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Does the courage measure really measure courage? A theoretical and empirical evaluation

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Courage has seen an explosion of research in all branches of psychology, and the most popular measure is Norton and Weiss's the courage measure (CM). Despite widespread use, limited investigations into its psychometric properties and validity have been performed. To ensure the strength of findings drawn from the scale, the current study performs a theoretical, psychometric, and empirical analysis of the CM. The results demonstrate that the CM has theoretical concerns stemming from the operational definition of courage used during its creation, and may not actually measure courage. Also, the CM was shown to consist of two dimensions separated by regular and reverse coding. Next, the scale demonstrated slight concerns with method effects, and its construct validity was analyzed. Together, the results demonstrate that the CM would benefit from the removal of reverse coded items, and may actually gauge persistence despite fear rather than courage.

Keywords: courage; persistence despite fear; personality; scale development; psychometrics

1. Introduction

In recent years, courage has seen a boon of research in psychological literatures. In positive psychology, scholars have continuously debated about the true nature of courage. This discussion has led to debates on the nature and dynamics of courage, as well as the creation of many theorized antecedents and outcomes (Gillham & Seligman, 1999; Seligman, Steen, Park, & Peterson, 2005). In clinical psychology, authors have pointed to the importance of courage to confront personal trauma or phobias, often noting that it may take large amounts of courage to perform seemingly small feats (Corn, 2009; Cogle & Hawkins, 2013; Putman, 1997). Even in industrial/organizational psychology, courage has often been used to explain the behaviors and effectiveness of certain employees. Authors point to the importance of courage in leadership positions (Snyder, 2010; Terry, 1993), employee whistle-blowing (Faunce, Bolsin, & Chan, 2004; Jubb, 1999), and a host of other organizational outcomes (Sekerka, Bagozzi, & Charnigo, 2009; Srivastva & Cooperrider, 1998). Together, it appears that courage has rapidly gained attention across numerous disciplines of psychology, leading to a rush to study the construct.

As with any construct, a valid measure is needed to empirically study it. To date, two notable measures of courage exist. The first is Woodard and Pury's (2007) 23-item measure. Although the authors performed multiple studies to create their measure, no studies have adapted its use. This is likely because, as Woodard and Pury note (2007), their scale's factor structure is uncertain at best. The second notable courage measure (CM)

is Norton and Weiss's (2009) the CM. The CM has been adapted in several studies to analyze the effects of courage, and is certainly the most popular measure of courage. Despite its popularity, the scale is seemingly understudied and may have certain undiscovered flaws, as noted below.

First, although Norton and Weiss (2009) gave sufficient information about courage in their background, some information was absent. Although it is unrealistic to expect a single article's background section to include a comprehensive summary of the courage literature, it would be beneficial to review certain aspects that were not included to determine whether the scale appropriately relates to previous conceptualizations of courage. Second, in the creation of the CM (further detailed below), only the criterion validity of the scale was analyzed. Although this is an important aspect of the scale development process, it is not a comprehensive analysis of the measure. Other aspects of the scale's validity could determine the theoretical soundness of the measure, as it is still largely unknown. Third, the analysis of the scale's psychometric properties was brief. A reanalysis could provide more information, and either support Norton and Weiss's (2009) findings or discover alternative properties. If alternative properties were discovered, then alterations to the scale would be necessary before further use. Fourth, the method effects related to the scale are unknown, and may incur undue bias on the scale's results.

Given this, the current study presents a theoretical and empirical analysis of Norton and Weiss's (2009)

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the CM. The goal of the current study is *not* to be critical of the scale. The measure has already had certain aspects of its validity supported. Also, several studies have successfully used the scale, and have shown it to be a valid predictor of certain useful outcomes. Therefore, it would be foolish to completely disregard the measure based on the issues raised, as it has been shown to be a useful tool; however, research and measures should always be subject to analysis and reanalysis. As Leong and Austin (2005) stated, ‘validation is never complete’ (p. 142). Depending on the outcomes of these ongoing analyses, it may be important to re-conceptualize or alter the scale. This would result in a more valid measure, and would greatly benefit practitioners and researchers. Inferences made from using the scale would be more sound, and could more appropriately be incorporated in future research. Also, surrounding theory would become more accurate, and important theoretical developments could be made. Therefore, the current study presents a theoretical and empirical analysis of the CM (Norton & Weiss, 2009) to investigate its soundness.

