



The General Belongingness Scale (GBS): Assessing achieved belongingness

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ABSTRACT

Belongingness has emerged as a central construct of theoretical importance in the last two decades; however, little attention has been given to develop a brief, psychometrically sound measure of general belongingness. Three studies were conducted to develop a 12-item measure to assess a sense of general belongingness. Students were recruited to participate in online computer-administered surveys ($N = 81$, 875, and 213, respectively). High reliability and strong patterns of validity estimates are established. EFA and CFA results indicate a 2-factor structure (*Acceptance/Inclusion* and *lack of Rejection/Exclusion*), with a high inter-factor correlation. The current investigation is the first to document that achieved belongingness is distinct from the need to belong, and to show strong associations between belongingness and the Big Five personality traits of Neuroticism ($r = -.51$) and Extraversion ($r = .46$).

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1. Introduction

From an evolutionary perspective, the motive to belong is central to human existence and culture. Personality traits that motivate individuals to gain acceptance and avoid rejection are indispensable tools enabling survival and reproduction. Where there is a substantial base of research utilizing the motive to belong as an explanatory construct (e.g., Baumeister & Leary, 1995), there is also research exploring the links between achieved belongingness and subjective well-being. For instance, Anant (1966) claimed that belongingness is the missing link in understanding mental health from an interpersonal perspective. Baumeister and Tice (1990) claimed that social exclusion may be the most common cause of anxiety. Choenarom, Williams, and Hagerty (2005) showed a direct effect between sense of belonging and depression, even after controlling for other factors such as stress, spousal support and social support. Durkheim (1897/1963) proclaimed that belongingness deprivation can lead to severe depression and even suicidal ideation.

1.1. Measuring belongingness

Despite the strong emergence of belongingness as an explanatory construct in psychology, the empirical development of valid measures to assess one's general sense of belonging has not yet re-

ceived that same attention. Belongingness measures are available, but most of those measures are specific to belongingness needs met by friends, family, co-workers, sports, and school. In response to that predicament, Hagerty and Patusky (1995) endeavored to develop an instrument assessing a general sense of belonging. They defined belongingness with respect to valued involvement, fit, and antecedents to belonging. Contrary to their theoretical expectations, valued involvement and fit reduced to one factor, yielding the Sense of Belonging Instrument-Psychological Experiences (SOBI-P); antecedents to belonging loaded on a second factor, yielding the Sense of Belonging Instrument-Antecedents (SOBI-A). Lee and Robbins (1995) likewise attempted to develop an instrument defined by three factors: companionship involving one-on-one contact, affiliation with small groups, and connectedness to a grander social context. However, similar to Hagerty and Patusky (1995), the results rendered two separate measures: the Social Connectedness and Social Assurance Scales.

One commonly used measure is the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2006). The scale assesses the motivation to be accepted by others and avoid being shunned. Diminished needs to belong presumably serve as an indicator, though not a direct assessment, of a greater sense of belonging.

Of concern, instruments assessing general belongingness are predominantly comprised of negative-worded items (e.g., SOBI-P, 17 of 18 items; Social Connectedness Scale, all 8 items)—essentially indirectly measuring a sense of belonging by assessing a lack of not belonging. Including a balance between negative- and positive-worded items could better account for individual differences in how respondents may interpret an item. For example, some

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individuals may report a sense of belonging because they feel included, whereas others may report a sense of belonging because they do not feel excluded. Therefore, one key objective of the present study was to develop a brief instrument assessing both a sense of achieved belonging and a lack of not belonging in a balanced fashion.

Another chief objective was to develop items assessing belongingness across the construct consistent with theory. Baumeister and Leary (1995) argue from an evolutionary perspective that both regular social contact and feelings of connectedness are essential components of belongingness. However, they agree with Hagerty, Lynch-Sauer, Patusky, Bouwsema, and Collier (1992) that achieved belongingness may also be influenced by tacit associations with groups, as well as by one's construal of, or relationships with, objects, animals, nature, ideologies, and the spiritual—thereby transcending interpersonal relationships. Consistent with the extant literature, the GBS assesses belongingness across multiple levels of specificity ranging from close friends and family, to societal others, to an overarching sense of belonging that transcends interpersonal relationships.

