the WAQ incorporates the positive aspects of both measures, emphasizing the work drive component and its negative effects on work-life balance.

Study Hypotheses

When validating a measure's psychometric properties, it is important to demonstrate discriminant validity by showing that the measure does not assess an unrelated construct. Allen

and Meyer's (1990) AC and NC should not correlate well with workaholism, primarily because both are rooted in affect and workaholism is shown by behavior. On the other hand, CC should correlate well with workaholism because both are fueled by a desire for praise and recognition, and low self-esteem.

Hypothesis 1a (H1a): The WAQ will not correlate well with Affective Commitment.

Hypothesis 1b (H1b): The WAQ will correlate well with Continuance Commitment.

Hypothesis 1c (H1c): The WAQ will not correlate well with Normative Commitment.

Another important step when validating a measure is to demonstrate concurrent validity by showing that the measure correlates well with a construct that it should be related to theoretically. OCPD is a multidimensional construct that has been shown empirically to predict workaholism and contains facets similar to those of workaholism.

Hypothesis 2a (H2a): The WAQ will be well correlated with OCPD.

Hypothesis 2b (H2b): The WAQ will explain incremental variance in OCPD beyond the WART.

It is also predicted that the WAQ will correlate highly with the WART, thereby demonstrating convergent validity and supporting the idea that the WAQ is indeed measuring workaholism and that it has successfully incorporated the WART.

Hypothesis 3 (H3)*:* The WAQ scores will correlate positively with the WART scores

CHAPTER II: METHOD

Participants

Participants in the current study were employees from a variety of different organizations and professional fields (e.g., medicine, law, education). Most participants came from the southeast region of the United States. The investigators directly contacted 170 participants, who in turn were asked to distribute the survey link to members of their organization and other professional contacts. This method of recruiting provides a sample that is neither convenient nor random, but has been shown to provide quality data that is comparable to more traditional forms of recruiting (Smith, Tisak, Hahn, & Schmieder, 1997). Participation in the study was completely voluntary and participants were informed prior to starting the survey that they could withdraw at any time without consequence. The participants' survey responses were obtained and held confidentially throughout the course of the study to ensure anonymity. A participant's survey was included in the data analysis only if 90% of the questions had been answered; 219 participants started the survey, and 188 completed the survey and were included in the data analysis. Institutional Review Board (IRB) standards were strictly followed throughout the study and IRB materials (i.e., IRB approval form and consent forms) are presented in Appendix A.

Demographic information that was collected included age, gender, marital status, number of children, race, managerial level, job tenure, income bracket, and the average number of hours worked per week. The study sample included participants of all age groups, ranging from: 25 years and under (14%), 26-30 (43%), 31-35 (15%), 36-40 (7%), and over 40 years (20%). The sample included both women (66%) and men (34%), of which 60% were single and 40% were married. Over two-thirds of the participants (69%) did not have a child. The most represented racial group was Caucasian Americans (87%), followed by Asian/Pacific Islanders (7%), African

Americans (3%), Latin Americans (1%), and Native Americans (1%). Participants held non-management positions (43%), middle management positions (20%), lower management positions (15%), senior management positions (9%), and professor positions at universities (12%). Most participants were fairly new in their position, with 21% working in their current position for less than a year, 23% from 1-2 years, 24% from 3-4 years, 15% from 5-9 years, 4% from 10-14 years, and 11% for 15 years or more. Participants varied in annual income, ranging from: under $20,000 (3%), $20,000-$39,999 (18%), $40,000-$59,999 (34%), $60,000-$79,999 (22%), $80,000-$99,999 (7%), $100,000-$149,999 (10%), and $150,000 and over (6%). Additionally, participants worked a wide range of hours per week: 35 hours or less (9%), 36-40 (22%), 41-45 (25%), 46-50 (16%), 51-55 (13%), 56-60 (8%), and more than 60 hours per week (8%). The diversity of this study's sample ensures the findings are generalizable to the entire workforce population, not just to a specific position or type of organization.

Procedure

Personal contacts of the experimenters were sent a recruitment email, which informed them of the duration of the survey, the criteria for taking the survey (i.e., must be a working professional who is not self-employed nor in the military), and provided the link to the survey in Qualtrics, an online survey software company. The email also encouraged individuals to forward the recruitment email to coworkers or other professional contacts. To extend recruitment efforts, an announcement was made by the principle investigator on a social networking site. Acquaintances that responded to the announcement were sent the contents of the recruitment email via a personal message through the social networking site.

Before being granted access to the actual survey, the informed consent form was displayed and participants had to confirm they read and understood it before continuing to the survey. The

informed consent form explained their participation was voluntary and would not be monetarily compensated. It also assured participants of their right to confidentiality, anonymity, and to withdraw from the survey at any point without penalty. After giving their informed consent, participants were allowed to take the survey, which measured workaholism, OCPD, organizational commitment, and demographic information. Completion of the online survey took approximately 15 minutes. After the target number of participants had filled out the survey (based on a power analysis), the data were collected and exported from Qualtrics into Predictive Analytics SoftWare 17 (PASW) for statistical analysis.

