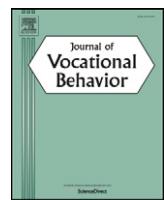




Contents lists available at ScienceDirect

## Journal of Vocational Behavior

journal homepage: [www.elsevier.com/locate/jvb](http://www.elsevier.com/locate/jvb)



# Subjective well-being at work: Disentangling source effects of stress and support on enthusiasm, contentment, and meaningfulness



Matthew J. Monnot <sup>a,\*</sup>, Terry A. Beehr <sup>b</sup>

<sup>a</sup> University of San Francisco, USA

<sup>b</sup> Central Michigan University, USA

## ARTICLE INFO

### Article history:

Received 4 May 2014

Available online 23 July 2014

### Keywords:

Subjective well-being

Meaningfulness

Workplace stress

Status

Social support

## ABSTRACT

The experience of meaningfulness in one's work is an important predictor of individual and organizational outcomes. We advance a model of nonhedonic (i.e., meaningfulness) subjective well-being (SWB), to assess the potential impact of work role stress (specified by source) in this new model of SWB, and examine the direct and indirect effects of potentially supportive communication (specified by source and type of support). Item Response Theory (IRT) and Classical Test Theory (CTT) frameworks confirmed the proposed factor structure of SWB. Results suggest that positional status of the source of stress determines the magnitude of effect. Specifically, supervisors who are sources of role stressors have the largest negative impact on SWB. Alternatively, social support had the largest positive effect on SWB when the source was a supervisor and communication type was positive or non-work related. In addition, role stressors and communication from supervisors have the strongest direct effect on nonhedonic SWB. Unexpectedly, communication wherein content was negative had the strongest effect when source was a co-worker, followed by the subordinate. Finally, positive communication with coworkers attenuated the effect of supervisor role stress on one dimension of SWB (enthusiasm). Overall, supervisors have a strong ability to affect subordinates' SWB, particularly in terms of meaningfulness.

© 2014 Elsevier Inc. All rights reserved.

## 1. Introduction

The increasing recognition and popularity of positive psychology (Sheldon & King, 2001) has led organizational researchers to investigate employee happiness and other positive emotions (e.g., Luthans, 2002). Applied to health and well-being of workers, positive psychology suggests that well-being is something other than simply the absence of illness. There exists, however, a dichotomy in the definition of well-being. One approach is the *hedonic* view of well-being and emphasizes such experiences as pleasure, happiness, satisfaction, and the presence of a positive mood (Diener, 1984; Kahneman, Diener, & Schwarz, 1999); this approach has dominated the work and well-being literature (Diener, Suh, Lucas, & Smith, 1999). The other view of well-being emphasizes experiences of greater depth such as *meaning* (Jim, Purnell, Richardson, Golden-Kreutz, & Andersen, 2006; Schnell & Becker, 2006; Steger, Frazier, Oishi, & Kaler, 2006; Weems, Costa, Dehon, & Berman, 2004), purpose (Jim et al., 2006; Reker, 1992; Steger et al., 2006; Weems et al., 2004), importance (Weems et al., 2004), fulfillment (Reker, 1992), and eudaimonia (Waterman, Schwartz, & Conti, 2008). The current study investigates psychological well-being at work and primarily helps to develop the usefulness of the second approach: examining the sense of meaningfulness that employees experience at work. Whereas most previous research on the

\* Corresponding author at: School of Management, University of San Francisco, San Francisco, CA 94117, USA.  
E-mail address: [mjmonnot@usfca.edu](mailto:mjmonnot@usfca.edu) (M.J. Monnot).

experience of meaningfulness emphasizes cognitive evaluation of one's life in general, the current study extends prior theory by increasing our understanding of nonhedonic subjective well-being at work (Rosso, Dekas, & Wrzesniewski, 2010). Designing jobs that enhance feelings of purpose or significance can dramatically enhance individual outcomes and performance (e.g., Grant, 2012). Not only has meaningful work gained popularity among scholars (see Dik, Byrne, & Steger, 2013), but practitioners suggest that meaningful experience at work is a common feature among the most successful and innovative companies (Bain, 2007).

Previous researchers have obfuscated the topics of meaning and meaningfulness by using them interchangeably. Meaning is an outcome of having made sense of something, such as when an individual employee interprets what one's work or organizational life connotes (Gray, Bougon, & Donnellon, 1985). Meaningfulness refers to the magnitude or amount of significance one feels (Pratt & Ashforth, 2003). Two individuals may assign the same meaning to a work activity and yet differ in the valence of meaningfulness. There have been numerous studies of meaning at work (e.g., MOW (Meaning of Work) International Research Team, 1987) and more recently meaning associated with objective virtue of work (Kashdan, Biswas-Diener, & King, 2008). The measurement of meaningfulness, however, as it relates to subjective well-being (SWB) has received relatively little attention (e.g., Ryff, 1989), and, therefore the present research contributes to our understanding of this type of well-being. These two studies advance a new model of SWB, assess the impact of role stress on this model, and test boundary conditions of the model by examining moderating variables. First, measurement qualities of the hypothesized components of SWB were assessed. This first step was intended to create a brief psychometrically appropriate assessment of hedonic and non-hedonic SWB. Next, relationships of work-related stressors with these different types of SWB were examined. Finally, social support as both a direct correlate of SWB and a moderator of the stressor and SWB relationship was tested.

## 2. Subjective well-being

Hedonic SWB has typically been assessed by asking respondents to report their own affective state, often conceived of as having two orthogonal components; arousal and pleasure (Russell, 1980; Warr, 2006). Thus, SWB can be explained by a two-dimensional circumplex, with arousal being the y-axis and satisfaction being the x-axis (Green, Goldman, & Salovey, 1993; Remington, Fabrigar, & Visser, 2000; Russell, 1979; Yik, Russell, & Barrett, 1999). Conceptually, this results in two hedonic forms or dimensions of SWB (i.e., satisfied-aroused and satisfied-calm). We propose that a more comprehensive model involves a three-dimensional model wherein meaningfulness is represented by a z-axis. This axis represents SWB as the experience of meaningfulness rather than hedonic fulfillment.

### 2.1. Employee subjective well-being: experience of meaningfulness at work

Thus the present study offers an extension of the circumplex of SWB, heeding a call (Remington et al., 2000; Warr, 2006) for exploration of new models to account for additional types of affect that do not fit the current model well. The importance of this additional component of employee well-being is central to numerous early theories of human behavior and has been referred to as meaning (Crumbaugh, 1968), coherence (Antonovsky, 1993), and self-actualization (Maslow, 1943), as well as related beliefs, values, and attitudes (Brief & Nord, 1990; Gomez & Fisher, 2005; Nord, Brief, Atieh, & Doherty, 1990; Ros, Schqartz, & Surkiss, 1999).

Previous studies of nonhedonic well-being measures have shown promising external validity, displaying convergent validity with related constructs and the ability to predict individual distress (Debats, van der Lubbe, & Wezeman, 1993). Scores on perceived meaningfulness have been found to positively relate to ultimate life goals (Battista & Almond, 1973), integration of personality (Orbach, Iluz, & Rosenheim, 1987), effective coping (Debats et al., 1993), and other measures of well-being (Debats, 1990, 1996; Zika & Chamberlain, 1992). More recent results have supported earlier findings on the convergent and discriminant validity of hedonic and non-hedonic well-being (Triado, Villar, Sole, & Celdran, 2007). These studies have examined general rather than domain specific well-being however; the current study builds on that general psychological research of meaningful experience by investigating this new dimension of SWB in the workplace.

Therefore, the current study assesses the viability of a three-dimensional circumplex of SWB: two established hedonic dimensions (contentment and enthusiasm) and a new nonhedonic dimension (meaningfulness). Although hedonic and nonhedonic well-being are conceptually distinct they are likely to be related to each other, because multiple positive states are likely to be experienced together. In terms of the hedonic space of the model, the off-axes of enthusiasm (high in activation and high positive valence) and contentment (low in activation and high positive valence) are measured. These factors are congruent with previous research (Warr, 1990). A third, non-hedonic SWB construct is developed and confirmed in the present study.

**Hypothesis 1.** Data will support three dimensions of subjective well-being: two hedonic (contentment and enthusiasm), and one non-hedonic (meaningfulness).

## 3. Social support: sources and contents of communications

Research findings regarding the relationship of social support to psychological well-being are complex. The degree of social support an employee receives is typically related to individual well-being, but support sometimes interacts with stressors to produce ambiguous results (e.g., Beehr, Farmer, Glazer, Gudanowski, & Nair, 2003; Beehr, King, & King, 1990). Some research finds buffering interactions in which the positive relationships between stressors and outcomes are weaker under conditions of higher social support, whereas other findings suggest nonsignificant interactions (e.g. La Rocco, House, & French, 1980; Wade & Kendler, 2000), and yet

others report “reverse buffering” in which the relationships between stressors and outcomes are actually stronger under conditions of higher social support (e.g., Fenlason & Beehr, 1994; Glaser, Tatum, Nebeker, Sorenson, & Aiello, 1999; Kaufmann & Beehr, 1986). Support is often characterized as forms of communication between employees, and therefore in the present study we examined differences in types of contents of communications among individuals in the workplace (e.g., Beehr et al., 1990; Zellars & Perrewé, 2001).