In summary, our primary objective was to develop a brief and global measure of belongingness. Since the GBS is designed to assess achieved belongingness, we hypothesized that it would correlate only moderately with Need to Belong—a measure that partly suggests a need for additional social contact; since belongingness requires stable relationships, we expected it to relate to Big Five personality traits facilitating such relationships. No previous studies of belongingness have reported on these relations.

2. Study 1: scale development

Item construction for the GBS began by examining the literature for key words, phrases, themes, and instruments related to belongingness. We generated a pool of 30 items, 14 positive- and 16 negative-worded. A panel of graduate students examined the items for clarity, conciseness and readability. The items are scored using a 7-point Likert-type rating choice format ranging from *strongly disagree* to *strongly agree*.

The goal of Study 1 was to retain a preliminary set of 12 items. Item-retention criteria included: (a) high to moderate factor loadings; (b) item means from highest to lowest; (c) representation of all levels ranging from specific others to an overarching sense of belonging; (d) equal representation of positive- and negative-worded items; (e) internal item consistency; and (f) evidence of validity.

To assess convergent validity, participants completed measures of social connectedness (positively-valenced assessment) and loneliness (negatively-valenced assessment; belongingness thwarted). We expected adult attachment style to diverge from belongingness. Even though belongingness has theoretical roots in attachment theory, attachment styles tend to be relationship specific. We further expected achieved belongingness to be distinct from measures assessing the need to belong and social assurance. Consistent with theory, predictive validity was assessed by correlating the GBS with measures of life satisfaction, happiness and depression.

2.1. Method

2.1.1. Participants and procedure

Participants (for all of the studies reported below) were Introductory Psychology students at a university in the southwest USA who participated for partial course credit. The present sample ($N = 81$) consisted of 49% females, 48% males, and 3% unreported with a mean age of 20.4 years ($SD = 4.0$). Regarding ethnicity,

38% were Hispanic, 31% Caucasian, and 31% other. Institutional review board approval was obtained for each study, and informed consent was given at the outset of each session. Participants subsequently completed an online computer-delivered survey and were debriefed.

2.1.2. Measures

Coefficient alphas for Studies 1 through 3 are based on the current samples reported.

2.1.2.1. General belongingness item pool. Thirty initial items were written per the specifications noted earlier.

2.1.2.2. Social Connectedness Scale. This negative-worded 8-item measure, rated on a 6-point Likert scale, assesses how much a person feels they belong in social situations (Lee & Robbins, 1995). Items were reverse-scored. Coefficient alpha = .95.

2.1.2.3. Revised UCLA Loneliness Scale. This is a truncated, 10-item version of Russell's (1996) original 20-item scale. Rated on a 4-point Likert scale (*often* to *never*), it assesses how a person feels cut off from others. Items were reverse-scored. Coefficient alpha = .87.

2.1.2.4. Adult Attachment Questionnaire (AAQ). This 17-item measure, rated on a 7-point Likert scale, assesses two adult attachment styles: avoidance (8 items) is the tendency to avoid closeness in relationships; ambivalence (9 items) refers to conflicted feelings regarding whether others can be counted on in relationships (Simpson, Rholes, & Nelligan, 1992). Subscale coefficient alphas ranged from .81 to .74.

2.1.2.5. Need to Belong Scale. This 10-item measure, rated on a 5-point Likert scale, assesses the motivation to be accepted by others and avoid being shunned (Leary et al., 2006). Coefficient alphas ranged from .82 to .78.

2.1.2.6. Social Assurance Scale. This 8-item measure, rated on a 6-point Likert scale, assesses needs of reassurance from one or more persons. Lower needs indicate confidence in social situations (Lee & Robbins, 1995). Coefficient alphas ranged from .91 to .85.