2. The courage measure (background)

The CM was created by Norton and Weiss (2009) as a face-valid measure of courage. To create their measure, the authors ‘developed twelve rationally-derived items to assess self-perceived courageousness’ (Norton & Weiss, 2009, p. 3), and each item was modeled after the operational definition of ‘persistence or perseverance despite having fear’ (Norton & Weiss, 2009, p. 3). To explore the validity of this newly created measure, Norton and Weiss (2009) obtained a sample of 31 participants who qualified as having a spider phobia (screened from an initial sample of 312). Then, the authors performed a behavioral approach test, and recorded the distance (in inches) that the participants approached the spider. The results demonstrated that the CM had a unidimensional factor structure using the sample of 312, had adequate test–retest reliability using the sample of 31, and strongly correlated with the distance a participant would approach a spider using the sample of 31. While this provides initial information on the scale’s psychometric properties and concurrent validity, many other aspects of the scale are largely unknown, which may cause the scale to be inadequate for research purposes. Therefore, the current study analyzes several aspects of the CM (Norton & Weiss, 2009). Below, theoretical concerns, psychometric concerns, and construct validity concerns are elaborated upon. Then, these concerns are tested using a sample of college students, with the goal of providing a comprehensive re-analysis of the CM (Norton & Weiss, 2009).

3. Theoretical concerns

The most notable theoretical concern is the definition Norton and Weiss (2009) chose as the reference for their scale, which was created by Rachman and colleagues (Rachman, 1990; Cox, Hallam, O’Connor, & Rachman, 1983; McMillan & Rachman, 1987, 1988; O’Connor, Hallam, & Rachman, 1985). The definition, ‘persistence or perseverance despite having fear’ (Norton & Weiss, 2009, p. 3) was commonly used for decades, and is still used in popular press articles and books (Cogle & Hawkins, 2013); however, scientific articles have begun to stray away from using this definition. Although it is uncertain exactly why authors have begun to abandon this definition, two reasons are likely the largest contributors. First, this definition does not adequately differentiate courage from risk taking. When an individual takes a risk, they likely experience fear of the consequences. Should this make them courageous? As others have likewise noted (Pury, Kowalski, & Spearman, 2007; Rate, Clarke, Lindsay, & Sternberg, 2007), the answer is likely not, and other factors and processes are involved when labeling courageous behaviors. For example, an individual who, without reason, leaps from a cliff is taking a risk and may experience fear, but most would consider it inappropriate to consider such an action as courageous. Nevertheless, the definition ‘persistence or perseverance despite having fear’ (Norton & Weiss, 2009, p. 3) would consider this act courageous, which is a weakness of the definition itself.

Second, Rate et al. (2007) provided a multiple-study analysis into the characteristics of courage. Their included studies involved a content analysis methodology of participant qualitative conceptualizations of courage, an investigation of participants’ implicit beliefs of courage through a vignette-rating task, a card-sorting task with multidimensional scaling to reaffirm their courage conceptualization, and an examination of peripheral factors in regards to courage. The resultant empirically validated definition is, ‘(1) a willful, intentional act, (2) executed after mindful deliberation, (3) involving objective substantial risk to the actor, (4) primarily motivated to bring about a noble good or worthy end’ (Rate et al. 2007, p. 95). Initially, this definition also included that fear may or may not be present in a courageous action, but subsequent revisions to this definition (Rate, 2010) have removed this requirement of courage as any emotion may or may not be present in any action. With the removal of fear from the definition, Rate (2010) noted that the presence of the emotion is irrelevant for identifying courageous behaviors, and those who experience fear during a behavior are no more courageous than those who do not. This removal of fear is a drastic change from Rachman’s (1990) fear-based definition, and denotes a

major shift in courage conceptualizations. Rate's definition (2010), although lengthier, does a much more adequate job at differentiating courage from other constructs, and has been adapted by many authors (Hannah & Avolio, 2010; Martin, 2011). Actions that satisfy these four requirements are more than simply risk taking; these actions are courageous actions.

Alternatively, a CM that is based upon Norton and Weiss's (2009) chosen definition may not actually measure courage, since it may only measure risk taking. When analyzing Norton and Weiss's (2009) scale items, it appears that this is the case. For instance, the item 'I will do things even though they seem to be dangerous' seems to directly measure risk taking, and does not include any other components of courage as defined by Rate et al. (2007). Therefore, it appears that Norton and Weiss's (2009) the CM does not actually measure courage, but it possibly measures risk taking or another closely related construct. For this reason, the current article will refer to the CM as simply Norton and Weiss's (2009) measure. This is done to also avoid any biases in further analyses of the measure.