### 3.1. Source of support

Inconsistent research results on the effects of social support on well-being at work may be due the particular source of social support. After finding only limited support for hypothesized effects of congruence of sources of support and stress on well-being, one group of researchers (Beehr et al., 2003) commented on the possible importance of the source itself. Specifically, the influence that the source holds due to positional status (Raven, 1992, 1993) determines the strength of the signal. For example, support received from one's supervisor may be more effective than support received from one's coworkers or subordinates, because of the differences in their position. The overall principle is that social support emanating from those higher in the organization will show stronger effects on individual well-being. Supervisor and coworker support tend to be significantly correlated with well-being (Stetz, Stetz, & Bliese, 2006; Viswesvaran, Sanchez, & Fisher, 1999), with supervisor support correlations being stronger (Balshem, 1988; Beehr et al., 2003; Viswesvaran et al., 1999). One intuitive explanation for this relationship is that the source of social support that is most influential in terms of workplace operations (e.g. work schedules, rewards, and punishment) is also most directly influential in terms of well-being. Supervisors may be more influential on subordinates' well-being because their supervisor can determine their work-related responsibilities and some of their other working conditions. Previous research on workplace social support examined primarily supervisor and coworker support (Viswesvaran et al., 1999). A contribution of the present analysis is the inclusion of subordinate support, which allows a more complete examination of the organizational hierarchy as a factor in determining the helpfulness of support.

**Hypothesis 2.** The positive relationship between communication (i.e., positive and non-work related) and well-being will be strongest when the source of support is higher in the organizational hierarchy (i.e., support from the supervisor will have the strongest relationship, followed by support from coworkers, and finally by support from subordinates).

### 3.2. Content of potentially supportive communication

When employees interact with each other in the workplace, the tone of the conversation is likely to be a key factor in how well they support each other and subsequently affect each other's well-being (e.g., Zellars & Perrewé, 2001). Three types of contents of communications during potentially supportive interactions may have differing influences on employees' well-being: talking about positive parts of work, about negative parts of work, and about nonwork related events (e.g., Beehr et al., 1990; Kahn, Schneider, Jenkins-Henkelman, & Moyle, 2006). Previous research shows that the strongest main effect of supervisor social support on employee attitudes and strains (psychological ill health or well-being) occurred when social support was of a positive work-related nature (Stephens & Long, 2000). Additionally, not only did contents of employee communications with each other account for more variance in outcomes (i.e., job dissatisfaction, job boredom, depression, and anxiety) than more general measures of emotional and instrumental social support did, but they also showed more pronounced moderation of the stressor-strain relationship (Fenlason & Beehr, 1994; Kahn et al., 2006). Thus communications people have with each other during potentially supportive episodes might be crucial for the effects that support has.

Positive communications about work have a significant positive correlation with life satisfaction. Talking with others about the negative parts of work, on the other hand, showed significant positive correlations with work anxiety (Chen, Popovich, & Kogan, 1999). It is expected that the contents of supportive interactions will again have different direct relationships with individual outcomes. Negative communication about the job is not expected to display a positive correlation with well-being as, unlike positive and non-work related communication, it does not draw attention away from the negative job situations or negative affective states (Beehr, Bowling, & Bennett, 2010). Non-work related contents of communication are less relevant, whereas positive work-related content should lead directly to elevation of SWB.

**Hypothesis 3.** The positive relationship between communication and well-being will be strongest when communication is positive content (followed by non-work related, and then negative communication).

## 4. Role stress

The present study examines two stressors that can be directly linked to the organizational hierarchy: role conflict and ambiguity. Role ambiguity is conceptualized as both the lack of specificity of expectations and lack of predictability (Beehr, 1976; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Schuler, 1980). Alternately, in role conflict situations, the expectations from one person may be clear, but they are in competition with expectations from others (Kahn et al., 1964). As with the previous argument for social support, it is proposed that the positional status of the source of stress will magnify its impact (Raven, 1992, 1993). For example, ambiguous or conflicting expectations may be more harmful when received from one's supervisor as opposed to coworkers or subordinates. Although this has not been tested previously, it is logical due to the differences in power differentials.

**Hypothesis 4a.** The negative relationship between role ambiguity and subjective well-being will be strongest when the source of role ambiguity is one's supervisor, followed by coworker, and then subordinate.

**Hypothesis 4b.** The negative relationship between role conflict and well-being will be strongest when the source of role ambiguity is one's supervisor, followed by coworker, and then subordinate.

## 5. Social support: moderating relationships between stressors and SWB

In addition to main effect, the moderating effect (buffering) of social support on the stressor and well-being relationship also may be dependent on both content (positive, negative, and non-work related) and source (supervisor, coworker, subordinate) of support. For example attenuation of the stressor–strain relationship seems to be evident when the content of communication is positive, but amplification was found when content is negative (Fenlason & Beehr, 1994). A buffering effect of social support was found on the stressor (job insecurity)–strain (life satisfaction) relationship when the content of communication was positive and the source was coworkers, as well as when the content was non-work related and source of support was friends/family (Chen et al., 1999). Likewise, the content of positive social support with coworkers moderated the relationship between traumatic experiences and strain, attenuating the stressor–strain relationship (Stephens & Long, 2000), whereas negative contents of communication with coworkers worked in a different way, in that moderate (versus either high or low) levels weakened the stressor–strain relationship. Finally, a reverse buffering effect on the same stressor–strain relationship was seen with coworker communication that was non-work related.

Overall the empirical evidence for the moderating effect of social support, even when delineated by source, is inconsistent. The argument mentioned above regarding a direct effect of potentially supportive communication, dependent on source, is also employed here. That is, the most influential source in terms of workplace outcomes is also most directly influential in terms of moderating the relationship between stress and well-being. Comparing the effects of potentially supportive communication from multiple sources might help to clarify the mix of results from previous studies.

We focus here on the stressors that are expected to be strongest—those emanating from the supervisor. Subordinates are likely to find that the positive communication with their supervisor will more effectively buffer the relationship between environmental stressors and strain than support from coworkers and subordinates will. This is especially likely to be true when the stressors are role conflict and ambiguity (as in the present study), because the most important role sender is likely to be a supervisor who maintains higher positional power (e.g., delegating duties) (Raven, 1992, 1993). It has been argued that social support from one's supervisor may assuage concerns over conflict and ambiguity, by clarifying what it is the supervisor wants of the subordinate (Beehr et al., 2003). Likewise, and generally in accord with this logic, we expected positive coworker support to attenuate the stressor–strain relationship (Chen et al., 1999). It should be noted that subordinate communication was also measured but was not hypothesized to have a moderating effect, because support from subordinates was expected to have weakest effects of any source.

**Hypothesis 5a.** The negative relationship of supervisor role stress with subjective well-being will be moderated by positive communication with one's supervisor, such that higher levels of positive communication will attenuate the relationship between stress and subjective well-being.

**Hypothesis 5b.** The negative relationship of supervisor role stress with subjective well-being will be moderated by positive communication with one's coworker, such that higher levels of positive communication will attenuate the relationship between stress and subjective well-being.

Study 1 examines [Hypothesis 1](#) by developing a measure of SWB with three dimensions, one of which is nonhedonic. Study 2 then examines the relationships between SWB and some of its theoretical predictors (i.e., [Hypotheses 2–5a and 5b](#)).

## 6. Study 1

### 6.1. Participants

The alumni association of a Midwestern university sent a mass email, with a website link to an electronic survey, to alumni for whom they had email addresses. Respondents were asked to participate in the survey only if they were currently employed. No incentives were offered for participation and respondents were made aware that their participation was entirely voluntary and confidential. The website link remained active for 6 weeks. Respondents took an average of 27 min to complete the entire survey. A total of 3693 individuals viewed the survey instructions, 2876 took at least a portion of the survey, and 1342 completed it in its entirety. Those who completed only the well-being items were used for the first study involving scale development and only those completing the survey in its entirety were used for remaining hypothesis testing.

The first section of the questionnaire contained the SWB scales. Most respondents completed those, but many of them quit answering the questionnaire at various points after that, presumably because of survey length. The answers of those who finished all of the SWB scales but not the entire questionnaire were used as the sample in study 1 (creating a “holdout sample” of  $n = 538$ ), which examined the internal structure of the SWB variable. Demographic characteristics are not available for participants in this first sample, because demographic items were placed at the end of the survey.

## 6.2. Measures

Three measures of SWB were used in this study. The first two were hedonic, (contentment and enthusiasm), were previously validated by Warr (1990), and were designed as positive psychological measures of two widely researched types of well-being—enthusiasm/depression and contentment/anxiety. The third measure, developed for the current study, was designed to assess level of meaningfulness, a form of non-hedonic well-being.

### 6.2.1. Hedonic subjective well-being: contentment and enthusiasm

Employee contentment was measured with adjectives from Warr (1990) assessing work-related SWB in terms of contentment, or the lack of anxiety. This measure asked respondents the question, "Thinking of the past few weeks, how much of the time have you felt each of the following during work?" Descriptor choices included tense, uneasy, worried, calm, contented, and relaxed (the first three items are reverse-scored). This scale previously had an internal reliability estimate of .76 (Warr, 1990).

To assess enthusiasm, another set of adjectives from Warr (1990) were used. The measure used the same format as the contentment items but the adjectives were depressed, gloomy, miserable, cheerful, enthusiastic, and optimistic (the first three items are reverse-scored). This scale previously displayed an internal reliability estimate of .80 (Warr, 1990). Response options for both contentment and enthusiasm were on a 6-point scale ranging from "never" to "all of the time."