Measures

The WART. The WART was created by Robinson (1989) and then revised by Robinson (1999) to assess workaholism; the current study used the updated version of the WART. The WART is a 25-item self-report measure scored on a 4-point scale, ranging from 1 (*very untrue of me*) to 4 (*very true of me*). None of the items were reverse scored. Sample items from the WART include, "I put more thought, time, and energy into my work than I do into my relationships with friends and loved ones" and "I get angry when people don't meet my standards of perfection." After completion, all 25 items were summed for a total work addiction score. Scores on the WART can range from 25 to 100, with a higher score indicating a higher level of work addiction. The range of obtained scores in the current study was 30-90. Robinson (1999) reported an alpha of .88, while a Cronbach's alpha of .90 was obtained in the current study.

The WAQ. The WAQ is a 30-item self-report measure of workaholism that is scored on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). None of the items were reverse scored. Sample items from the WAQ include, "I enjoy spending evenings

and weekends working" and "I often obsess about goals or achievements at work." After completion, all 30 items were summed for a total workaholism score. Scores on the WAQ can range from 30 to 150, with higher scores indicating higher levels of workaholism. The range of obtained scores in the current study was 31-126. Moreover, a Cronbach's alpha of .94 was obtained in the current study.

Organizational Commitment. Participants' organizational commitment was measured using Meyer et al.'s (1993) 6-item scales for affective commitment (AC), continuance commitment (CC), and normative commitment (NC). Items 1-6 represent the AC scale, items 7-12 are included in the CC scale, and items 13-18 are part of the NC scale. All items were scored on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item assessing AC includes, "This organization has a great deal of personal meaning for me." A sample item on the CC scale includes, "I feel that I have too few options to consider leaving this organization." A sample item from the NC scale includes, "I would not leave my organization right now because I have a sense of obligation to the people in it." For analytical purposes, the following items were reverse scored: 3, 4, 5, and 13. Scores on each organizational commitment subscale can range from 6 to 42, with higher scores indicating higher levels of that type of commitment. The range of obtained scores in the current study was 6-42 for AC, 7-42 for CC, and 6-42 for NC. Meyer et al. (1990) reported alphas of .87 (AC), .75 (CC), and .79 (NC), while Cronbach's alphas of .88 (AC), .80 (CC), and .90 (NC) were obtained in the current study.

Obsessive-Compulsive Personality Disorder (OCPD). The Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993) is a 375-item true-false instrument that assesses personality disorders and related trait pathology. The SNAP includes three Temperament scales, twelve Trait scales, six Validity scales, and thirteen Diagnostic scales, one of which is the 25-

item OCPD scale that was used in the current study. The six diagnostic criteria from the DSM-IV-TR that the OCPD scale covers are: "preoccupation with details," "perfectionism," "workaholism," "moral inflexibility," "inability to discard worthless objects," and "reluctancy to delegate." The internal consistency reliability of the OCPD scale from a recent study was .67 (Samuel & Widiger, 2010). In the current study, after eliminating 3 items from the OCPD scale, a Cronbach's alpha of .73 was obtained.

Demographics. Personal demographic and work-related information was also collected. Specifically, personal demographic information included age, gender, ethnicity, marital status, and number of children. The work-related information consisted of number of hours worked per week, length of time at current organization, length of time at current position, level of management, career status, and income bracket.

Data Analysis

Correlations and descriptive statistics (i.e., means, standard deviations, ranges) were obtained for all personal demographic variables (e.g., age, gender, ethnicity, marital status, and number of children), work-related information (e.g., number of hours worked per week, length of time at organization, length of time in position, level of management, and income bracket), and the study variables (e.g., WART, WAQ, organizational commitment, and OCPD scores).

Correlations between the WAQ and organizational commitment scores were run to determine whether the WAQ measures a construct that overlaps with organizational commitment or a construct that is distinguishable from organizational commitment, thereby testing Hypotheses 1a, 1b, and 1c (i.e., the discriminant validity of the WAQ). A correlation between the WAQ and the OCPD score was used to establish whether the WAQ measures a construct that overlaps with OCPD or a construct that is distinguishable from OCPD, thereby testing

Hypothesis 2 (i.e., the concurrent validity of the WAQ). A correlation between the WAQ and the WART was used to determine whether or not they are both measuring the same construct (i.e., workaholism), thereby testing Hypothesis 3 (i.e., the convergent validity of the WAQ).

To test Hypothesis 2b, a hierarchical linear regression analysis was performed in which age was entered as the first step, the WART was entered as the second step, and the WAQ was entered as the third step. In this sense, age was a control variable and the WART and the WAQ served as predictors; the OCPD score was entered as the criterion. Results of the analysis determined whether the WAQ adds incremental variance in predicting OCPD beyond that of the WART. A second hierarchical linear regression analysis, in which the order of the WAQ and the WART was reversed, was conducted to examine if the order in which the predictor variables were entered significantly affected the amount of variance in OCPD explained by each measure. A correlation between the OCPD and the WAQ scores was run in order to provide another approach to answering Hypothesis 2b. If OCPD is properly considered to be part of workaholism, and if the WAQ is a better measure of workaholism than is the WART, then the OCPD score should be better correlated with the WAQ than with the WART.