Before continuing to address psychometric and construct validity concerns, one last note should be made. Two items are included within Norton and Weiss's (2009) measure that seem to almost certainly gauge courage. These are 'I act in a courageous way,' and 'Other people describe me as courageous' (Norton & Weiss, 2009, p. 10). Although they appear extremely face valid, they may not actually measure courage when in the context of the scale. As many other authors have shown, courage is a fairly ambiguous term (Rate et al., 2007; Woodard & Pury, 2007), and many individuals ascribe varying definitions to the construct. When answering the two questions listed above, respondents may have entirely different conceptualizations of courage. One respondent may answer in accordance to Norton and Weiss's (2009) chosen definition, another to Rate et al.'s (2007) definition, and yet others may use a different conceptualization. It is also possible that individuals may answer these two questions in relation to their other answers. That is, since courage is an ambiguous term and the respondent may be unsure about its exact definition, they will look towards the other questions to determine the appropriate interpretation. This phenomenon has been shown in a variety of related studies (Roediger & McDermott, 1995, 2000). Thus, although these two questions seem to be face-valid measures of courage, they may actually just be reflections of the other questions administered in Norton and Weiss's (2009) measure.

Given these considerations, it seems that Norton and Weiss's (2009) measure has concerns over its construct validity, and a reanalysis is needed.

Research Question 1: Does Norton and Weiss's (2009) measure actually measure courage?

4. Psychometric concerns

In addition to theoretical concerns with Norton and Weiss's (2009) scale, some psychometric concerns should also be addressed. Notably, the interpretation of their factor analysis warrants attention. Although their sample size was well above the recommended amount, the explanation of their determined number of factors was brief. Their only mention of its interpretation is, '... the number of factors to retain was determined by scree plot examination and factor interpretability. Examination of the scree plot supported a unifactorial solution ...' (Norton & Weiss, 2009, p. 215). While scree plot examination to determine a scale's factor structure is common in scale development (Kaiser, 1958; Yeomans & Golder, 1982), it is best practice to report the eigenvalues to defend any judgments. Unfortunately, since these values were not reported, the number of factors within Norton and Weiss's (2009) measure is still uncertain. For this reason, the current study will independently investigate the factor structure of the measure.

Research Question 2: What is the number of factors within Norton and Weiss's measure?

Additionally, several scale development authors have shown a particular interest in the method effects of their scale (Ferris, Brown, Berry, & Lian, 2008; Watson, Clark, & Tellegen, 1998). The simple survey research design is susceptible to numerous systematic biases, and some scales are more vulnerable to these biases than others. Most often, authors analyze the effects of socially desirable responding (Palhus, 2002) and affect (Kercher, 1992; Mackinnon et al., 1999). Socially desirable responding can skew survey results through conscious changes to participant survey answers, especially when a scale measures a socially desirable trait. This is particularly concerning for Norton and Weiss's (2009) measure, as many questions are socially desirable. For instance, many individuals would like to indicate that they would, 'face their fears' (Norton & Weiss, 2009, p. 10). Also, affect can subconsciously alter participant responses. Although Norton and Weiss's (2009) measure does not pose any particular concern with affect, it is still important to determine the extent this systematic bias effects the measure. If these sources of systematic error are shown to drastically affect the scale, they would likely need to be statistically controlled in future studies or an entirely new scale may need to be made. Therefore, the current study is interested in discovering the extent that method effects impact responses to Norton and Weiss's (2009) measure.

Research Question 3: How much do method effects (i.e. social desirability, positive affect, and negative affect) impact Norton and Weiss's measure?

5. Construct validity concerns

Finally, although Norton and Weiss (2009) provided superb evidence for their scale's criterion-related validity, no other types of validity were examined. When creating a new scale, the nomological network surrounding the construct should be analyzed concurrently with the measure, to ensure that it has expected relationships with other constructs. If a measure is shown to have these expected relationships, then it can soundly be used as a measure for that construct. Conversely, if it does not demonstrate these expected relationships, then its validity may be weak and the scale may be an inaccurate representation of the construct of interest. To date, no article has investigated Norton and Weiss's (2009) scale to ensure it has relationships with other constructs that would be expected from a CM. An analysis of these relationships would provide support for whether the scale actually measures courage or risk taking.

Research Question 4: What is the construct and discriminant validity of Norton and Weiss's scale?