Factor structure of these two scales was originally supported by varimax rotated factor analysis with factor loadings ranging from .41 to .71 (Warr, 1990). Subsequent confirmatory factor analysis has shown the structure to be acceptable and invariant across time (Mäkkikangas, Feldt, & Kinnunen, 2007). Additionally, factor analysis has supported a translated version of the original instrument (Cifre & Salanova, 2002). Subsequent research has shown that these scales correlate with theoretically related individual outcomes such as intrinsic job satisfaction and engagement (Cooper-Thomas, Paterson, Stadler, & Saks, 2014; Warr, 1990). Due to empirical replication of this two-factor SWB structure Warr's (1990) scales have enjoyed widespread use in the academic literature as an indicator of well-being (e.g., Daniels, Bocock, Glover, Hartley, & Holland, 2009; Spell & Arnold, 2007).

### 6.2.2. Non-hedonic subjective well-being: meaningfulness

In order to ensure that the item styles were similar between well-being measures, the new measure of employees' meaningfulness was created using the same format as Warr's (1990) hedonic scales. Initial scale construction followed generally accepted guidelines for measure development (Hinkin, 1998). First, items were generated based on deductive analysis of previous theoretical and empirical articles emphasizing variables similar to perceived meaningfulness and existential well-being (Jim et al., 2006; Reker, 1992; Schnell & Becker, 2006; Steger et al., 2006; Weems et al., 2004). As a quality check, these items were vetted by an industrial-organizational (I-O) psychologist and a clinical psychologist for adequacy. Next, a content validity approach was utilized to determine item adequacy by asking six PhD-level I-O psychology students to classify items as contentment, enthusiasm, or meaningfulness. Hedonic well-being was defined for them as "those emotional experiences that involve pleasantness or unpleasantness. It is concerned with simple feelings of pleasure and pain, and satisfaction and dissatisfaction (i.e., hedonistic pleasure)," whereas non-hedonic well-being was defined as, "those emotional experiences that include a sense of meaningfulness or meaninglessness. It is concerned with feelings of fulfillment and despair, and a sense of deep significance and insignificance (i.e., existential pleasure)." Then, meaningfulness was defined as, "a non-hedonic form of well-being. This construct involves a deep sense of meaningfulness and fulfillment (as well as reverse-coded items)." Enthusiasm was defined as, "a hedonic form of well-being. This construct involves elevated mood in terms of excitement or activity (as well as reverse-coded items)." And finally, contentment was defined as, "a hedonic form of well-being. This construct involves a calm or relaxed mood in terms of excitement or activity (as well as reverse-coded items)."

Averages of ratings were computed (ranging from 1 – "does not apply at all" to 7 – "applies completely"). Items rated the highest (average rating of 4 or higher) in the hypothesized scales were retained. Inter-rater agreement was favorable, with intraclass correlation coefficients of .79 (meaningfulness), .96 (contentment), and .90 (enthusiasm) (Shrout & Fleiss, 1979). This process led to retaining of all of Warr's (1990) original (hedonic) items as well as sixteen meaningfulness descriptors – insignificant (reversed), pointless (reversed), meaningless (reversed), personally fulfilled, meaningful, important, valuable, purpose, virtuous, accomplished, actualized, incomplete (reversed), irrelevant (reversed), worthless (reversed), trivial (reversed), and inane (reversed). Subsequent psychometric analyses to determine item deletion, confirm factor structure, and replication are described below. The final scale response options for items used in the study were on a 6-point scale ranging from "never" to "all of the time."

## 6.3. Data analysis

An Item Response Theory (IRT) analysis was conducted using the software package IRTPRO 2.1 (Cai, Thissen, & du Toit, 2011). A graded response model (GRM) was utilized (Samejima, 1969) because of the polytomous format of the response options. The GRM produces parameter estimates that indicate the precision of measurement in the items and test. The parameters most central to the current study include the category response curves (CRC), item discrimination ( $\alpha$ ), threshold ( $\beta$ ), theta ( $\theta$ ), item information function (IIF) and test information function (TIF), as well as standard error of measurement (SEM) associated with items and the test. The CRC displays the probability of responding to a particular response option or category given a conditional value of the underlying trait,  $\theta$ . The GRM is different from earlier IRT models in that  $\alpha$  parameters are constrained for response options within items, but unconstrained across items.  $\beta$  represents the point of intersection among response categories along  $\theta$ . In addition to the CRC, an item fit diagnostic statistic is computed for each item, which is a generalization for polytomous responses of the  $S-\chi^2$  item-fit statistic, as

suggested by Orlando and Thissen (2000, 2003). This chi-squared statistic provides a significance test for the difference between observed and expected category responses. Finally, the IIF indicates precision of measurement of an item across levels of  $\theta$ , and the TIF is an aggregate figure that indicates precision of measurement of the test across levels of  $\theta$ . SEM of the IIFs and TIF indicates the precision of the test at different levels of  $\theta$  (Embretson & Reise, 2000).

A confirmatory factor analysis (CFA) (Kline, 2005; Maruyama, 1997) was conducted to assess the orthogonality of latent factors, factor loadings, and fit of three-factor model that combines a previous two-factor model of SWB (Warr, 1990) with the new factor developed in this study. The series of CFA models were tested using LISREL 9.1 (Jöreskog & Sörbom, 2012).

## 7. Results

### 7.1. Item response analysis

The IRT analysis used in this study requires that the assumption of unidimensionality be met prior to estimating item parameters. Therefore a factor analysis with unrotated principal component extraction was used to assess dimensionality of the new SWB scale. The first three eigenvalues were 9.07, 2.02, and 0.85. A ratio of three to one, wherein the first eigenvalue is three times greater than the second, is a rule of thumb for unidimensionality (Morizot, Ainsworth, & Reise, 2007). Results support unidimensionality of the items used to develop the nonhedonic measure. Therefore subsequent IRT analyses were warranted.

To be included in the final scale three separate item criteria were utilized, which included 1) nonsignificant probability levels, 2) a very high level of discrimination, and 3) a high level of information across the greatest range of the latent construct. The chi-squared item fit index resulted in a total of twelve items (i.e., insignificant, pointless, meaningless, personally fulfilled, meaningful, purpose, accomplished, incomplete, irrelevant, worthless, trivial, and inane) with nonsignificant probability levels ( $p < 0.05$ ) (Table 1). Conventional standards for the strength of discrimination parameters ( $\alpha$ ) suggest that values of 0.01 to 0.24 are very low, 0.25 to 0.64 are low, 0.65 to 1.34 are moderate, 1.35 to 1.69 are high, and more than 1.7 are very high (Baker, 2001). All but two items (i.e., virtuous, incomplete) displayed a very high level of discrimination (Table 2). Aside from the items that provided uniformly low information across all levels of theta (i.e., accomplished, actualized, and incomplete) most IIFs indicated a relatively high level of information at low levels of the latent construct and relatively low amount of information at high levels (2 SD) of the latent construct, which is typical in personality and clinical inventories (Gomez, Cooper, & Gomez, 2005; Reise & Waller, 2009) (Table 3). Information curves are used for item selection to select not only the items that account for the greatest amount of information, but also the specific range of theta where discrimination is desired. In the current study, a high level of information is wanted across the entire range of theta rather than a specific level, and therefore items were also chosen based on relative level and distribution of information across the range of the latent construct.

A final total of six items were selected based on the multiple criteria above, including meaningful, valuable, purpose, irrelevant, personally fulfilled, and trivial. An example of CRCs and IIFs for an adequately (item 5: meaningful) versus a poorly (item 12: incomplete) performing item are presented in Fig. 1.

### 7.2. CFA of the three subjective well-being types

The hypothesized three-factor oblique model of SWB types was tested against competing models with CFA. Model fit indices were generally acceptable and best for the proposed model:  $\chi^2(114, N = 538) = 452.29, p < .05$ , SRMR = 0.07, RMSEA = 0.08, CFI = .98, NNFI = .97 (Table 4). In this best fitting model those error variances of terms sharing common content category space were allowed to correlate. This controversial approach has been used with items sharing common affective content (Tuccitto, Giacobbi, & Leite, 2010),

**Table 1**

Graded response model goodness-of-fit statistics for initial nonhedonic subjective well-being items (Study 1).

Item	$\chi^2$	DF	Probability
1. Insignificant (-)	54.77	66	0.84
2. Pointless (-)	59.78	57	0.37
3. Meaningless (-)	67.91	61	0.25
4. Pers. fulfilled (+)	72.93	60	0.12
5. Meaningful (+)	55.22	46	0.17
6. Important (+)	81.85	45	0.00
7. Valuable (+)	70.56	49	0.02
8. Purpose (+)	55.63	49	0.24
9. Virtuous (+)	119.22	86	0.01
10. Accomplished (+)	78.44	67	0.16
11. Actualized (+)	133.35	77	0.00
12. Incomplete (-)	87.45	82	0.32
13. Irrelevant (-)	54.82	60	0.67
14. Worthless (-)	64.10	51	0.10
15. Trivial (-)	61.06	57	0.33
16. Inane (-)	48.82	55	0.71

Note:  $\chi^2$  = Chi-squared. DF = degrees of freedom. Pers. fulfilled = personally fulfilled. n = 538.

**Table 2**

Graded response model item parameter estimates (and standard errors) for initial nonhedonic subjective well-being items (Study 1).