Two additional hierarchical linear regression analyses were conducted to examine if the demographic variable "hours worked per week" explained significant variance in OCPD beyond the WAQ and WART measures. In these regressions, age was entered as the first step, the workaholism measure was entered as the second step (i.e., the WAQ for the first regression and the WART for the second regression), and hours worked per week was entered as the third step. In these regressions, age was again a control variable and the workaholism measures and hours worked per week were the predictors of the criterion, OCPD. A .05 criterion of statistical significance was employed for all analyses.

A reliability analysis was conducted on all measures to ensure the findings were gathered from measures with adequate internal consistency reliability (i.e., Cronbach's alpha). Furthermore, an exploratory factor analysis was conducted on the items of the WAQ to assess construct validity.

CHAPTER III: RESULTS

Item Analysis

An exploratory factor analysis was conducted on the items of the WAQ to identify the factor structure of the measure. A principle-axis (common factors) factor extraction with a varimax rotation was chosen. The number of factors to be extracted was not specified; the eigenvalue rule (i.e., an eigenvalue greater than one indicates a factor) was used to determine the number of subscales in the factor. The scree plot and the eigenvalues clearly showed that the WAQ is a unidimensional measure of workaholism.

To demonstrate whether the WAQ has adequate content validity, 14 graduate students were asked to correctly identify the 30 items from the WAQ out of a pool of 40 items. The graduate students correctly identified the items from the WAQ 89% of the time, thereby establishing adequate content validity.

Similar to the findings of Samuel and Widiger (2010), the multidimensional OCPD measure produced an unsatisfactory Cronbach's alpha of .67. Therefore, item analysis was conducted on the OCPD scale in order to identify those items that did not contribute well to the reliability of the instrument. Three items (i.e., items 8, 14, and 16) with negative item-total correlations were culled from the OCPD scale, leaving a 22-item instrument with an adequate Cronbach's alpha of .73. Corrected item-total correlation coefficients (i.e., the correlation between an item with all of the other items that comprise the scale) showed each item in the scale, except for 8, 14, and 16, correlate well with the others. It is important to note that the regression results were similar using the total OCPD score.

Descriptive Statistics and Correlations

Descriptive statistics (means, standard deviations, ranges) and intercorrelations are displayed in Table 2. The WAQ was not significantly correlated with AC or NC, thus supporting H1a and H1c and establishing discriminant validity for the WAQ. On the other hand, the WAQ was significantly correlated with CC, as predicted by H1b. Furthermore, the WAQ was significantly correlated with OCPD, demonstrating concurrent validity and supporting H2a. It is noteworthy that the correlation between the WAQ and OCPD was very strong (r = .66) and slightly stronger than the correlation between the WART and OCPD (r = .64). Lastly, the WAQ was significantly correlated with the WART (r = .72), thereby establishing the WAQ's convergent validity and supporting H3.

Table 2. *Correlations and Descriptives (N = 188)*

Variable	WAQ	WART	AC	CC	NC	OCPD
WAQ	.94					
WART	.72**	.90				
AC	-.06	.02	.88			
CC	.27**	.23**	-.11	.80		
NC	.06	.03	.75**	.07	.90	
OCPD	.66**	.64**	-.07	.25**	.01	.73
Range of Possible Scores	30-150	25-100	6-42	6-42	6-42	22-44
Range of Current Data	31-126	30-90	6-42	7-42	6-42	23-44
M	74.72	63.93	26.30	25.08	24.47	33.09
SD	20.32	11.86	9.09	7.96	9.15	3.87

Note. Entries on the main diagonal are Cronbach's alpha. WAQ, Workaholism Analysis Questionnaire; WART, Work Addiction Risk Test; AC, Affective Commitment; CC, Continuance Commitment; NC, Normative Commitment; OCPD, Obsessive-Compulsive Personality Disorder. *$p < .05$ ** $p < .001$. $|g_1| < .41$ and $|g_2| < .79$ for all variables.

Regression Analyses

Two hierarchical linear regression analyses were used to determine whether the WAQ explained incremental variance in OCPD beyond the WART. A correlational analysis demonstrated that each variable (i.e., WAQ, WART, and OCPD) was significantly positively correlated with each other (see Table 2). Age was the only demographic variable that was significantly correlated with the criterion variable, OCPD, but was not correlated with either of the predictor variables, the WAQ and the WART. Therefore, age was entered as a control variable in the first step of the regression analyses. In the first regression analysis, the WART

was entered in the second step and accounted for 42% of the variance in OCPD, above and beyond age (see Table 3). The WAQ was added in the third step and explained 7% additional variance in OCPD, above and beyond the WART. Hence, Hypothesis 2b was supported. Also, it is important to note that the WAQ and the WART together explained 51% of the variance in OCPD, indicating a very strong relationship between workaholism and OCPD.

Table 3. *Hierarchical Regression Analysis Predicting OCPD from Age, the WART, and the WAQ.*

Step	Predictor	*B*	ΔR^2
1	Age	-.17*	.03*
2	Age	-.21**	
	WART	.65**	.42**
3	Age	-.15**	
	WART	.38**	
	WAQ	.38**	.07**
		Total R^2	.51

Note. WAQ, Work Analysis Questionnaire; WART, Work Addiction Risk Test. ΔR^2 for age is equal to the initial R^2, whereas ΔR^2 for the WART is the increment in R^2 after adding it to age, and ΔR^2 for the WAQ is the increment in R^2 after adding it to age and the WART. Total R^2= Adjusted R^2. * $p < .05$; ** $p < .01$.