2.1.2.7. Satisfaction with Life Scale. This 5-item measure, rated on a 7-point Likert scale, assesses global satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985). Coefficient alphas ranged from .93 to .87.

2.1.2.8. Subjective Happiness Scale. This 4-item measure, rated on a 7-point Likert scale, assesses global subjective happiness (Lyubomirsky & Lepper, 1999). Coefficient alphas ranged from .88 to .82.

2.1.2.9. Center for Epidemiologic Studies Depression Scale (CES-D). This 20-item measure uses a 0–3 scoring system to assess depressive symptomatology in the general public (Radloff, 1977). Coefficient alphas ranged from .91 to .88.

2.2. Results and discussion

An exploratory factor analysis (EFA) was conducted using maximum likelihood estimation for factor extraction with a direct oblimin rotation. The 30 items from the pool were entered and five factors were represented with eigenvalues greater than one in this initial extraction. However, low coefficients across Factors 3–5 indicated a 2-factor solution. Subsequent analyses resulted in a 2-factor solution accounting for 59.2% of the variance. Parallel analysis validated the 2-factor solution: Factors 1 and 2 real-data

Table 1
Exploratory factor analysis results in Study 1.

Items	Factor loadings	
	Factor 1	Factor 2
29...do not belong	.94	
17...outside looking in	.87	
12...outsider	.87	
26...do not have...place...world	.78	
6...isolated from...world	.77	
30...distant during...holiday season	.74	
23...stranger	.71	
5...social outcast	.71	
18...not belong...world	.70	
4...people do not care	.66	
10...needs...not fulfilled	.65	
25...people...make me feel...do not belong	.64	
20...wish...had more relationships	.64	
24...social outings...do not belong	.63	
16...do not belong...avoid...groups	.59	
11...friends...family...do not involve	.58	
14...place at the table		.91
13...feel accepted		.84
28...accepted by others		.83
27...feel welcome		.79
22...with other people...included		.77
9...feel connected		.77
21...important role...my relationships		.75
3...sense of belonging		.68
7...fit amongst...friends...family		.67
19...close bonds...friends...family		.66
15...belong		.66
2...feel included		.62
1...have relationships...share feelings		.60
8...holiday season...sense of belonging		.59

Note. Loadings <.40 are not reported. Bold items are the final 12 retained items.

eigenvalues = 13.81 and 3.69, versus randomly generated eigenvalues = 2.35 and 2.13, respectively. Standardized coefficients ranged from .94 to .58 (see Table 1). The inter-factor correlation was $-.52$. Factor 1 consisted of negative-worded items and Factor 2, positive-worded items.

The 12 items retained from the pool of 30 were chosen to represent belongingness across the construct by ensuring variability across the factor loadings, item means, and content structure. From each of the two factors, an equal representation of six positive- and six negative-worded items were retained. Factor analyses were replicated using the 12 items alone, and a similar 2-factor solution was obtained using EFA and validated using parallel analysis. The factors accounted for 68.3% of the variance and standardized coefficients ranged from .92 to .66. The inter-factor correlation was $-.67$. Based on the content of the factors, Factor 1 was labeled, "Rejection/Exclusion", and Factor 2, "Acceptance/Inclusion".

Given the high inter-factor correlation, negative-worded items were reversed-scored (i.e., items indicate a lack of *Rejection/Exclusion*) and the scale was treated as one instrument. Reliability was high: Coefficient alpha = .94 and average inter-item correlation (AIC) = .57 ($M = 66.3$, $SD = 13.5$). Evidence of convergent and predictive validity was strong, and evidence of discriminant validity was obtained as expected (see Table 2).

3. Study 2: scale analyses

Study 2 was conducted to satisfy two objectives. First, it was designed to examine the properties of the GBS using an appropriately large sample, and to finalize the development of the instrument. Toward this end, to further establish convergent validity we added a measure of general sense of belonging and employed a different measure of loneliness (i.e., the SOBI-P and ULS-8, respectively). To further establish discriminant validity, we added a second measure of adult attachment styles and a measure assessing the motivation

Table 2
Zero-order validity correlations in Studies 1–3.