Items	Item parameters				
	$\alpha$	$\beta_1$	$\beta_2$	$\beta_3$	$\beta_4$
1. Insignificant (-)	2.25 (0.18)	-3.49 (0.37)	-1.79 (0.12)	-0.63 (0.07)	0.43 (0.07)
2. Pointless (-)	2.66 (0.23)	-3.56 (0.43)	-1.82 (0.11)	-0.80 (0.07)	0.20 (0.06)
3. Meaningless (-)	2.46 (0.21)	-3.37 (0.35)	-1.89 (0.12)	-0.87 (0.07)	0.13 (0.06)
4. Pers. fulfilled (+)	2.75 (0.21)	-2.45 (0.16)	-1.26 (0.08)	-0.12 (0.06)	1.81 (0.12)
5. Meaningful (+)	3.46 (0.29)	-2.83 (0.22)	-1.43 (0.08)	-0.29 (0.05)	1.47 (0.10)
6. Important (+)	3.64 (0.31)	-2.54 (0.17)	-1.43 (0.08)	-0.29 (0.05)	1.40 (0.10)
7. Valuable (+)	3.48 (0.30)	-2.73 (0.20)	-1.41 (0.08)	-0.53 (0.06)	1.24 (0.09)
8. Purpose (+)	3.23 (0.27)	-2.69 (0.20)	-1.54 (0.09)	-0.43 (0.06)	1.39 (0.10)
9. Virtuous (+)	1.43 (0.12)	-2.98 (0.25)	-1.49 (0.12)	0.09 (0.08)	2.10 (0.18)
10. Accomplished (+)	1.94 (0.15)	-3.26 (0.29)	-1.79 (0.12)	-0.40 (0.07)	1.74 (0.13)
11. Actualized (+)	1.65 (0.13)	-2.52 (0.19)	-1.24 (0.10)	0.27 (0.08)	2.51 (0.20)
12. Incomplete (-)	1.40 (0.12)	-4.39 (0.52)	-2.13 (0.17)	-0.97 (0.10)	0.81 (0.11)
13. Irrelevant (-)	2.29 (0.20)	-3.49 (0.38)	-2.15 (0.14)	-1.17 (0.08)	-0.09 (0.06)
14. Worthless (-)	2.10 (0.20)	-2.55 (0.19)	-1.80 (0.12)	-0.59 (0.07)	NA (NA)
15. Trivial (-)	2.05 (0.18)	-3.49 (0.36)	-2.47 (0.18)	-1.41 (0.10)	-0.11 (0.07)
16. Inane (-)	1.79 (0.17)	-3.97 (0.48)	-2.92 (0.25)	-1.82 (0.14)	-0.53 (0.07)

Note: IRT = item response theory;  $\alpha$  = discrimination parameter,  $\beta_1, \beta_2, \beta_3$ , and  $\beta_4$  = threshold parameters. Item 14 includes "NA" as only three thresholds could be computed, because the frequency of response option 5 (strongly agree) was zero. n = 538.

and in the current study is defined as separate positively and negatively worded items of each sub-scale. Hu and Bentler (1999) suggest that cutoffs close to or below .08 for SRMR, .06 for RMSEA, and at or above .95 for both NNFI and CFI indicate adequate fit. Additionally, each of the factor loadings on its respective latent factor was significant at  $p < .05$ . Thus the confirmatory factor analysis in Study 1 supports the proposed three-factor measure of SWB ([Hypothesis 1](#)). Internal consistency estimates for manifest variables (likely to be used by most future researchers) formed as the mean of the corresponding items were good: enthusiasm ( $M = 3.96$ ;  $SD = 0.66$ ;  $\alpha = .874$ ), contentment ( $M = 3.30$ ;  $SD = 0.70$ ;  $\alpha = .878$ ), and meaningfulness ( $M = 3.85$ ;  $SD = 0.67$ ;  $\alpha = .892$ ). The nonhedonic scale correlated with contentment at  $r = .457$ ,  $p < .000$  and enthusiasm at  $r = .707$ ,  $p < .000$ . Contentment and enthusiasm correlated  $r = .607$ ,  $p < .000$ .

## 8. Study 2

### 8.1. Participants

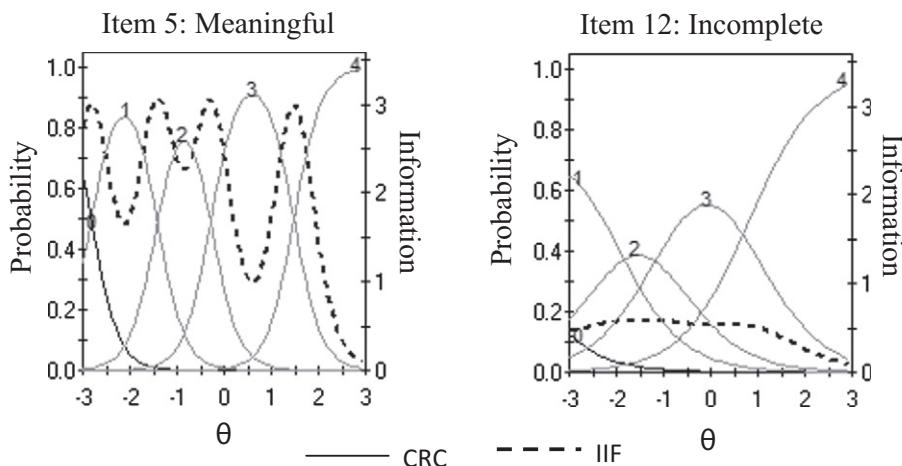
Those participants who answered questions to the end of the survey but skipped some earlier items were deleted from the sample, resulting in a final total of 1050 cases of complete data for the study 2 sample. This sample was used to confirm the SWB measurement model developed in Study 1, to test [hypothesis 1](#), and to test subsequent hypotheses. Demographics were available for this sample, because they were measured at the end of the questionnaire. More than half of respondents were female (56.5%). Racial composition of respondents included Caucasian or White (90.745%), African American or Black (6.3%), Mexican American (0.6%), Asian (0.4%), and a small number of other races. Age ranged from 21 to 72 with an average of 43.9. Most respondents were married or partnered (75.6%).

**Table 3**

Graded response model item information functions for initial nonhedonic subjective well-being items (Study 1).

	$\theta$						
	-3	-2	-1	0	1	2	3
1. Insignificant (-)	1.111	1.290	1.371	1.399	0.868	0.139	0.015
2. Pointless (-)	1.253	1.749	1.932	1.900	0.678	0.058	0.004
3. Meaningless (-)	1.413	1.602	1.698	1.651	0.570	0.060	0.005
4. Pers. fulfilled (+)	1.123	1.765	1.917	1.890	0.917	1.772	0.270
5. Meaningful (+)	2.767	1.748	2.366	2.407	1.735	1.429	0.060
6. Important (+)	1.764	2.422	2.480	2.593	2.118	1.201	0.039
7. Valuable (+)	2.444	1.871	2.905	1.566	2.604	0.740	0.026
8. Purpose (+)	2.072	2.166	2.188	1.740	1.860	1.118	0.057
9. Virtuous (+)	0.549	0.585	0.580	0.575	0.513	0.538	0.348
10. Accomplished (+)	0.994	1.020	0.981	0.878	0.726	0.886	0.275
11. Actualized (+)	0.595	0.776	0.770	0.750	0.597	0.641	0.582
12. Incomplete (-)	0.472	0.571	0.577	0.531	0.499	0.261	0.083
13. Irrelevant (-)	1.277	1.479	1.472	1.352	0.371	0.044	0.005
14. Worthless (-)	0.910	1.323	1.195	0.772	0.145	0.019	0.002
15. Trivial (-)	1.203	1.201	1.124	1.075	0.357	0.055	0.007
16. Inane (-)	0.955	0.941	0.891	0.656	0.184	0.034	0.006

Note:  $\theta$  = estimated theta parameter. n = 538.



Note: CRC = Category Response Curve. IIF = Item Information Function.  $\theta$  = Estimated theta.  $n = 538$ .

**Fig. 1.** Category response curves and item information functions of adequate (i.e., item 5) and inadequately (i.e., item 12) performing initial nonhedonic subjective well-being items (Study 1). Note: CRC = category response curve. IIF = item information function.  $\theta$  = estimated theta.  $n = 538$ .

The majority was employed full-time (full-time: 94.8%; part-time: 5.2%) and employed in their current position for more than two years (82.5%). Most were employed in education (30.0%), health services (13.8%), manufacturing (10.2%), and financial (6.0%) fields.

## 8.2. Measures

The three measures of SWB developed in Study 1 were utilized in Study 2 with the new sample: two hedonic (contentment,  $M = 3.38$ ;  $SD = .68$ ;  $\alpha = .873$ , and enthusiasm,  $M = 3.94$ ;  $SD = .68$ ;  $\alpha = .877$ ) and the new non-hedonic one (meaningfulness,  $M = 3.83$ ;  $SD = .72$ ;  $\alpha = .906$ ). In addition to this criterion measure, several predictor variables were assessed. In the Study 2 sample correlations of the nonhedonic factor with contentment was  $r = .566$ ,  $p < .000$  and with enthusiasm was  $r = .758$ ,  $p < .000$ . Contentment and enthusiasm correlated  $r = .674$ ,  $p < .000$ .

### 8.2.1. Role conflict

An eight-item measure of role conflict was used that assesses the amount of conflicting demands received about one's role requirements; the original factor structure has been replicated (González-Romá & Lloret, 1998) and is independent from role the ambiguity measure, relates to criteria in predictable ways, and has good internal consistency ( $\alpha = .82$  in two samples; Rizzo, House, & Lirtzman, 1970). The scale items were modified for the current study by slightly changing the wording to specify the source of the role conflict as being one's supervisor, coworkers, or subordinates (for a total of twenty-four items). For example, the item "I receive assignments without adequate resources and materials to execute them" was changed to "I receive requests from my supervisor without adequate resources and materials to execute them." The 7-point response scale ranged from "strongly disagree" to "strongly agree."