A second hierarchical linear regression analysis was conducted to see if the order in which the WART and the WAQ are entered affects the variance in OCPD explained by each measure (see Table 4). When the order of the WAQ and the WART was reversed (i.e., the WAQ was entered before the WART), the WART also explained unique variance in OCPD, above and beyond the WAQ. The identical, significant results of the two regressions show that both the

WAQ and the WART explain unique variance in OCPD (i.e., the WAQ and the WART are related to OCPD in slightly different, but equal ways).

Table 4. *Hierarchical Regression Analysis Predicting OCPD from Age, the WAQ, and the WART.*

Step	Predictor	*B*	ΔR^2
1	Age	-.17*	.03*
2	Age	-.10	
	WAQ	.65**	.42**
3	Age	-.15**	
	WAQ	.38**	
	WART	.38**	.07**
		Total R^2	.51

Note. WAQ, Work Analysis Questionnaire; WART, Work Addiction Risk Test. ΔR^2 for age is equal to the initial R^2, whereas ΔR^2 for the WAQ is the increment in R^2 after adding it to age, and ΔR^2 for the WART is the increment in R^2 after adding it to age and the WAQ. Total R^2= Adjusted R^2. * $p < .05$; ** $p < .01$.

Two additional hierarchical regression analyses were used to determine whether the WAQ and/or the WART explained incremental variance in OCPD, above and beyond hours worked per week, given that hours worked per week is a strong correlate of workaholism (Spence & Robbins, 1992). In the current study, hours worked per week was strongly correlated with OCPD (r = .28), the WART (r = .29), and the WAQ (r = .43). These correlations indicate that the higher participants scored on the OCPD and workaholism measures, the more hours per week they typically worked. In the first regression (see Table 5), hours/week was entered after the WART and still produced a significant change in R^2 and a significant beta-weight. In the second regression (see Table 6), hours/week is entered after the WAQ and does not produce a

significant change in R^2 nor a significant beta-weight. Therefore, hours/week explains additional variance in OCPD above and beyond the WART, but not above and beyond the WAQ.

Table 5. *Hierarchical Regression Analysis Predicting OCPD from Age, the WART, and Hours Worked per Week.*

Step	Predictor	*B*	ΔR^2
1	Age	-.17*	.03*
2	Age	-.21**	
	WART	.65**	.42**
3	Age	-.22**	
	WART	.62**	
	Hours/Week	.12*	.01*
		Total R^2	.46

Note. WART, Work Addiction Risk Test. ΔR^2 for age is equal to the initial R^2, whereas ΔR^2 for the WART is the increment in R^2 after adding it to age, and ΔR^2 for Hours/Week is the increment in R^2 after adding it to age and the WART. Total R^2= adjusted R^2. * $p < .05$; ** $p < .01$.

Table 6. *Hierarchical Regression Analysis Predicting OCPD from Age, the WAQ, and Hours Worked per Week.*

Step	Predictor	*B*	ΔR^2
1	Age	-.17*	.03*
2	Age	-.10	
	WAQ	.65**	.42**
3	Age	-.10	
	WAQ	.65**	
	Hours/Week	.02	.00
		Total R^2	.44

Note. WAQ, Work Analysis Questionnaire. ΔR^2 for age is equal to the initial R^2, whereas ΔR^2 for the WAQ is the increment in R^2 after adding it to age, and ΔR^2 for Hours/Week is the increment in R^2 after adding it to age and the WAQ. Total R^2= Adjusted R^2. * $p < .05$; ** $p < .01$.

CHAPTER IV: DISCUSSION

The purpose of the current study was to further establish the validity of a new measure of workaholism–the WAQ. The two most commonly used measures of workaholism, the Work-BAT and the WART, have theoretical and methodological flaws; the WAQ was developed to address these flaws. The WAQ is a unidimensional measure with strong internal reliability and was psychometrically tested on a heterogeneous, employed population (i.e., people with different jobs, incomes, ages, etc.) to ensure the generalizability of the results. Additionally, the WAQ focuses on measuring the work drive component and the disruption work drive causes to an individual's work-life balance. Work drive is the essential facet of workaholism because it is most closely related to negative health and psychological consequences, such as work stress and work-life balance (Aziz & Cunningham, 2008; Aziz & Zickar, 2006), and health complaints (Burke, 2000; Spence & Robbins, 1992). A measure that incorporates the knowledge gained through 20 years of empirical studies on workaholism is necessary if we aim to conduct valid research on this topic in the future.

In order to establish the WAQ's validity, theoretical and empirical research was reviewed to identify constructs that are both related and unrelated to workaholism. The discriminant validity of a measure is established when the measure does not correlate well with an unrelated construct. Organizational commitment was an ideal construct to test the WAQ's discriminant validity because someone who is highly committed to their organization may appear to be a workaholic, but engages in excessive work for different reasons than a workaholic. Another form of validity is concurrent validity, which is shown when the measure being validated correlates well with a related construct. OCPD has many ties to workaholism and is also linked to many psychological and physical ailments (Pollak, 1979). Thus, showing the WAQ correlates

well with OCPD demonstrates concurrent validity and provides further evidence that workaholism leads to negative work and health outcomes. Finally, convergent validity is asserted by showing the measure being validated correlates well with an existing measure of the construct. The WART was chosen to demonstrate the WAQ's convergent validity because of its sound psychometric properties.