Variables	General Belongingness Scale (GBS)		
	Study 1	Study 2	Study 3
<i>Convergent validity</i>			
Social Connectedness	.73**	.88**	–
Loneliness ^a	–.66**	–.80**	–.74**
SOBI-P	–	.86**	.64**
<i>Discriminant validity</i>			
Need to Belong	–.22*	–.25**	–.29**
Social Assurance	–.15	–.04	.04
AAQ Avoidance	–.58**	–.55**	–.44**
AAQ Ambivalence	–.43**	–.57**	–.42**
ECR-S Anxious	–	–.45**	–
ECR-S Avoidance	–	–.40**	–
SOBI-A	–	.26**	–
<i>Predictive validity</i>			
Life Satisfaction	.61**	.59**	.55**
Happiness	.67**	.67**	.60**
Depression	–.61**	–.64**	–.47**

^a Study 1 used a truncated version of the UCLA-20; Studies 2 and 3 used the ULS-8.

** $p < .01$.

* $p < .05$.

to belong (i.e., the ECR-S and SOBI-A, respectively). See Section 3.1.2 for additional information.

Second, a brief measure of the Big Five was administered to explore the foundations of belongingness in personality. No previous study has reported on these associations; however, there is literature linking the Big Five to constructs associated with belongingness. A sampling to illustrate those associations include adult attachment styles, global self-esteem (self-evaluation via how one is regarded and accepted by others), and collegiate relationships. For example, neuroticism correlates positively with anxious adult attachment and negatively with global self-esteem; extraversion correlates negatively with avoidant adult attachment and positively with global self-esteem (Donnellan, Burt, Levendosky, & Klump, 2008; Watson, Suls, & Haig, 2002); and extraversion, agreeableness and conscientiousness correlate positively with the number and quality of college students' relationships (Asendorpf & Wilpers, 1998).

There are also theoretical reasons for expecting belongingness to relate to the Big Five. Individuals high in extraversion are motivated to seek interpersonal relationships and social situations; individuals high in agreeableness are cooperative and trusting of others; and conscientious individuals tend to be dutiful and loyal. Each of those three factors should facilitate the establishment of long term, stable and positive relationships critical to a sense of belonging (Baumeister & Leary, 1995). In contrast, individuals high in neuroticism tend to experience anxiety and depression—both of which pose problems for maintaining positive, stable relationships, thus thwarting belongingness. Since openness is not generally relationship oriented, that trait is not expected to significantly influence belongingness.

3.1. Method

3.1.1. Participants

The sample ($N = 875$) consisted of 62% females and 38% males with a mean age of 19.3 years ($SD = 3.1$). Regarding ethnicity, 41% were Hispanic, 35% Caucasian, and 24% other.

3.1.2. Measures

For Study 2, the following instruments were added to those used in Study 1 (for previously used measures, see Study 1 for descriptions and Table 2 for a list).

3.1.2.1. General Belongingness Scale. This 12-item measure, rated on a 7-point Likert scale, assesses a general sense of belonging. Participants completed the measure at one of various points in the battery in addition to again completing the 30-item pool. Note that the 12-item measure and the item pool were separated by other measures.

3.1.2.2. Sense of Belonging Instrument–Psychological Experiences (SOBI-P). This 18-item measure (17 negative-worded), rated on a 4-point Likert scale, assesses a sense of belonging (Hagerty & Patusky, 1995). Negative-worded items were reversed-scored. Coefficient alphas = .96 and .94.

3.1.2.3. Short version of the UCLA Loneliness Scale (ULS-8). This 8-item measure, rated on a 4-point Likert scale, assesses how a person feels cut off from others (Hayes & DiMatteo, 1987). Lonely-directed items were reversed-scored. Coefficient alphas = .87 and .86.

3.1.2.4. Experiences in Close Relationships–Short Form (ECR-S). This 12-item measure, rated on a 7-point Likert scale, assesses avoidance and anxious adult attachment dimensions (Wei, Russell, Mallinckrodt, & Vogel, 2007). The ECR-S differs from the AAQ in that many items assess more intimate relationships, whereas the AAQ assesses more general relationships. Subscale coefficient alphas = .77 and .76.