### 8.2.2. Role ambiguity

Six role ambiguity items were designed to assess the predictability of the outcome of one's behavior and the clarity of behavioral requirements; the original factor structure has been replicated (González-Romá & Lloret, 1998) and is factorial independence from

**Table 4**

Confirmatory factor analysis model comparison, and associated goodness-of-fit indices, for hedonic and new nonhedonic subjective well-being items (Study 1).

Model	$\chi^2$ (DF)	$\Delta \chi^2$	RMSEA	RMR	CFI	NNFI
1 One factor	3118.65 (135)		0.25	0.13	0.82	0.80
2 Two factor orthogonal	2713.04 (135)	405.61	0.19	0.19	0.80	0.78
3 Two factor oblique	2469.04 (134)	244.00	0.18	0.13	0.80	0.80
4 Three factor orthogonal	2421.85 (135)	47.19	0.21	0.32	0.86	0.84
5 Three factor oblique	1952.86 (132)	468.99	0.21	0.12	0.89	0.87
6 Three factor oblique, ECs	452.29 (113)	1500.57	0.08	0.07	0.98	0.97

Note: Model 1 tests a null model where all indicators load on one factor. Model 2 tests a two factor orthogonal model where all hedonic items load on one factor and nonhedonic items load on the other factor, where factor variance is constrained. Model 3 is the same as Model 2, but with free factor variances. Model 4 tests a three factor orthogonal model where factor variance is constrained. Model 5 tests a three factor oblique model, freeing factor variances. Model 6 is the same as Model 5, but allows error variances of triplets of similarly worded descriptors (i.e., positively versus negatively) to correlate within factors.  $\Delta \chi^2$  = comparison with previous model.  $n = 538$ .

role the conflict measure, relates to criteria in predictable ways, and has good internal consistency ( $\alpha = .78$  and  $\alpha = .81$  in two samples; Rizzo et al., 1970). The scale items were modified for the current study by slightly changing the wording to specify the source of the role ambiguity as being one's supervisor, coworkers, or subordinates. For example, the item "I know exactly what is expected of me" was changed to "I know exactly what is expected of me from my supervisor". The 7-point response scale ranged from "strongly disagree" to "strongly agree."

### 8.2.3. Social support

A 12-item instrument was used to assess potentially supportive communication at work in the form of three types of communications: positive work related communication, negative work related communication, and non-work related communication (Beehr et al., 1990). The three scales have factorial independence from each other, relate to criteria in predictable ways, and have good internal consistency (positive communication  $\alpha = .80\text{--}87$ ; negative communication  $\alpha = .75\text{--}.89$ ; non-work communication  $\alpha = .91\text{--}.93$ ; Fenlason & Beehr, 1994) Example items include "We talk about off-the-job interests that we have in common" (non-work related), "We talk about how we dislike some parts of our work" (negative), and "We share interesting ideas about our profession" (positive). As with the other predictor variables, the referent (We) was specified as one's supervisor, subordinate, or coworker. The 5-point response scale ranged from "never" to "always."

## 8.3. Data analysis

A CFA was conducted to confirm the previously developed latent factors, factor loadings, and fit of the hypothesized factor model of SWB (Warr, 1990) using LISREL 9.1 (Jöreskog & Sörbom, 2012). Tests of the equality of dependent correlation coefficients were conducted to assess hypothesized differences of direct effects of role stressors and social support based on source (Steiger, 1980). Moderated structural equation modeling (MSEM) was used to determine the interaction of latent constructs, by assessing model fit indices of a single-run unconstrained model (Marsh, Wen, & Hau, 2004) programmed in LISREL 9.1 (Jöreskog & Sörbom, 2012). Interaction terms were constructed from the indicators of the latent independent variables. Magnitude and significance of factor loading were considered evidence for each hypothesized latent interaction.

## 9. Results

As in Study 1, internal consistency estimates for manifest variables were good: enthusiasm ( $M = 3.94$ ;  $SD = .67$ ;  $\alpha = .877$ ), contentment ( $M = 3.38$ ;  $SD = .68$ ;  $\alpha = .873$ ), and meaningfulness ( $M = 3.83$ ;  $SD = .72$ ;  $\alpha = .906$ ). The nonhedonic scale correlated with contentment at  $r = .566$ ,  $p < .000$  and enthusiasm at  $r = .758$ ,  $p < .000$ . Contentment and enthusiasm correlated  $r = .674$ ,  $p < .000$ . t-Tests to assess equality of means between samples in Study 1 and Study 2 were not significant for enthusiasm ( $t = .60$ ;  $p > .05$ ) and meaningfulness ( $t = .33$ ;  $p > .05$ ). However, the difference between means for contentment in Study 1 ( $M = 3.30$ ;  $SD = 0.70$ ) and Study 2 ( $M = 3.38$ ;  $SD = .68$ ) was statistically significant ( $t = 2.11$ ;  $p < .05$ ).

### 9.1. CFA

The three-factor CFA model of the SWB indices, with correlated error variances between positive and negative items within factor, was tested to confirm the structure found in Study 1. All loadings were significant at  $p < .05$  on their respective latent factors; the model fit indices were acceptable (Hu & Bentler, 1999) and were slightly better than the indices in study 1;  $\chi^2 (114, N = 1050) = 795.17$ ,  $p < 0.0$ , SRMR = 0.06, RMSEA = .08, CFI = .98, NNFI = .97.

### 9.2. Bivariate correlations

**Hypothesis 2**, that social support will have a stronger positive relationship with well-being when the source of support is higher in the organizational hierarchy (i.e., support from the supervisor will have the strongest relationship, followed by support from coworkers, and their subordinates) was assessed by comparing  $z$  transformed correlations and significance test for dependent coefficients (Steiger, 1980).

The positive correlations between total (combined positive, non-work, and negative communication scales) supervisor supportive communication and each type of well-being (contentment,  $r = .161$ ,  $p < .000$ ; enthusiasm,  $r = .299$ ,  $p < .000$ ; meaningfulness  $r = .351$ ,  $p < .000$ ) were significantly greater than those for total coworker communication (contentment,  $r = -.056$ ,  $p > .05$ ; enthusiasm,  $r = -.011$ ,  $p > .05$ ; meaningfulness  $r = .025$ ,  $p > .05$ ). Likewise, most positive correlations between total supervisor supportive communication and well-being were greater than those of total subordinate communication (contentment,  $r = .022$ ,  $p > .05$ ; enthusiasm,  $r = .047$ ,  $p > .05$ ; meaningfulness  $r = .134$ ,  $p < .01$ ) and well-being. Of course aggregate communication obscures the impact of content. The patterns of correlations displayed across different types of contents (Table 5) suggest the greatest direct positive effect from one's supervisor. Therefore the trend of differences between pairs of correlations provides support, and the significance test of difference in magnitude between correlations provides partial support, for **Hypothesis 2** (see Table 5).

**Hypothesis 3** stated that social support will have the strongest positive relationship with well-being when it consists of positive communication (followed by non-work related, and negative communication) and was also assessed by comparing the magnitude of correlation coefficients (Steiger, 1980). This hypothesis was supported, as communication with positive content displayed the strongest positive correlation with each type of well-being, followed by social support where the content is not related to work,

**Table 5**

Tests of hypothesized differences in correlations between role stressor source and subjective well-being based on the source and type of communication (Study 2).

Subordinate	Coworker	Supervisor	Total	$Zr_{y,x_1}-Zr_{y,x_2}$ (p)	$Zr_{y,x_1}-Zr_{y,x_3}$ (p)	$Zr_{y,x_2}-Zr_{y,x_3}$ (p)
<i>Total communication</i>						
SWBc	.022	−.056	.161***	.069*	.078 (.042)	−.140 (.003)
SWBe	.047	−.011	.299***	.174***	.058 (.130)	−.261 (.000)
SWBm	.134**	.025	.351***	.243***	.110 (.004)	−.232 (.000)
<i>Positive work-related communication</i>						
SWBc	.184***	.183***	.235***	.252***	.001 (.975)	−.053 (.182)
SWBe	.309***	.319***	.436***	.440***	−.011 (.744)	−.148 (.000)
SWBm	.367***	.346***	.483***	.487***	.024 (.484)	−.142 (.001)
<i>Non-work related communication</i>						
SWBc	.028	.002	.155***	.083*	.026 (.469)	−.128 (.005)
SWBe	.031	.026	.237***	.141***	.005 (.889)	−.211 (.000)
SWBm	.090	.058	.255***	.178***	.032 (.371)	−.171 (.000)
<i>Negative work-related communication</i>						
SWBc	−.166***	−.298***	−.019	−.204***	.140 (.000)	−.149 (.002)
SWBe	−.223***	−.337***	.033	−.216***	.124 (.001)	−.260 (.000)
SWBm	−.146***	−.307***	.104**	−.137***	.170 (.000)	−.251 (.000)

Note: SWBc = contentment, SWBe = enthusiasm, SWBm = meaningfulness,  $Zr_{y,x_1}-Zr_{y,x_2}$  = z transformed difference between the first and second (from left to right) correlations in the table;  $Zr_{y,x_1}-Zr_{y,x_3}$  = z transformed difference between the first and third correlations in the table;  $Zr_{y,x_2}-Zr_{y,x_3}$  = z transformed difference between the second and third correlations in the table; n = 639–1050.