Workaholism and Organizational Commitment

The pattern of relationships found between the WAQ and the organizational commitment scales supported H1a, H1b, and H1c; these findings established discriminant validity for the WAQ. As predicted in H1a, the WAQ did not correlate well with AC. AC measures how emotionally attached people are to their *organization*; however, workaholics are committed to *work*. A workaholic's compulsion to work is fueled by an unhealthy internal drive; employees with high AC take on extra-work because they care about their organization and supervisor. A workaholic's addiction is behavioral and he/she does not need to be emotionally attached to his or her organization in order to feel a compulsion to work (Scott et al., 1997). Therefore, some workaholics may strongly identify with and care about their organization while other workaholics may dislike their organization, but neither of these circumstances occurs more frequently than the other.

H1b successfully predicted that the WAQ would correlate well with CC. It is of note that the WART also positively correlated with CC, further supporting the assertion that workaholism is linked to CC. CC is strengthened when employees view the consequences of leaving an organization as much greater than if they were to stay and when employees perceive a lack of alternatives to their current employment situations. Salancik (1977) offers an explanation for the relationship between CC and workaholism, claiming workaholism can develop early in one's

career through peer pressure and organizational reward systems. Organizational reward systems is one of the antecedents that Scott et al. (1997) says can lead to *achievement-oriented* workaholism. McMillan et al. (2001) have also identified achievement striving as a potential cause of workaholism and Killinger (1991) acknowledged that workaholics may develop their "compulsive drive to gain approval and success" (p. 6). Scott et al. (1997) further tie achievement-oriented workaholism specifically to CC, stating "achievement-oriented workaholics who have attained their goals may possess substantial organizational 'side bets,' which can lead to organizational commitment" (p. 306). It is important to note these workaholics still spend much of their leisure time working, cannot stop thinking about work, and work beyond the requirements of their employer or fiscal situation. In addition, achievement-oriented workaholics may exercise denial by expressing their enjoyment of work to provide a socially acceptable reason for their long hours, when they really work hard because of their need for praise and their desire for upward mobility. Alternatively, one study found that people scoring higher on work drive also scored higher on a beliefs and fears measure, indicating they view the world as extremely competitive and have a greater need to prove themselves, due to low self-esteem (Burke and Fiksenbaum, 2009). This finding explains how some workaholics may see a lack of alternatives to their current career situation, thereby increasing their CC.

H1c correctly predicted that the WAQ would not correlate well with NC. People who score high on NC feel morally obligated to stay with their organization. The demographic variables most highly correlated with NC are organization and position tenure (Meyer et al., 2002). This makes sense because typically, the longer people stay in a position or organization, the more they receive from the organization (i.e., money, mentors, friendships, etc.). These benefits can increase people's feelings of good will towards their organization, in which case an

increase in AC causes an increase in NC (Bergman, 2006). Also, they may cause people to form relational psychological contracts (i.e., long-term, socio-emotional and economic contracts, compared to the short-term, transactional psychological contracts that increase CC), making them feel obligated to pay back the company (Rousseau, 1995). Whichever the reason, just as with AC, workaholics do not feel more driven to work because their feelings of obligation to the organization increase–The drive to work comes from within. Another explanation for the nonsignificant relationship between NC and workaholism is NC's conceptual and empirical ties to AC; it has been debated whether or not NC is a separate construct from AC. NC correlated extremely well with AC in the current study, replicating a finding that is common in organizational commitment research (Allen & Meyer, 1990; Allen & Meyer, 1996). The strong relationship between NC and AC is easily explained; the more emotionally attached people are to their organization, the more obligated they will feel to stay with that organization. The combination of the consistently strong correlation between AC and NC coupled with the conceptual overlap between the two facets have led some researchers to conclude that the two are not separable (Ko, Price, & Mueller, 1997). Regardless, a workaholic's addiction to work is behavioral and does not predictably strengthen or weaken because of feelings of obligation to an organization.

Workaholism and Obsessive-Compulsive Personality Disorder

As predicted in H2a, the WAQ and OCPD produced a strong, positive correlation, meaning participants who scored higher on the WAQ–indicating greater workaholism–also scored higher on the OCPD scale. It is worth noting that the correlation between the WAQ and OCPD was slightly stronger than the correlation between the WART and OCPD. Also, the WAQ explained incremental variance in OCPD beyond the WART, supporting H2b.

Interestingly, when the order of the WAQ and the WART was switched in the hierarchical regression analysis, the WART also explained incremental variance in OCPD beyond that of the WAQ. By conducting this second analysis, we did not refute H2b, but painted a fuller picture of workaholism's relationship with OCPD; the WAQ and the WART explained equal and large amounts of variance in OCPD. In order to better understand how the workaholism measures related to OCPD, correlation analyses were ran between the total WART, the total WAQ, and the individual OCPD items. The WAQ correlated much stronger (i.e., a difference of .1 between the correlation coefficients was considered large enough to be noteworthy) than the WART with three OCPD items that assessed how much one's work interferes with one's personal life (i.e., "People say I neglect other important parts of my life because I work so hard," "I never get so caught up in my work that I neglect my family or friends," and "Some people say that I put my work ahead of too many other things"); this finding is congruent with the main themes of the WAQ. The WART correlated better with two OCPD items that measure reluctance to delegate (i.e., "I am usually right" and "Things go best when people do things the way I do them or want them done").