Particularly, the current study is interested in Norton and Weiss's (2009) scale's relationship with risk taking, prosocial motivation, and the Big Five. Risk taking was chosen due to the argument made above; Norton and Weiss's (2009) measure was created using a definition that closely resembles a definition for risk taking, and thus it may be important to investigate the scale's relationship with an existing measure of risk taking. If the correlation is exceedingly high, then the measure would almost assuredly measure risk taking. Next, prosocial motivation was chosen due to its theoretical relationship with a more accepted courage definition (Rate, 2010; Rate et al., 2007). Rate's (2010) courage definition requires a courageous behavior to be for 'a noble good or worthy end.' Although behaviors with largely personal benefits (ex. recovering from trauma) are often considered courageous, several authors have noted that prosocial behaviors can also be courageous behaviors. In fact, prosocial courageous behaviors have been argued to occur more regularly and are more voluntary than those performed for largely personal reasons (Pury, 2008; Woodard & Pury, 2007). For these reasons, measuring prosocial motivation is important to infer the concurrent validity of any CM. Although Norton and Weiss's (2009) measure was not built upon this definition, it is still important to understand whether the measure is still in adherence to the definition. Finally, the Big Five were analyzed concurrently with the measure. The Big Five is the most widely used model of personality, and has repeatedly been demonstrated to be valid. For any

personality-related construct, it is important to demonstrate that it is distinct from the Big Five. Therefore, the Big Five will serve as a measure of discriminant validity in the current article.

6. Methods

6.1. Participants

For the current study, 210 participants were recruited from an undergraduate student pool, and their participation was rewarded with a small amount of course credit. Participants' average age was 19.9 (SD = 4.04), and they were largely female (73%). Also, the sample was largely Caucasian (71%), but other ethnicities were also represented (10% African-American, 10% Asian, 9% other).

6.2. Measures

The CM – For the current study, Norton and Weiss's (2009) scale was administered. This scale is described above, and its Cronbach's alpha for the current study was 0.87.

Positive and Negative Affect – Watson, Clark, and Tellegen's (1988) Positive and Negative Affect Schedule was used to assess positive and negative affect. This is the most widely used measure of positive and negative affect in organizational research (Kercher, 1992; Mackinnon et al., 1999). Participants were requested to respond based on how they feel 'at the present moment.' The Cronbach's alpha for positive affect in the current study was 0.91, and negative affect was 0.91.

Social Desirability – Palhus's (1991) 20-item Impression Management Scale was administered to gauge social desirability. This scale has been used frequently in scale development studies to analyze the biasing effect of social desirability (Ferris et al., 2008). An example question is 'There have been occasions when I have taken advantage of someone.' In the current study, the Cronbach's alpha of this measure was 0.82.

Risk Taking – Westaby and Lee's (2003) measure of global risk taking was administered. A sample item is, 'I value having fun more than being safe.' In the present study, the Cronbach's alpha of this scale was 0.82.

Prosocial Motivation – Two scales were combined to form a single prosocial motivation scale. These scales were adapted from Grant's (2008) four-item measure and Goodman, Meltzer, and Bailey's (1998) five-item measure. An exploratory factor analysis (EFA) using principal axis factoring and a direct oblimin rotation demonstrated that the combined scale was certainly unitary using a visual scree plot analysis and the Kaiser criterion (Eigenvalues = 6.415, 0.830, 0.447 ...), and all items loaded very well (factor loadings > 0.75). This measure had a Cronbach's alpha of 0.95.

Big Five – Extraversion, openness to experience, and neuroticism were measured using Saucier's (1994) Mini-Markers. This measure consists of 40 items when measuring all five dimensions of the Big Five, with eight items measuring each construct. The extraversion, openness to experience, neuroticism, conscientiousness, and agreeableness subscales had reliabilities of 0.82, 0.78, 0.78, 0.83, and 0.84, respectively.

7. Results

First, an EFA using a direct oblimin rotation was performed on Norton and Weiss's (2009) scale. To determine the appropriate number of factors to extract, a parallel analysis was used. This method is more robust than other techniques, such as a visual scree plot analysis or Keiser criterion, and has been suggested by a large number of psychometricians (Hayton, Allen, & Scarpello, 2004; Glorfeld, 1995). To perform the parallel analysis, a program provided by Patil, Singh, Mishra, and Donovan (2007) was used. For the analysis, 1000 random correlation matrices were generated, specifying 210 participants, 12 variables, and 1000 seeds. A graph displaying an overlay of the resulting scree plot and parallel analysis is presented in Figure 1, and a chart comparing the eigenvalues is presented in Table 1. To determine the appropriate number of factors to retain from a parallel analyses, the point before the two analyses' values intersect should be chosen. For the current analysis, this value was two. Therefore, the parallel analysis indicates that Norton and Weiss's (2009) scale consists of two factors.

