# Item selection and validation of a brief, 20-item version of the Differentiation of Self Inventory—Revised

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## ARTICLE INFO

## ABSTRACT

The 46-item Differentiation of Self Inventory—Revised (DSI-R) (Skowron & Schmitt, 2003) is perhaps the most widely used and psychometrically validated instrument measuring the family systems theory (Bowen, 1978) concept of differentiation of self. Given the substantial length of the DSI-R, Drake et al. (2015) offered the Differentiation of Self Inventory—Short Form (DSI-SF). However, based on limitations of the DSI-SF, we empirically validated a brief version of the 4-factor DSI-R using data from two adult samples (Sample 1: $n =$ 541; Sample 2: $n = 203$). First, we conducted an EFA on the full 46-item DSI-R scale on Sample 1 to help us identify items most strongly representing each factor. Then we conducted CFAs comparing the model fit between our brief DSI, the DSI-SF, and the full DSI-R on both samples. Results indicated that the brief DSI had the strongest model fit in both samples. Finally, a comparison of associations among the brief DSI, the DSI-SF, and full DSI-R and various relevant variables showed similar correlations. The brief DSI provides counselors and researchers in the areas of psychology, organizational behavior, and business a useful measure of differentiation of self when circumstances prohibit the use of the full DSI-R.

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## 1. Introduction

Because of an increasing interest in understanding how relational systems affect psychological and behavioral functioning, scholars have looked to Bowen's (1978) Family Systems Theory (FST). Articulated as one of the most developed theories on human functioning (Skowron & Friedlander, 1998), FST claims that *differentiation of self* (DOS) is of key importance (Bowen, 1978). The concept has already been widely examined in the area of counseling psychology; more recently, researchers have begun to explore the application of DOS in the areas of business and organizational behavior (Beebe & Frisch, 2009; Cochran, 2011).

DOS refers to the degree to which an individual can balance emotional with intellectual functioning and closeness with independence in relationships with others (Bowen, 1978). Individuals high in DOS are able to distinguish their thoughts from their feelings and are capable of balancing degrees of autonomy and intimacy (Bowen, 1978; Skowron & Friedlander, 1998). More specifically, individuals with high DOS have the ability to maintain the *I-positon*, in which they keep a well-defined sense of self and possess the capacity to follow convictions despite experiencing pressure to do otherwise (Skowron & Friedlander, 1998). Individuals low in DOS tend to be more emotionally cut off, engage in

emotional reactivity, and become emotionally overinvolved with or "fused" with others in relationships (p. 239). The most widely used and psychometrically validated instrument measuring DOS is the 46-item Differentiation of Self Inventory—Revised (DSI-R) (Skowron & Schmitt, 2003).

Practical reasons warrant the use of a brief version of the DSI-R. The length of the full 46-item scale takes time that could be used for other purposes in a clinical setting, or that could be used for measuring additional variables in a research setting (Roets & Van Hiel, 2011). The large number of items may also introduce respondent fatigue or boredom, which has potential to diminish the quality of the response set (Credé, Harms, Niehorster, & Gaye-Valentine, 2012). The purpose of this paper is to put forth a brief version of the four-factor DSI-R while maintaining the validity of the full instrument.

### 1.1. Background to DSI-R

Researchers have found that DOS influences the psychological health and functioning of emotional systems across various contexts (e.g., Gushue & Constantine, 2003; Peleg, 2005; Tuason & Friedlander, 2000). Empirically, differentiation has been found to lower stress and anxiety (Murdock & Gore, 2004), increase psychological well-being (Skowron, Holmes, & Sabatelli, 2003), and improve relational functioning (Chung & Gale, 2009). Evidence also supports differentiation as negatively related to attachment avoidance and anxiety while being positively related to effortful control (Skowron & Dendy, 2004).

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Although multiple instruments measuring DOS exist (i.e., Bartle & Sabatelli, 1995; Haber, 1993; Jankowski & Hooper, 2012; Licht & Chabot, 2006; Skowron & Friedlander, 1998; Skowron & Schmitt, 2003), the 46-item DSI-R (Skowron & Schmitt, 2003) is one of the most used and psychometrically validated instruments. It is the de facto instrument for the majority of researchers and practitioners interested in DOS.[1]

Skowron and Friedlander (1998) developed the Differentiation of Self Inventory as a multidimensional construct measuring differentiation with four subcategories: emotional cutoff (EC), emotional reactivity (ER), I-position (IP), and fusion with others (FO). Although three of the four subscales were psychometrically sound, the FO subscale lacked reliability and validity. Skowron and Schmitt (2003) recognized this weakness and revised the FO subscale to strengthen reliability and validity. Their efforts resulted in the construction of the Differentiation of Self Inventory—Revised (DSI-R) with acceptable internal consistencies measured using Cronbach's alpha ranging from .81 to .89 for subscales and to .92 for the full scale. Skowron and Dendy (2004) confirmed the four-factor structure and showed similar reliabilities. However, Chung and Gale (2009) reported weaker internal consistencies among college students in a Korean sample (ranging between .63 and .69 for the subscales; full scale = .85) and a European American sample (ranging between .65 and .84; full scale = .87).