\*  $p < 0.05$ .\*\*  $p < 0.01$ .\*\*\*  $p < .001$ .

and finally a negative correlation between negative work-related communication and each type of well-being. As can be seen in Table 5, there are 27 pairs of correlation coefficients that differ significantly, most of which are those comparing either supervisor versus subordinate as the source of support or supervisor versus coworker, but not subordinate versus coworker. Again, the trend in correlations provides support, whereas the statistical comparison of magnitude of correlations provides partial support, for Hypothesis 3.

Hypotheses 4a and 4b were tested with a similar analysis. They stated that the negative relationship of role ambiguity (H4a) and role conflict (H4b) with well-being would be stronger when the source was the supervisor than the coworker or subordinate. For each type of well-being, the relationship with both role ambiguity and role conflict was strongest when the source was one's supervisor (Table 6). Using a z transformation and comparison for dependent correlations (Steiger, 1980), the supervisor role stressor (i.e., conflict, ambiguity) and well-being correlations were significantly greater than the correlations for both coworker and subordinate, but none of the coworker role stressor and well-being relationships is significantly greater than subordinate relationships. The results suggest a clear trend that role stress has a stronger direct relationship with well-being when its source is one's supervisor, partially supporting Hypotheses 4a and 4b.

### 9.3. MSEM

Finally, positive communication was hypothesized (H5a and H5b) to exhibit a moderating (buffering) effect on the relationship between role stressors and subordinates' well-being when the source of communication was either one's supervisor or one's coworker. This was tested using an unconstrained (Marsh et al., 2004) MSEM approach. Item parcels were created for all scales in order to

**Table 6**

Tests of hypothesized differences in correlations between role stressor by source and subjective well-being (Study 2).

Subordinate	Coworker	Supervisor	Total	$Zr_{y,x_1}-Zr_{y,x_2}$ (p)	$Zr_{y,x_1}-Zr_{y,x_3}$ (p)	$Zr_{y,x_2}-Zr_{y,x_3}$ (p)
<i>Role ambiguity</i>						
SWBc	−.221***	−.253***	−.350***	−.343***	.034 (.373)	.141 (.002)
SWBe	−.276***	−.310***	−.466***	−.472***	.037 (.335)	.222 (.000)
SWBm	−.337***	−.353***	−.524***	−.515***	.018 (.643)	.231 (.000)
<i>Role conflict</i>						
SWBc	−.261***	−.264***	−.393***	−.339***	.003 (.932)	.148 (.001)
SWBe	−.254***	−.282***	−.447***	−.390***	.030 (.426)	.221 (.000)
SWBm	−.246***	−.280***	−.433***	−.370***	.037 (.335)	.212 (.000)

Note: SWBc = contentment, SWBe = enthusiasm, SWBm = meaningfulness,  $Zr_{y,x_1}-Zr_{y,x_2}$  = z transformed difference between the first and second (from left to right) correlations in the table;  $Zr_{y,x_1}-Zr_{y,x_3}$  = z transformed difference between the first and third correlations in the table;  $Zr_{y,x_2}-Zr_{y,x_3}$  = z transformed difference between the second and third correlations in the table; n = 610–1050.

\*\*\*  $p < .001$ .

reduce the overall number of indicators. Parceling is conventional in SEM when there are a high number of indicators and has been shown to have less impact on covariance estimates when items have five ordinal response options (Yang, Nay, & Hoyle, 2010), which is similar to items in the current study. An odd-even item number parceling approach was taken.

Unstandardized path coefficients are presented in Table 7. The interactions between supervisor role stressors and positive supervisor communication were not significantly related to well-being, which does not support Hypothesis 5a. There was a significant interaction, however, between supervisor role stressors and coworker social support when the type of subjective well-being was enthusiasm. Probes of both interactions were in the hypothesized direction for H5b. Specifically, positive coworker support attenuates the negative relationship between supervisor role stress and enthusiasm at work.

## 10. Discussion

### 10.1. Nonhedonic subjective well-being

Employees' subjective responses to their workplace include more than hedonic responses; the psychological meaningfulness they perceive in their work and the fulfillment they get from it can also be important. The first study tested a hypothesized factor structure of SWB, which extended upon previous studies of employees' hedonic well-being by adding a nonhedonic type of well-being – a meaningfulness type. Researchers have called for the extension of the conventional model of SWB (Telfer, 1980; Warr, 2006), and there was some previous empirical evidence to suggest that the psychometric properties of a non-hedonic measure of well-being could be viable (Battista & Almond, 1973; Chamberlain & Zika, 1988; Debats, 1990; Debats et al., 1993). Therefore, answering this call and building on previous research, the purpose of the first study was to develop a measure of employees' nonhedonic well-being that would be related to, yet conceptually and empirically separate from the hedonic types. The factor structure of a model of SWB that includes both hedonic and nonhedonic measures was viable. Study 2 replicated this finding. The presence of this qualitatively and quantitatively distinct type of well-being is consistent with previous research on some other subjective evaluations of well-being, such as meaning (Crumbaugh, 1968) and coherence (Antonovsky, 1993). Additionally, supervisor role ambiguity and every type of social support show the strongest direct effect on nonhedonic well-being as opposed to either type of hedonic well-being, further supporting the distinction. The resulting measures should be useful for future research on employee well-being.

### 10.2. Sources of stress and social support

Work-related stress can affect employees' well-being (Hoppe, 2011; Hülscheger & Schewe, 2011), and the results of the current study suggest that employees' positions in the organizational hierarchy are important in terms of whether or not communication will have a stressful or supportive impact. A consistent finding in the current study is that an employee's supervisor is more influential than the coworkers or subordinates when it comes to being a source of role stress. Specifically, the relationship of both role ambiguity and conflict with every type of well-being is significantly stronger for these role stressors emanating from supervisors than from coworkers and subordinates. This trend of supervisor as the most influential source was also found for supportive communication. Positive and non-work related communication with one's supervisor displayed the strongest direct impact across all types of SWB. In fact communication with one's supervisor, regardless of content, had a significant positive correlation with SWB as meaningfulness (Table 6). Even negative communication does not have a negative (and in the case of meaningfulness was positive) relationship with well-being when the supervisor is the source. This unexpected result suggests that, depending on type of SWB, the positional status of support source may be even more important than the content of support itself, supporting the propositions related to status-based power (Raven, 1992). Specifically, greater communication with one's supervisor may improve feelings of meaningfulness regardless of communication content.

Unexpectedly, the inverse relationship between negative communications and well-being was strongest when the source was one's coworker. This may imply that negative communication with peers at work focuses attention on poor workplace characteristics, thereby acting as an additional stressor. In addition to a direct effect, perhaps negative conversation with coworkers serves to enhance the impact of role stress received from one's supervisors. Employees may vent their frustrations about their work to their coworkers, but instead of being an adaptive form of catharsis (a presumed intent) it reinforces the aversive effects of the stressor. To test this inductive rationale, and to better understand the potentially reverse buffering interaction involving communications from coworkers (Fenlason & Beehr, 1994), an exploratory analysis of the interaction effect of negative communication on the stressor and well-being relationship was conducted. Using the same MSEM technique employed to test the a priori hypotheses, results showed a negative coefficient for the relationship between the interaction term and all types of well-being (Table 7). Probes indicate that the negative relationship between role stress and well-being was stronger for those reporting higher levels of negative communication with coworkers though only one of the negative relationships reached conventional statistical significance. Further research may be warranted to explore the maladaptive effect of negative communication with coworkers.

### 10.3. Practical implications

Management and supervisor training interventions have been shown to have a positive impact on both supervisor and subordinate individual outcomes (Grant, Christianson, & Price, 2007). One field experiment showed that supervisory role clarification training conducted over a two year period not only corrected identified gaps in role responsibilities at the manager level, but also resulted in reduced role ambiguity at the subordinate level (Schaubroeck, Ganster, Sime, & Ditman, 1993). Additionally, interventions that focus

**Table 7**

Moderated structural equation models of hypothesized role stressor, communication source and content, and subjective well-being interactions (Study 2).

	$\varphi$			$\lambda_x$						DV			Fit		
	1	2	3	X <sub>1</sub>	X <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	X <sub>1</sub> Z <sub>1</sub>	X <sub>2</sub> Z <sub>2</sub>	SWBc	SWBe	SWBm	RMSEA	RMR	CFI
1. RaSup	0.897***									-0.295***	-0.095***	-0.114***			
2. PosSup	-0.476***	0.789***								0.055	0.213***	0.158***			
3. 1 × 2			3.464							0.014	0.002	-0.007	0.112	0.115	0.950
1. RcSup	0.711***									-0.370***	-0.096***	0.037			
2. PosSup	-0.285***	0.760***								0.126***	0.236***	0.238**			
3. 1 × 2			1.885***							0.004	0.014	-0.025	0.098	0.081	0.955
1. RaSup	0.921***									-0.313***	-0.163***	-0.153***			
2. PosCo	-0.221***	0.641***								-0.096**	-0.153***	0.141***			
3. 1 × 2			0.471**							0.010	0.055**	0.041	0.098	0.078	0.953
1. RcSup	0.709***									-0.394***	-0.163***	-0.018			
2. PosCo	-0.096***	0.634***								0.152***	0.187***	0.180***			
3. 1 × 2			0.050							0.040	0.056**	0.000	0.097	0.062	0.951
1. RaSup	0.921***									-0.287***	-0.186***	0.177***			
2. NegCo	-0.175***	0.566***								-0.259***	-0.131***	0.035			
3. 1 × 2			1.403***							1.00	0.471	-0.026	-0.002	-0.003	0.098
1. RcSup	0.714***									-0.329***	-0.137***	-0.021			
2. NegCo	-0.265***	0.601***								0.213***	0.128***	0.045			
3. 1 × 2			0.423**							1.00	1.419***	-0.068	-0.074*	-0.005	0.098

Note: RaSup = role ambiguity from supervisor. RcSup = role conflict from supervisor. PosSup = positive communication with supervisor. PosCo = positive communication with coworker. NegCo = negative communication with coworker. SWB variables were allowed to covary.  $\varphi$  = unstandardized phi coefficient.  $\lambda_x$  = unstandardized lambda-x coefficient (1.00 = fixed). DV = dependent variables. SWBc = contentment, SWBe = enthusiasm, SWBm = meaningfulness. RMSEA = root mean squared error of approximation. RMR = root mean square residual. CFI = comparative fit index. n = 610–1050.