When analyzing the two factor solution, it seems that the factors are split between regular- and reverse-coding. Most of the reverse-coded items do not load (<0.30) onto the primary factor, insinuating that they should be removed. With these items removed, a EFA using princi-

pal axis factoring with a direct oblimin rotation on the regular-coded items revealed a strong unidimensional solution supported by a visual scree plot analysis, the Keiser criterion, and a parallel analysis using the same parameters as above except only eight variables (Scale eigenvalues = 4.242, 0.918, 0.647, 0.619; Parallel Analysis Eigenvalues = 1.396, 1.257, 1.158, 1.075). All items also loaded well onto this primary factor (>0.40). Factor loadings of the two EFAs are presented in Table 2, labeled as Reduced Measure 1. Therefore, it appears that while Norton and Weiss's (2009) original scale is two-dimensional, it becomes a unidimensional measure when the reverse-coded items are removed. Additionally, when the reversed coded items are removed, the overall Cronbach's alpha is only reduced from 0.870 to 0.867. This is a minimal change in reliability.

Furthermore, a separate analysis was performed on the reduced Norton and Weiss (2009) scale with an additional two items removed. These two items were those which specifically mentioned courage in the items. Once again, an EFA using principal axis factoring with a direct oblimin rotation on the regular-coded items revealed a strong unidimensional solution supported by a visual scree plot analysis, the Keiser criterion, and a parallel analysis using the same parameters as above except only six variables (Scale eigenvalues = 3.224, 0.768, 0.615, 0.593; Parallel Analysis Eigenvalues = 1.229, 1.119, 1.034, 0.957). The resultant factor loadings are also presented in Table 2, labeled as Reduced Measure 2. The reliability of this further reduced measure was 0.82, and the removal of these two items also incurs minimal negative effects to the psychometric properties of Norton and Weiss's (2009) measure. The Reduced Measure 2 is presented in Appendix 1.

Next, the relationship of Norton and Weiss's (2009) scale with method effects was analyzed. The correlations of these measures are presented in Table 3. As apparent

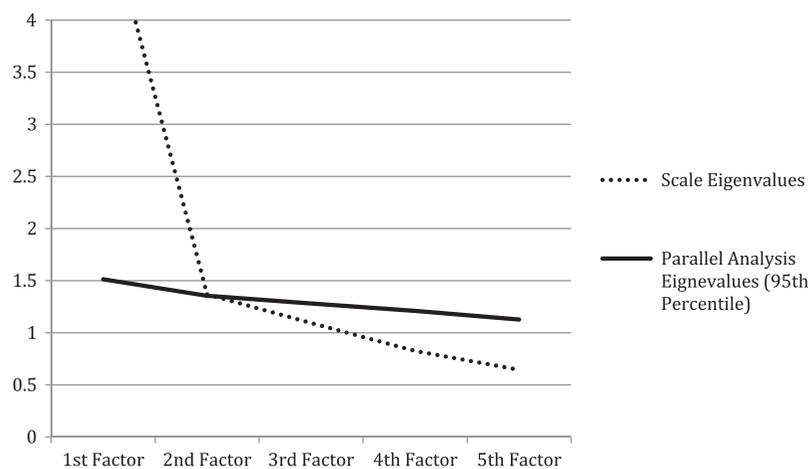


Figure 1. Results of parallel analysis on Norton and Weiss's (2009) original measure.

Table 1. Results of parallel analysis on Norton and Weiss's (2009) original measure.

	Scale eigenvalues	Parallel analysis eigenvalues (95th percentile)	Difference
1st Factor	5.169	1.513	3.656
2nd Factor	1.369	1.355	0.014
3rd Factor	1.094	1.281	-0.187
4th Factor	0.825	1.210	-0.385
5th Factor	0.645	1.127	-0.482

Table 2. Pattern matrix of an exploratory factor analysis using principal axis factoring with direct oblimin rotation results of original and Reduced Measures 1 and 2.

Item number	Original measure		Reduced Measure 1	Reduced Measure 2
	Factor 1	Factor 2	Factor 1	Factor 1
Item 1	0.711		0.748	0.716
Item 2*		0.856	Removed	Removed
Item 3	0.501		0.543	0.584
Item 4*		0.728	Removed	Removed
Item 5**	0.682		0.697	Removed
Item 6*	0.429	0.309	Removed	Removed
Item 7	0.607		0.572	0.521
Item 8**	0.780		0.757	Removed
Item 9	0.696		0.727	0.757
Item 10	0.643		0.550	0.576
Item 11	0.753		0.820	0.829
Item 12*			Removed	Removed

Note: Only factor loadings above 0.30 are presented.

*Reverse-coded items.