The link between workaholism and obsessive-compulsive behavior is supported by theoretical research on workaholism. Scott et al. (1997) proposed it is the obsessive-compulsive tendencies of workaholics that lead to negative health outcomes, poor work performance, and less job and life satisfaction; on the other hand, workaholics without obsessive-compulsive tendencies may thrive in their careers. Scott et al. (1997) conceptualized three types of workaholism, two of which incorporate obsessive-compulsive characteristics, the compulsive-dependent workaholic and the perfectionist workaholic (refer to Introduction section). The compulsive-dependent and perfectionist workaholic types are more likely to incur a host of

negative outcomes, including higher stress, greater physical and psychological problems, less job and life satisfaction, and lower job performance, among others. Scott et al.'s *achievement oriented* workaholic does not have obsessive-compulsive tendencies and is proposed to experience more positive outcomes than their non-workaholic coworkers, including lower stress, anger, and physical and psychological health problems, greater work and life satisfaction, and higher organizational commitment and job performance levels. Similarly, Naughton (1987) created two types of workaholism, of which one type, the *compulsive* workaholic, was preceded by OCPD and led to many negative consequences.

It is clear that researchers believe workaholics with obsessive-compulsive characteristics tend to be the problematic workaholics. People with OCPD frequently experience compulsions (i.e., urges that are difficult to stop) that are driven by persistent thoughts, or obsessions. People with high work drives obsess about work and cannot stop thinking about work, to the point where it interferes with their health and life outside of work. It is easily inferred from these definitions that the drive component of workaholism is the one most closely linked to OCPD; in addition, this connection has been empirically shown (Aziz et al., 2010; McMillan, 2002). The WAQ directly links workaholism to OCPD by making work drive the central component of workaholism. Burke and Fiksenbaum (2009) found the work drive component to lead to compulsive behaviors and to the neglect of other interests (i.e., family, friends, and community). In addition to work-life imbalance, high work drive has been linked to other negative psychological and physical health outcomes, such as less life satisfaction (Aziz & Zickar, 2006; Bonebright et al., 2000), exhaustion (Andreassen et al., 2007; Schaufeli et al., 2009), job stress (Andreassen et al., 2007; Aziz & Cunningham, 2008; Spence & Robbins, 1992), and psychosomatic symptoms (Andreassen et al., 2007; Burke, 1999a; Spence & Robbins, 1992).

The neglect of other interests and a high work drive are the main foci of the WAQ and are prevalent in OCPD–This connection solidifies workaholism as a harmful syndrome.

The WAQ and the WART

As predicted in H3, the WAQ was found to be significantly and positively related to the WART, thereby establishing convergent validity. Additionally, the strength of the correlation between these two measures suggests there is a fair amount of overlap between them. The WART has five factors, of which the compulsive tendencies scale contains the most items and has shown the strongest validity for identifying workaholism (Flowers & Robinson, 2002); high work drive, which leads to compulsive behavior, is also one of the focal points of the WAQ. The WART includes items about relationships (e.g., "I put more thought, time, and energy into my work than I do into my relationships with friends and loved ones"), although relationships and work-life balance do not serve as a focal point of the WART like they do in the WAQ. It is perhaps due to these similarities that the WAQ was strongly correlated with the WART.

The WAQ, the WART, and Hours Worked per Week

Working long hours has historically been thought of as the key behavioral indicator of workaholism (Scott et al. 1997; Spence & Robbins, 1992). Despite not being included in the operational definitions of workaholism assessed by the WAQ or the WART, correlations revealed that the demographic variable of hours worked per week was related to both measures. Work drive has been shown to relate to hours worked per week in past studies (e.g., Aziz & Zickar, 2006), so it was not surprising that the correlation between the WAQ and hours worked per week was much stronger than that with the WART. Also, it is important to note that hours worked per week has been empirically linked to some of the same important health consequences (e.g., work stress and work-life imbalance) related to work drive (Aziz & Zickar, 2006; Aziz &

Cunningham, 2008). These findings suggest that while hours worked per week may not be an essential component of workaholism, it still indicates workaholic tendencies. To further examine the WAQ's relationship with OCPD, a hierarchical regression analysis was conducted to see if hours worked per week explained incremental variance in OCPD beyond the WAQ–it did not. When the same analysis was ran, but replacing the WAQ with the WART, hours worked per week explained additional variance in OCPD beyond the WART. The results of these analyses indicate that the WAQ fully explains the correlates of workaholism, in this case OCPD, beyond hours worked per week–the WART does not.