\*  $p < 0.05$ .\*\*  $p < 0.01$ .\*\*\*  $p < 0.001$ .

on changing work environment characteristics while increasing supportive behavior by training employees have improved coworker social support and decreased symptoms of depression (Heaney et al., 1993). Results suggest that interventions aimed at reducing role ambiguity and conflict at all levels of the organization (supervisor, coworker, subordinate) may also enhance hedonic and nonhedonic well-being at all levels of the organization. Additionally, focusing training on the importance of the type (positive versus negative) at the coworker and subordinate level, while focusing training on communication at the supervisor level more broadly, may improve well-being at each employee level.

#### 10.4. Limitations and future research

The current study extended prior theory by broadening the understanding of SWB at work with regard to hedonic versus nonhedonic experience (Rosso et al., 2010). However there are several limitations in the current study. First, the current studies used a limited set of adjectives (Warr, 1990) as markers for comparison with the new measure. Therefore the comparison with more popular assessments of affect (e.g., PANAS) is not available. Future studies would benefit from analyzing additional adjectives in order to more fully understand how this new nonhedonic measure fits into a broader nomological network. Also, the current studies offer results regarding social support that is to some extent equivocal. An attempt was made at more fully integrating organizational hierarchy in terms of source of stressors and support. While relatively consistent results show the importance of role signals from one's supervisor it may be that the content of support is more varied than that which is measured in the current study (i.e., positive, negative, not work-related); exploring more nuances of social support would be helpful.

### 11. Conclusion

The current studies suggest that SWB, a major construct in occupational stress and occupational health psychology, may involve nonhedonic, or meaningfulness, elements as well as its more traditional hedonic elements; furthermore, they are empirically separable from each other. In short, like other multi-faceted constructs (Spreitzer, Kizilos, & Nason, 1997), we show that meaning is an important yet separate component of the SWB. The utilization of IRT and CTT to create a more comprehensive measurement of SWB represents as an important contribution to knowledge about SWB. Thus the conventional two-dimensional hedonic circumplex of well-being needs to be modified to incorporate a distinct yet related concept: meaningfulness.

Work-role stressors are related to both types of SWB. In predicting SWB, the impact of source of stressors and of social support was assessed. Results suggest a striking influence of the supervisor on their direct subordinates. In terms of one's interpersonal relationships at work, it is the supervisor who has the strongest ability to alter one's well-being – whether by inflicting role stress or enhancing well-being by providing socially supportive communication. Supervisor role ambiguity and every type of social support show the strongest direct effect on nonhedonic well-being as opposed to either type of hedonic well-being, emphasizing the important role of this new type of well-being. It appears that positive communication with one's supervisor is an even more important antecedent of meaningfulness at work than other types of well-being.

Finally, positive communication with coworkers may serve a function in relation to role stressors received from one's supervisors. However, the content of potentially supportive communication with one's coworkers may be critical in determining the direction of the moderating effect. Specifically, while positive communication with coworkers may serve to attenuate the impact of role stress, negative communication may serve to amplify the effect. This is likely to have important practical implications for individual performance, because both hedonic (e.g., Wright & Cropanzano, 2000) and nonhedonic (Steger & Dik, 2009) SWB are associated with important work outcomes.

### References

- Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science & Medicine*, 36, 25–33.
- Bain, K. (2007). *Meaning inc: The blueprint for business success in the 21st century*. London: Profile Books.
- Baker, F. (2001). *The basics of item response theory*. College Park: ERIC Clearinghouse on Assessment and Evaluation, University of Maryland.
- Balshem, M. (1988). The Clerical Worker's Boss: An Agent of Job Stress. *Human Organization*, 47, 361–367.
- Battista, J., & Almond, R. (1973). The development of meaning in life. *Psychiatry*, 36, 409–427.
- Beehr, T. A. (1976). Perceived situational moderators of the relationship between subjective role ambiguity and role strain. *Journal of Applied Psychology*, 61, 35–40.
- Beehr, T. A., Bowling, N. A., & Bennett, M. M. (2010). Occupational stress and failures of social support: When helping hurts. *Journal of Occupational Health Psychology*, 15, 45–59.
- Beehr, T. A., Farmer, S. J., Glazer, S., Gudanowski, D.M., & Nair, V. N. (2003). The enigma of social support and occupational stress: Source congruence and gender role effects. *Journal of Occupational Health Psychology*, 8, 220–231.
- Beehr, T., King, L., & King, D. (1990). Social support and occupational stress: Talking to supervisors. *Journal of Vocational Behavior*, 36, 61–81.
- Brief, A. P., & Nord, W. R. (1990). *Meanings of occupational work*. Lexington: Lexington Books.
- Cai, L., Thissen, D., & du Toit, S. (2011). *IRTPro for Windows (version 2.1) [computer software]*. Lincolnwood, IL: Scientific Software International.
- Chamberlain, K., & Zika, S. (1988). Measuring meaning in life: An examination of three scales. *Personality and Individual Differences*, 9, 589–596.
- Chen, P. Y., Popovich, P.M., & Kogan, M. (1999). Let's talk: Patterns and correlates of social support among temporary employees. *Journal of Occupational Health Psychology*, 4, 55–62.
- Cifre, E., & Salanova, M. (2002). Multidimensionality and bipolarity of a Spanish version of Warr's (1990) well-being measures. *The Journal of Psychology: Interdisciplinary and Applied*, 136, 69–74.
- Cooper-Thomas, H. D., Paterson, N. L., Stadler, M. J., & Saks, A.M. (2014). The relative importance of proactive behaviors and outcomes for predicting newcomer learning, well-being, and work engagement. *Journal of Vocational Behavior*, 84, 318–331.
- Crumbaugh, J. C. (1968). Cross-validation of purpose in life test based on Frankl's concepts. *Journal of Individual Psychology*, 24, 74–81.
- Daniels, K., Boocock, G., Glover, J., Hartley, R., & Holland, J. (2009). An experience sampling study of learning, affect, and the demands control support model. *Journal of Applied Psychology*, 94, 1003–1017.