**Items which specifically mention courage.

from the table, Norton and Weiss's (2009) scale had small to moderate correlations with social desirability, positive affect, and negative affect. A regression analysis showed that these three method effects account for 11% of the variance in the scale ($F=8.271$; $p<0.0001$). Together, these results are not alarming; however, these method effects have notably smaller correlations with the first and second reduced scales, also evident in Table 3. A regression analysis on Reduced Scale 1 showed that the three method effects only account for 8% of its variance ($F=5.708$; $p<0.001$). Another regression analysis on Reduced Scale 2 showed that the three method effects only account for 7% of its variance ($F=4.975$; $p<0.01$). This is a reduction of about 25%. Therefore, Norton and Weiss's (2009) scale does not have large concerns over its relationships to method effects, but the reduced versions of the scale are certainly improvements in this area.

Finally, the relationship of Norton and Weiss's (2009) scale to theoretically similar and dissimilar variables was analyzed, and these correlations are

presented in Table 3. As apparent from the table, the original, Reduced Measure 1, and Reduced Measure 2 had their highest correlation with risk taking (0.45, 0.48, and 0.48, respectively; all $p<0.01$). Also, the original, Reduced Measure 1, and Reduced Measure 2 had small to moderate correlations with prosocial motivation (0.24, 0.28, 0.27; all $p<0.01$), openness to experience (0.22, 0.24, and 0.25; all $p<0.01$), and extraversion (0.32, 0.28, and 0.26; all $p<0.01$). Lastly, the original, Reduced Measure 1, and Reduced Measure 2 had non-significant correlations with neuroticism (-0.11, -0.04, and -0.05; all $p>0.05$), conscientiousness (0.06, 0.02, and 0.02; all $p>0.05$), and agreeableness (0.05, 0.06, and 0.05; all $p>0.05$).

8. Discussion

The purpose of the current study was to provide a theoretical and empirical analysis of Norton and Weiss's (2009) scale. The results show that the scale is not unidimensional, but separated by the coding of items (regular- and reverse-coding); however, the removal of reverse-coded items forms a unidimensional measure with a virtually unchanged internal consistency. The removal of these reverse-coded items also lessens the impact of method effects on the scale, notably affect and social desirability. Lastly, the scale was shown to strongly correlate with risk taking; moderately correlate with prosocial motivation, openness to experience, and extraversion; and weakly correlate with neuroticism. Together, these results have powerful implications.

First, it is suggested that future researchers using Norton and Weiss's (2009) measure should not include their reverse-coded items. Almost all aspects of the scale were improved or remained unchanged with the removal of these items, and no negative outcomes were seen. Additionally, the scale demonstrated similar psychometric properties and relationships with other constructs when items specifically mentioning courage were removed. Given that Norton and Weiss's (2009) measure may not actually measure courage (as further noted below), the removal of these items may lessen construct confusion. Therefore, it is suggested that these items should be removed when using Norton and Weiss's (2009) measure.

Second, method effects do not seem to be a large concern with the scale, especially when using the reduced versions. Other commonly used scales have been shown to have much larger relationships with affect and social desirability (Weber, Blais, & Betz, 2002). Thus, it does not seem to be a requirement to control for these method effects when administering Norton and Weiss's (2009) measure or reduced versions.

Third, Norton and Weiss's (2009) measure gages a unique facet of personality, which is largely separate

Table 3. Correlations of all variables measured.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Original measure	0.87												
2. Reduced Measure 1	0.94**	0.87											
3. Reduced Measure 2	0.92**	0.98**	0.82										
4. Positive affect	0.21**	0.19**	0.15*	0.91									
5. Negative affect	-0.18**	-0.15*	-0.17*	0.24**	0.91								
6. Social desirability	0.11	0.06	0.02	0.05	0.00	0.82							
7. Risk taking	0.45**	0.48**	0.48**	0.24**	0.13	-0.27**	0.82						
8. Prosocial motivation	0.24**	0.28**	0.27**	0.09	-0.34**	0.13	0.04	0.95					
9. Openness	0.22**	0.24**	0.25**	0.14*	-0.16*	-0.18**	0.23**	0.39**	0.78				
10. Extraversion	0.32**	0.28**	0.26**	0.17*	-0.16*	-0.03	0.18*	0.35**	0.15*	0.82			
11. Neuroticism	-0.11	-0.04	-0.05	-0.00	0.39**	-0.30**	0.15*	-0.15*	0.10	-0.12	0.78		
12. Conscientiousness	0.06	0.03	0.02	0.21**	-0.34**	0.27**	-0.24**	0.38**	0.11	0.21**	-0.31**	0.83	
13. Agreeableness	0.05	0.06	0.05	0.10	-0.40**	0.14*	-0.17*	0.67**	0.28**	0.23**	-0.25**	0.47**	0.84

Note: Reliabilities are presented on the diagonal.