Study Limitations and Future Research

Despite the significant findings, there were some study limitations that should be addressed. The first limitation is that the data were gathered using a non-traditional technique. The study's investigators directly sent the survey battery to professional contacts and asked them to send it to coworkers; on multiple occasions, contacts replied confirming they had sent it to their coworkers. This form of recruiting participants creates a "snowball" effect that is neither a sample of convenience nor a completely random sample. Using this form of recruitment limited our ability to keep an accurate record of the response rate; however, given that 170 people were directly contacted by the investigators and asked to requested to pass it to other employees (and 188 participants completed the online survey) it is likely that the response rate was high. It is important to note that other researchers have used a similar approach in their studies, asking individuals to recruit additional working professionals (Brotheridge & Lee, 2002; Lim & Lee, 2011); such methods have been shown to result in data that is of comparable quality to data collected through more traditional procedures (Smith et al., 1997).

Another limitation of the study is that the survey was only available online. The online nature of the survey may have led to some confusion amongst individuals, given that 31 participants started the survey but did not respond to at least one entire measure, ruling them ineligible to be included in the data analyses. Moreover, the survey was anonymous which made it impossible to tell if some participants accessed it again in order to complete it or if they just left the survey unfinished, thereby disqualifying themselves from the final participant pool. In the future, participants should be given a self-generated username and password, so if they have to leave the survey unfinished, they are able to access it later.

A third study limitation is that the use of self-report measures may have unpredictably affected the results of the study. Self-report measures are convenient, inexpensive, and easily distributed, but they can lead participants to unintentionally distort their responses due to their own imprecise views of themselves (Spector, 1994). This is particularly true of the measures used in this study because they include questions concerning opinions, facts, or feelings participants might be self-conscious of, particularly if their coworkers are also completing the survey. For example, participants might feel ashamed or embarrassed when answering questions about their behavior that may classify them as a workaholic or someone with obsessive-compulsive tendencies. Also, when answering questions regarding organizational commitment, participants may feel pressure to choose an answer that displays their commitment to the organization more favorably than is accurate, in fear that a coworker or supervisor may learn about their responses. Although self-reports are an important way of collecting data on participants' perceptions of themselves, gathering data from an acquaintance might provide a more realistic picture of the workaholic (see Aziz & Zickar, 2006).

A cross-sectional research design was appropriate for the current study and did not affect the study results. However, the strong correlation between workaholism and OCPD is provocative and warrants further investigation. Psychologists have been investigating the causes and symptoms of OCPD since the beginning of the 20th century (Freud, 1908/1953). A link to such an old, established disease may open new doors to treating and understanding workaholism. In fact, researchers have proposed that OCPD is an antecedent of workaholism (Naughton, 1987; Ng et al., 2007) rather than a co-occurring illness. Therefore, longitudinal studies should be used in the future to determine the nature of the relationship between OCPD and workaholism.

Practical Implications

The results of the current study further established validity for the WAQ, a new measure of workaholism. These results, in combination with a past validation study on this measure (Swords et al., 2008), provide ample evidence that the WAQ measures workaholism, a syndrome whereby people's compulsion to work damage their personal and professional lives. Future researchers investigating workaholism should use the WAQ to ensure that their findings are both valid and generalizable.

Workaholism has already been linked to negative, performance-related behaviors such as absenteeism and the inability to work in a team (Burke, 1999a; Mudrack & Naughton, 2001). Workaholism has also been linked to many negative psychological outcomes, such as emotional exhaustion (Andreassen et al., 2007; Burke et al., 2004), psychosomatic symptoms (Burke, 2000; Burke et al., 2004), and job stress (Burke, 2000). Organizations can use the WAQ to identify employees with workaholic tendencies and apply appropriate therapeutic or organizational interventions to mitigate these negative health and work outcomes.

For a long time, organizations have, perhaps indirectly, encouraged workaholism. Spruell (1987) pointed out that workaholism is "the addiction most rewarded in our culture" (p. 44). Currently, there are many types of workaholism in the research literature, some of which can cause one to excel in one's job (job-involved workaholism; Naughton, 1987) and others that hinder job performance (compulsive workaholism; Naughton, 1987). If they want workaholism to be taken seriously by corporate America, researchers should decide on a single definition and measure that highlight workaholism leads to negative work and health consequences. Spence and Robbins (1992) include high work involvement in their definition of workaholism, but work involvement does not fit their model of workaholism (McMillan et al., 2002) nor does it typically lead to negative health outcomes (Burke, 2000). Some of Spence and Robbins (1992) workaholic types are high on work enjoyment, yet enjoying work has yet to lead to negative consequences. The only essential characteristic of workaholism is a high work drive or compulsion to work because it is the only facet that consistently leads to negative consequences. The WAQ is the most valid and reliable measure of workaholism because it focuses on measuring the essential characteristic of workaholism, high work drive, without measuring additional noise (i.e., work involvement or work enjoyment).

A disease cannot be treated correctly if it is not accurately defined; the definition of workaholism has been elusive since the beginning of the construct's conceptualization. The WAQ, however, uses the compulsion to work as the focal point of workaholism. Consequently, readers and researchers can link the syndrome with obsessive-compulsive disorders in the DSM-IV and create therapeutic treatments and organizational interventions to combat the compulsive tendencies produced by a high work drive. For instance, Virick and Baruch's (2007) findings suggest that organizations with a strong work-family culture may decrease some of the harmful

effects of having a high work drive. Also, officially classifying workaholism as an addiction lends the disease to a wide array of treatments already available, such as self-help groups and step programs. The connection with OCPD should instantly enhance the credibility of workaholism as a syndrome that leads to harmful effects.