### 1.2. DSI-SF

The need for a shorter scale was recognized by Drake, Murdock, Marszalek, and Barber (2015), who performed further analysis to construct a short-form version of the DSI-R. They introduced the Differentiation of Self Inventory—Short Form (DSI-SF) as a 20-item instrument constructed using item response theory. However, whereas the original DSI-R focused on adults (Skowron & Schmitt, 2003), the DSI-SF was developed exclusively with a college-aged sample.

Certain considerations are important when relying solely on college-age participants. First, several studies have reported differences between a college-age sample and the society at large regarding elements crucial for DOS. For example, college students in the United States differed from their adult, nonstudent counterparts in susceptibility to attitude change (Krosnick & Alwin, 1989), degree of self-monitoring (Reifman, Klein, & Murphy, 1989), and social influence (Pasupathi, 1999). In addition, Lamont's (2000) findings suggest that adults without college educations differ from college students in terms of the makeup of their social networks. These findings bring into question the generalizability of the outcomes of a validity study based exclusively on a college-age sample to the general population (Henrich, Heine, & Norenzayan, 2010).

Second, the selection method for the DSI-SF items was item response theory (IRT), and no factor analysis was performed. IRT is an excellent method for testing for equivalence of item parameters within one factor (Meade & Lautenschlager, 2004). However, what is missing is taking into account in the overlap in item content between constructs. For testing multidimensional models such as the four-factor construct of differentiation (Skowron & Schmitt, 2003), factor analysis provides that information (Wang & Russell, 2005). Regretfully, Drake et al. (2015) conducted only a principal component analysis (PCA) to confirm the unidimensionality of the separate subscales. They also did not report any confirmatory factor analysis (CFA) results.

Third, the number of items kept in the DSI-SF subscales was not equivalent. With three items for EC, five in FO, and six in ER and IP, the overall scores for ER and IP are better represented than EC and slightly better represented than FO. With this study, we aim to introduce a shorter scale that takes into account all three criticisms.

### 1.3. The need for a brief version of the DSI-R

Clinical psychologists and researchers in the disciplines of psychology, organizational behavior, and business would benefit from having an efficient method to evaluate DOS that is generalizable to populations outside college students. In this study we present an instrument for this purpose: a brief version of the previously validated DSI-R, which is psychometrically sound and captures each of the four dimensions assessed in the full 46-item scale. In constructing our brief version, we followed the recommendations by Smith, McCarthy, and Anderson (2000), offering a clear intended use of the short form and refraining from assuming that the reliability and validity of the original full-length scale automatically applied to shortened versions.

To develop the brief DSI, we combined insights gained from reliability analysis in terms of internal consistency of the subscales with an exploratory factor analysis (EFA) on the full 46-item DSI-R scale using a single sample of adults. To reduce the scale, we kept those items with the highest item-total analysis and removed those items with the lowest loadings on their own dimension as well as loading on multiple factors. In this way, we developed a brief version of the scale that included the essential items from each subscale while removing those items that were not clearly representative of one subdimension only. To confirm our final solution, we conducted a CFA comparing the model fit between our brief DSI, the DSI-SF, and the full DSI-R. We repeated the same CFA on a second independent sample. Finally, to test the construct validity of our short version, we compared the associations among the brief DSI, the DSI-SF, and the full DSI-R with other relevant variables.

Variables chosen for comparison were based on theoretical and empirical associations. These variables included attachment anxiety and avoidance (Bowlby, 1982) and effortful control (Rothbart, Ahadi, & Evans, 2000). According to attachment theory (Bowlby, 1982), anxiously attached individuals are hyperactive in response to stressful systems. Individuals with avoidant characteristics tend to deny the importance of intimacy and attachment in relationships. The capacity for effortful control depends on a person having been securely attached with caregivers. This capacity predicts social functioning and psychological adjustment in adults (Skowron & Dendy, 2004). According to Bowen (1978), DOS either constrains or enables that individual's capacity for self-regulation, or effortful control, as well as his or her tendency to exhibit emotionally reactive (anxious) or emotionally cutoff (avoidant) behaviors.

Skowron and Dendy (2004) empirically tested the theoretical associations among self-differentiation and attachment anxiety, attachment avoidance, and effortful control. Their results confirmed that DOS was significantly related to effortful control and to both attachment dimensions. These variables were chosen to compare the magnitudes of the brief DSI, the DSI-SF, and the full DSI-R scales.

## 2. Method

### 2.1. Participants

#### 2.1.1. Sample 1

DSI-R data were collected from 614 fully employed adults living in the United States through recruitment services provided by SurveyMonkey Audience. 541 (85%) participants provided usable data. Population demographics were as follows: 52.1% were male, 89.9% white/Caucasian, 2.9% Asian, 2.9% black/African American, 2.0% Latin/Hispanic, and 1.6% multiracial. Nearly twenty-three percent (22.7%) of participants were between 25 and 39 years of age, 23.4% were between 40 and 49, 35.5% were between 50 and 59, and 18.5% were 60 or older. The average job tenure was 12.00 years (SD = 9.94), ranging from less than 1 year to 60 years.

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[1] Skowron, Friedlander, and Mallinckrodt's (2009) 43-item instrument is the original DSI developed in 1998. The 2009 article simply reports an error correction found in Skowron and Friedlander's (1998) study.