* $p < 0.05$.** $p < 0.01$.

from the Big Five. This provides further support for the use of the measure, as it is distinct from other often used personality constructs.

Fourth, and most importantly, information about the scale's construct validity was demonstrated. The current article argued that Norton and Weiss's (2009) measure may actually gauge risk taking, rather than courage. The correlation of the scale with risk taking was strong, according to accepted standards (Cohen, 1992); however, it was not large enough to argue for the scale's convergent validity. That is, the correlation does not insinuate that Norton and Weiss's (2009) measure and the administered risk taking measure gauge the same construct. Given this, it appears that the scale measures something other than risk taking, but whether it measures courage should still be considered.

Courage, according to recently accepted definitions (Rate, 2010; Rate et al., 2007), consists of risk taking and prosocial motivation. Norton and Weiss's (2009) measure was shown to moderately correlate with prosocial motivation, which could give partial support to the scale's measurement of courage; however, the scale also had comparable correlations with three dimensions of the Big Five, including a stronger correlation with extraversion. Given that prosocial motivation is a core aspect of courage, any CM should surely correlate stronger with prosocial motivation than any dimension of the Big Five. Therefore, while the Norton and Weiss (2009) scale's correlation with prosocial motivation could give support for its measurement of courage, its comparison with other correlations makes it an insufficient marker of concurrent validity.

Given that Norton and Weiss's (2009) measure does not measure courage or risk taking, what does it measure? It is possible that the scale measures a construct that has not been clearly defined in psychological literatures. Risk taking is commonly defined as, 'the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure' (Brockhaus, 1980). Inherent in this definition is the danger of failure, which is often thought to evoke fear; however, it is possible that not all dangerous activities evoke fear for everyone. For example, one individual may be terrified at the thought of rock climbing, while another takes great pleasure in the activity. Alternatively, the operational definition Norton and Weiss (2009) used for the creation of their scale, 'persistence or perseverance despite having fear,' explicitly targets the continuation of effort when fear is felt. Those who are high in risk taking possibly never feel fear and perform actions, whereas those high in 'persistence or perseverance despite having fear' feel fear but continue their efforts. Therefore, it appears that

Norton and Weiss's (2009) scale measures a construct separate from both courage and risk taking.

8.1. Persistence despite fear

The current article calls this construct persistence despite fear (PDF), defined as the continuation of effort despite the subjective feeling of fear. This construct is separate from courage, because it does not mandate prosocial motivation or necessary contemplation of actions. Also, it is separate from risk taking, because it mandates fear when performing actions, whereas fear is not necessary in risk taking. In risky behaviors, fear is possible (or even likely), but it is not a mandated component to label a behavior as risky; however, for an individual to persist despite fear, he/she must experience the subjective feeling of fear. PDF is its own personality trait that, in the current study, was shown to be discriminant from existing, similar measures. Therefore, PDF should be able to predict certain outcomes above and beyond existing personality measures, as well as support other important implications for research and practice.

For instance, several authors have shown interest in the role of courage, persistence, and other related constructs in overcoming phobias (e.g. Norton & Weiss, 2009; Rachman, 1990; Schmidt & Koselka, 2000). Although past research has shown mixed findings when examining the relationship between courage and overcoming phobias, focusing on PDF may be more fruitful. Little, if any, prosocial motivation is needed when overcoming a phobia, which causes a primary factor of courage to become irrelevant; however, PDF does not contain a prosocial aspect. Also, risk taking alone may not be the most appropriate construct to consider for overcoming phobias, as an individual may be risky, in general, but stray away from fearful activities. Alternatively, PDF directly relates to overcoming phobias, as preliminarily shown in Norton and Weiss's (2009) initial study. Therefore, PDF may be a potential source for future investigation, and research on PDF may aid mental health practitioners in predicting who will benefit from treatments designed to help with phobias and anxiety disorders, such as exposure therapy.

PDF may be important to consider in the context of psychotherapy, as facing one's fears may be a mandatory component of the process (Bacha, 2001; Gans, 2005). As one strives for recovery, uncomfortable facts must be confronted, which may be associated with great trepidation and anxiety (Pury & Lopez, 2010). In group therapy, fearing rejection from the group or conductor may limit or even prevent participation entirely (Bacha, 2001; Gans, 2005), and this may impact the likelihood of positive outcomes. However, facing such discomforts despite fear may help to promote therapeutic change (Bacha, 2001;

Pury & Lopez, 2010), which may positively impact levels of depression, social maladjustment, self-blame, and post-traumatic stress (Morgan & Cummings, 1999).