Conclusions

The goal of the current study was to validate a new measure of workaholism, the WAQ, using a heterogeneous, working-professional sample to ensure the generalizability of the findings. The WAQ's content validity was displayed when 14 graduate students discerned the 30 WAQ items from a pool of 40 items 89% of the time. In addition, the WAQ demonstrated discriminant validity by not correlating well with unrelated constructs, AC and NC, and convergent validity by correlating well with the WART, an existing and psychometrically sound measure of workaholism. The WAQ also established concurrent validity by correlating well with a theoretically and empirically related construct of workaholism, OCPD. The relationship between the WAQ and OCPD generated the most important results in the study, given that the correlation between the WAQ and OCPD was very strong. That is, the WAQ explained incremental validity in OCPD beyond the WART. Additionally, the WAQ correlated with individual OCPD items which assessed how much one's work interferes with one's personal life much better than the WART. These findings increase the credibility of workaholism (measured by the WAQ) as a harmful syndrome, since OCPD is included in the DSM-IV and has a long-standing history with problematic anxiety and other poor psychological health outcomes. The WAQ measures a problematic form of workaholism, where one feels intense internal pressure to work that disrupts work-life balance and can lead to poor health outcomes. Therefore, the WAQ can be used by organizations to identify employees displaying workaholic tendencies, so that

proper interventions may be applied before the employee's health and performance worsens. The development and validation of the WAQ is a substantial step in the right direction towards creating a unified definition of workaholism, as well as developing a reliable and valid measure for assessment purposes.

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APPENDIX A: IRB MATERIALS

EAST CAROLINA UNIVERSITY
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1L-09 Brody Medical Sciences Building• 600 Moye Boulevard • Greenville, NC 27834
Office 252-744-2914 • Fax 252-744-2284 • www.ecu.edu/irb

Date: October 19, 2010

Principal Investigator: Benjamin Uhrich
Dept./Ctr./Institute: 1901 Covengton Way, Unit 201
Mailstop or Address: Greenville, NC 27858

RE: **Exempt Certification**
UMCIRB# **10-0565**
Funding Source: Unfunded

Title: "Beyond Just Hours Worked: Further Validation of the Workaholism Analysis Questionnaire"

Dear Benjamin Uhrich:

On 10.18.10, the University & Medical Center Institutional Review Board (UMCIRB) determined that your research meets ECU requirements and federal exemption criterion #2 which includes research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects and any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

It is your responsibility to ensure that this research is conducted in the manner reported in your Internal Processing Form and Protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB Office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification Request at least 30 days before the end of the five year period.

Sincerely,

Chairperson, University & Medical Center Institutional Review Board

Attachments:
- Informed Consent (dated 10.13.10)

Cc: Shahnaz Aziz, PhD

What possible harms or discomforts might I experience if I take part in the research?
It has been determined that the risks associated with this research are no more than what you would experience in everyday life.

What are the possible benefits I may experience from taking part in this research?
We do not know if you will get any benefits by taking part in this study. This research will further our understanding of workaholism, a syndrome with potentially serious health implications. There may be no personal benefit from your participation, but the information gained by doing this research may help others in the future.

Will I be paid for taking part in this research?
We will not be able to pay you for the time you volunteer while being in this study.

What will it cost me to take part in this research?
It will not cost you any money to be part of the research study.

Who will know that I took part in this research and learn personal information about me?
To do this research, ECU and the people and organizations listed below may know that you took part in this research and may see information about you that is normally kept private. With your permission, these people may use your private information to do this research:

- Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.
- The University & Medical Center Institutional Review Board (UMCIRB) and its staff, who have responsibility for overseeing your welfare during this research, and other ECU staff who oversee this research.

How will you keep the information you collect about me secure? How long will you keep it?
At no point in the survey process will any identifying information be associated with your responses. All responses to this survey will remain completely anonymous and confidential, as you will never be asked to identify yourself. The final report for this study will include only aggregated data; no individual data will be singled out for separate analysis. The responses that you provide will be encoded and analyzed by the research team at East Carolina University. Only members of the East Carolina University research team will be permitted to view the responses to the survey. The information collected from this study will be stored in a private database and will only be kept throughout the duration of analysis. All analyses will be conducted prior to May 2011.

What if I decide I do not want to continue in this research?
If you decide you no longer want to be in this research after it has already started, you may stop at any time. You will not be penalized or criticized for stopping. You will not lose any benefits that you should normally receive.

Who should I contact if I have questions?
The people conducting this study will be available to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator, Ben Uhrich, at 336-339-3224 (days) or Dr. Aziz at 252-328-1379 (days) if you have any questions regarding this study.

If you have questions about your rights as someone taking part in research, you may call the UMCIRB Office at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of UMCIRB Office, at 252-744-1971.

I have decided I want to take part in this research. What should I do now?
The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that I can stop taking part in this study at any time.
- By signing this informed consent form, I am not giving up any of my rights.
- I have been given a copy of this consent document, and it is mine to keep.

Participant's Name (PRINT)	**Signature**	**Date**

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above, and answered all of the person's questions about the research.

Person Obtaining Consent (PRINT)	**Signature**	**Date**

Principal Investigator (PRINT)	**Signature**	**Date**