- Debats, D. L. (1990). The life regard index: Reliability and validity. *Psychological Reports*, 67, 27–34.
- Debats, D. L., van der Lubbe, P.M., & Wezeman, F. R. A. (1993). On the psychometric properties of the life regard index (LRI): A measure of meaningful life an evaluation in three independent samples based on the Dutch version. *Personality and Individual Differences*, 14, 337–345.
- Debats, D. (1996). Meaning in life: Clinical relevance and predictive power. *British Journal Of Clinical Psychology*, 35(4), 503–516.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542–575.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276–302.
- Dik, B. J., Byrne, Z. S., & Steger, M. F. (Eds.). (2013). *Purpose and meaning in the workplace*. Washington, DC: American Psychological Association.
- Embretson, S. E., & Reise, S. P. (2000). *Item response theory for psychologists*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Fenlason, K. J., & Beehr, T. A. (1994). Social support and occupational stress: Effects of talking to others. *Journal of Organizational Behavior*, 15, 157–175.
- Glaser, D. N., Tatum, B. C., Nebeker, D. M., Sorenson, R. C., & Aiello, J. R. (1999). Workload and social support: Effects on performance and stress. *Human Performance*, 12(2), 155–176.
- Gomez, R., Cooper, A., & Gomez, A. (2005). An item response theory analysis of the Carver and White (1994) BIS/BAS scales. *Personality and Individual Differences*, 39, 1093–1103.
- Gomez, R., & Fisher, J. W. (2005). Item response theory analysis of the spiritual well-being questionnaire. *Personality and Individual Differences*, 38, 1107–1121.
- González-Romá, V., & Lloret, S. (1998). Construct validity of Rizzo et al.'s (1970) role conflict and ambiguity scales: A multisample study. *Applied Psychology: An International Review*, 47(4), 535–545.
- Grant, A. (2012). Leading with meaning: Beneficiary contact, prosocial impact, and the performance effects of transformational leadership. *Academy of Management Journal*, 55, 458–476.
- Grant, A., Christianson, M., & Price, R. (2007). Happiness, health, or relationships? Managerial practices and employee well-being tradeoffs. *Academy of Management Perspectives*, 21, 51–63.
- Gray, B., Bougon, M. G., & Donnellon, A. (1985). Organizations as constructions and destructions of meaning. *Journal of Management*, 11, 83–98.
- Green, D. P., Goldman, S. L., & Salovey, P. (1993). Measurement error masks bipolarity in affect ratings. *Journal of Personality and Social Psychology*, 64, 1029–1041.
- Heaney, C. A., Israel, B.A., Schurman, S. J., Baker, E. A., House, J. S., & Hugentobler, M. (1993). Industrial relations, worksite stress reduction, and employee well-being: A participatory action research investigation. *Journal of Organizational Behavior*, 14, 495–510.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1, 104–121.
- Hoppe, A. (2011). Psychological working conditions and among immigrant and German low-wage workers. *Journal of Occupational Health Psychology*, 16, 1–15.
- Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–5.
- Hülscherger, U. R., & Schewe, A. F. (2011). On the costs and benefits of emotional labor: A meta-analysis of three decades of research. *Journal of Occupational Health Psychology*, 16, 361–389.
- Jim, H. S., Purnell, J. Q., Richardson, S. A., Golden-Kreutz, D., & Andersen, B.L. (2006). Measuring meaning in life following cancer. *Quality of Life Research: an International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, 15, 1355–1371.
- Jöreskog, K., & Sörbom, D. (2012). *LISREL for Windows (version 9.1)* [computer software]. Lincolnwood, IL: Scientific Software International.
- Kahn, J. H., Schneider, K. T., Jenkins-Henkelman, T. M., & Moyle, L. L. (2006). Emotional social support and job burnout among high-school teachers: Is it all due to dispositional affectivity? *Journal of Organizational Behavior*, 27, 793–807.
- Kahn, R., Wolfe, D., Quinn, R., Sneek, J., & Rosenthal, R. (1964). *Organizational stress: Studies in role conflict and ambiguity*. New York, NY: Wiley.
- Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: The foundations of Hedonic psychology*. New York, NY: Russell Sage Foundation.
- Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, 3, 219–233.
- Kaufmann, G. M., & Beehr, T. A. (1986). Interactions between job stressors and social support: Some counterintuitive results. *Journal of Applied Psychology*, 71, 522–526.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York, NY: The Guilford Press.
- La Rocco, J. M., House, J. S., & French, J. R. (1980). Social support, occupational stress, and health. *Journal Of Health And Social Behavior*, 21(3), 202–218.
- Luthans, F. (2002). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Executive*, 16, 57–75.
- Mäkipangas, A., Feldt, T., & Kinnunen, U. (2007). Warr's scale of job-related affective well-being: A longitudinal examination of its structure and relationships with work characteristics. *Work & Stress*, 21, 197–219.
- Marsh, H. W., Wen, Z., & Hau, K. T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction. *Psychological Methods*, 9, 275–300.
- Maruyama, G. M. (1997). *Basics of structural equation modeling*. Thousand Oaks, CA: Sage Publications.
- Maslow, A. H. (1943). A Theory of Human Motivation. *Psychological Review*, 50, 370–396.
- Morizot, J., Ainsworth, A. T., & Reise, S. (2007). Toward modern psychometrics: Application of item response theory models in personality research. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 407–423). New York, N: Guilford.
- MOW (Meaning of Work) International Research Team (1987). *The meaning of work*. London: Academic Press.
- Nord, W. R., Brief, A. P., Atieh, J. M., & Doherty, E. M. (1990). Studying meanings of work: The case of work values. In A. P. Brief, & W. R. Nord (Eds.), *Meanings of occupational work* (pp. 21–64). Lexington: Lexington Books.
- Orbach, I., Iluz, A., & Rosenheim, E. (1987). Value systems and commitment to goals as a function of age, integration of personality, and fear of death. *International Journal Of Behavioral Development*, 10(2), 225–239.
- Orlando, M., & Thissen, D. (2000). New item fit indices for dichotomous item response theory models. *Applied Psychological Measurement*, 24, 50–64.
- Orlando, M., & Thissen, D. (2003). Further investigation of the performance of  $S-\chi^2$ : An item fit index for use with dichotomous item response theory models. *Applied Psychological Measurement*, 27, 289–298.
- Pratt, M. G., & Asforth, B. E. (2003). Fostering meaningfulness in working and at work. In K. Cameron, J. Dutton, & R. Quinn (Eds.), *Positive organizational scholarship* (pp. 309–327).
- Raven, B. H. (1992). A power/interaction model of interpersonal influence: French and Raven thirty years later. *Journal of Social Behavior and Personality*, 7, 217–244.
- Raven, B. H. (1993). The bases of power: Origins and recent developments. *Journal of Social Issues*, 49, 227–251.
- Reise, S. P., & Waller, N. G. (2009). Item response theory and clinical measurement. *Annual Review of Clinical Psychology*, 5, 27–48.
- Reker, G. T. (1992). *The life attitude profile-revised (LAP-R): Procedures manual*. Peterborough, Ontario: Student Psychologists Press.
- Remington, N. A., Fabrigar, L. R., & Visser, P.S. (2000). Reexamining the circumplex model of affect. *Journal of Personality and Social Psychology*, 79, 286–300.
- Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15, 150–163.
- Ros, M., Schartz, S. H., & Surkiss, S. (1999). Basic individual values, work values, and the meaning of work. *Applied Psychology: An International Review*, 48(1), 49–71.
- Rosso, B.D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior*, 30, 91–127.
- Russell, J. A. (1979). Affective space is bipolar. *Journal of Personality and Social Psychology*, 37, 1161–1178.
- Russell, J. A. (1980). A circumplex model of affect. *Journal Of Personality And Social Psychology*, 39(6), 1161–1178.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069–1081.
- Samejima, F. (1969). Estimation of latent ability using a response pattern of graded scores. *Psychometrika Monograph Supplement*, 34, 100–114.
- Schaubroeck, J., Ganster, D. C., Sime, W. E., & Ditman, D. (1993). A field experiment testing supervisory role clarification. *Personnel Psychology*, 46, 1–25.
- Schnell, T., & Becker, P. (2006). Personality and meaning in life. *Personality and Individual Differences*, 41, 117–129.
- Schuler, R. S. (1980). A role and expectancy perception model of participation in decision making. *Academy of Management Journal*, 23, 331–340.
- Sheldon, K., & King, L. (2001). Why positive psychology is necessary. *American Psychologist*, 56, 216–217.
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420–428.
- Spell, C. S., & Arnold, T. J. (2007). A multi-level analysis of organizational justice climate, structure, and employee mental health. *Journal of Management*, 33, 724–751.

- Spreitzer, G. M., Kizilos, M. A., & Nason, S. W. (1997). A dimensional analysis of the relationship between psychological empowerment and effectiveness, satisfaction, and strain. *Journal of Management*, 23, 679–704.
- Steger, M. F., & Dik, B. J. (2009). If one is searching for meaning in life, does meaning in work help? *Applied Psychology: Health and Well-Being*, 1, 303–320.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning of life questionnaire: Assessing the presence of and search for meaning of life. *Journal of Counseling Psychology*, 53, 80–93.
- Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin*, 87, 245–251.
- Stephens, C., & Long, N. (2000). Communication with police supervisors and peers as a buffer of work-related traumatic stress. *Journal of Organizational Behavior*, 21, 407–424.
- Stetz, T. A., Stetz, M. C., & Bliese, P. D. (2006). The importance of self-efficacy in the moderating effects of social support on stressor-strain relationships. *Work & Stress*, 20, 49–59.
- Telfer, E. (1980). *Happiness: An examination of a hedonistic and eudaemonic concept of happiness and of the relations between them, with a consideration of how far and in what sense either kind of happiness may be said to be the goal of human life*. London: The Macmillan Press LTD.
- Triado, C., Villar, F., Sole, C., & Celadran, M. (2007). Construct validity of Ryff's scale of psychological well-being in Spanish older adults. *Psychological Reports*, 100, 1151–1164.
- Tuccitto, D. E., Giacobbi, P. R., & Leite, W. L. (2010). The internal structure of positive and negative affect: A confirmatory factor analysis of the PANAS. *Educational and Psychological Measurement*, 70, 125–141.
- Viswesvaran, C., Sanchez, J. A., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, 54, 314–334.
- Wade, T. D., & Kendler, K. S. (2000). The relationship between social support and major depression: Cross-sectional, longitudinal, and genetic perspectives. *Journal Of Nervous And Mental Disease*, 188(5), 251–258.
- Warr, P. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology*, 63(3), 193–210.
- Warr, P. (2006). Work, well-being, and mental health. In J. Barling, K. E. Kelloway, & M. R. Frone (Eds.), *Handbook of work stress* (pp. 547–573). Thousand Oaks-London-New Delhi: Sage Publications.
- Waterman, A. S., Schwartz, S. J., & Conti, R. (2008). The implications of two conceptions of happiness (hedonic enjoyment and eudaimonia) for the understanding of intrinsic motivation. *Journal of Happiness Studies*, 9, 41–79.
- Weems, C. F., Costa, N. M., Dehon, C., & Berman, S. L. (2004). Paul Tillich's theory of existential anxiety: A preliminary conceptual and empirical analysis. *Anxiety, Stress, & Coping*, 17, 383–399.
- Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology*, 5, 84–94.
- Yang, C., Nay, S., & Hoyle, R. H. (2010). Three approaches to using lengthy ordinal scales in structural equation models: Parceling, latent scoring, and shortening scales. *Applied Psychological Measurement*, 34, 122–142.
- Yik, M. S. M., Russell, J. A., & Barrett, L. F. (1999). Structure of self-reported current affect: Integration and beyond. *Journal of Personality and Social Psychology*, 77, 600–619.
- Zellars, K. L., & Perrewé, P. L. (2001). Affective personality and the content of emotional social support: Coping in organizations. *Journal of Applied Psychology*, 86, 459–467.
- Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. *British Journal of Psychology*, 83, 133–145.