More generally, the created definition for PDF, the continuation of effort despite the subjective feeling of fear, is almost identical to Rachman (1990) and other's (Cogle & Hawkins, 2013; Norton & Weiss, 2009) chosen definition of courage. Although the current article demonstrated that this definition may not accurately define courage, it has several previously theorized antecedents and outcomes. This basis of literature is an important starting point to understand the cognitive, emotional, and behavioral basis for the construct, as well as its potential effects on individuals and society. For instance, Courgle and Hawkins (2013) demonstrated that priming individuals with certain words causes them to become more likely to persist despite the subjective feeling of fear. This finding can lead researchers to discover other instances which priming can elicit PDF, which can lead to other positive outcomes. Future studies should certainly follow previous authors' findings, and build upon the previous literature that utilized Rachman's definition of courage.

Additionally, the current study gave support for an initial measure of PDF, which is a reduced version of Norton and Weiss's (2009) measure. Future investigations into this construct should certainly use this six-item measure; however, it is of paramount importance to understand whether this scale adequately measures PDF. Although preliminary support was given, many aspects remain unknown, and improvements could surely be made. For example, it would likely be easy to improve the reliability of either reduced measure by adding additional items. With future administrations of this six-item measure, it is highly suggested to use alternative instructions than the CM. The CM's original instructions explicitly mention the measurement of courage. This wording could bias participant responses when measuring PDF, and alternative wording would be more appropriate.

Lastly, now that PDF has been identified, a nomological net and theoretical framework can be created around the construct. As mentioned, Norton and Weiss's (2009) measure has already been shown to be related to several significant outcomes. These initial studies should be reinvestigated to understand the relationship of PDF with other constructs. Also, future studies should collect preliminary evidence for the construct's relationship with other personality variables beyond the Big Five to ensure its uniqueness. Finally, since PDF has already been shown to relate to several useful outcomes, it may be useful to discover methods to elicit PDF in individuals, and investigate potential moderators that may strengthen PDF's relationships.

8.2. Limitations

Although the current study provides several benefits, some limitations should be noted. First, the current study used a single-survey research design. Several biases exist when using this method, and no causal claims can be made; however, the current study was an in-depth investigation into a certain scale, which demanded the use of this particular research design. Although it was largely unavoidable for these biases to occur in the current study, future research should certainly seek other research designs when further investigating Norton and Weiss's (2009) measure and PDF. Second, the present study's sample was predominantly Caucasian (71%) and female (73%). Thus, the greater number of Caucasians and females in our sample may limit the validity of our results for ethnic/racial minorities and males. However, because Norton and Weiss's sample was not composed of any males, our sample may be more generalizable to gender-diverse populations. Additionally, future researchers may provide insight regarding the generalizability of these findings by attempting to replicate the current study's factor structure and scale reliabilities in other independent samples. Third, the present study's sample consisted entirely of American undergraduate students. While this is the same type of sample used in Norton and Weiss's study, it may not be representative of all populations. Fourth, factor analysis may be considered a somewhat subjective technique in regard to identifying factors. However, the current study followed strict guidelines from other psychometricians in regard to appropriate methods of analysis (Glorfeld, 1995; Hayton, Allen, & Scarpello, 2004; Patil et al., 2007). In general, the aforementioned issues are not uncommon when refining scales. According to Crespi and colleagues (2008), developing instruments 'requires a concerted, iterative process to arrive at well-validated tools' (p. 1540).

9. Conclusion

According to Price and Mueller (1986), ensuring valid measures is extremely important for testing relationships and evaluating findings. Proper operationalizations may prevent inaccurate inferences from data that may mislead researchers and obscure empirical reality. The results of the current study demonstrated several theoretical and psychometric concerns with Norton and Weiss's (2009) measure, but these concerns can largely be remedied through reducing the scale and reconceptualizing its intended measured construct. Also, the present study not only helps researchers better discern between courage, risk taking, and PDF, but it also helps researchers operationalize these constructs more appropriately.

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Appendix 1. Reduced Version 2 of Norton and Weiss's (2009) measure

- (1) I tend to face my fears.
- (2) Even if I feel terrified, I will stay in the situation until I have done what I need to do.
- (3) I will do things even though they seem to be dangerous.
- (4) If I am worried or anxious about something, I will do or face it anyway.
- (5) If there is an important reason to face something that scares me, I will face it.
- (6) Even if something scares me, I will not back down.