3.1.2.5. Sense of Belonging Instrument–Antecedents (SOBI-A). This 14-item measure, rated on a 4-point Likert scale, assesses the potential and energy for meaningful involvement with others (Hagerty & Patusky, 1995). Coefficient alpha = .79.

3.1.2.6. Ten-Item Personality Inventory. This 10-item measure, rated on a 7-point Likert scale, assesses the Big 5 constructs using one positive and one negative item per dimension. Convergent validity has been established with the Big Five Inventory (Gosling, Rentfrow, & Swann, 2003).

3.2. Results and discussion

To estimate model fit and allow for exploratory model modifications if needed, the sample ($N = 875$) was randomly split into two independent sub samples. The first subsample was treated as exploratory; the second was used to test for model fit given any modifications made on the exploratory subsample. Data were analyzed using maximum likelihood estimation (ML) in Mplus 6.1 (Muthén & Muthén, 1998/2010). The following goodness-of-fit indices and cutoffs were used to identify a well-fitting model: Comparative fit index (CFI) and Tucker–Lewis index (TLI) values of .90 or greater; root mean square error of approximation (RMSEA) values of .08 or lower; and standardized root mean square residual (SRMR) values of .05 or lower. Based on the EFA results of Study 1, a 2-factor model was specified with items loading onto either an *Acceptance/Inclusion* factor or a *Rejection/Exclusion* factor. The initial fit of the model in the exploratory sample ($N = 440$) met criteria on three of four fit indices. Upon further inspection, high inter-item residual correlations were noted among three items: *I fit amongst friends and family*; *I have close bonds with friends and family*; *I have a place at the table with others*. After allowing paired correlated errors between those items, fit indices were met on all four criteria. Using the independent sample ($N = 435$), the modified model was tested and was found to fit the data well (CFI = .97; TLI = .96; RMSEA = .08; SRMR = .03).

Reliability was high: Coefficient alpha = .95 and AIC = .62 ($M = 69.4$, $SD = 14.1$). Convergent validity was demonstrated as the GBS correlated strongly with other measures of belongingness and loneliness. With respect to discriminant validity, the GBS was

Table 3

The final General Belongingness Scale (GBS) and CFA factor loadings.

Item number	Item description	Loadings
<i>Acceptance/Inclusion</i>		
1	When I am with other people, I feel included	.70
2	I have close bonds with family and friends	.67
5	I feel accepted by others	.65
8	I have a sense of belonging	.67
10	I have a place at the table with others	.70
11	I feel connected with others	.78
<i>Rejection/Exclusion (items are reverse-scored)</i>		
3	I feel like an outsider	.78
4	I feel as if people do not care about me	.66
6	Because I do not belong, I feel distant during the holiday season	.77
7	I feel isolated from the rest of the world	.82
9	When I am with other people, I feel like a stranger	.79
12	Friends and family do not involve me in their plans	.66

Note. Loadings are standardized. The items for the scale reported above may be used for research purposes.

shown to be distinct from need/motivation to belong and social assurance. Since the AAQ assesses general adult attachment and the ECR-S assesses more intimate relationships, it is reasonable that the AAQ subscales related more strongly to the GBS than the ECR-S subscales. Evidence of predictive validity was obtained (see Table 2 for validity estimates). Evidence of incremental validity was also obtained. In a series of hierarchical regressions, the GBS explained substantial incremental variance in life satisfaction, happiness, and depression over and above Social Connectedness, the SOBI-P, and ULS-8 (across criterion measures, average $\Delta R^2 = 8.0\%$, 4.8% , and 6.8% , respectively), all $ps < .001$.

Regarding links to personality, the GBS showed strong to moderate associations with extraversion and emotional stability, and moderate to weak correlations with conscientiousness, agreeableness, and openness (see Table 4 for correlations and standardized betas based on regressing the traits onto the GBS). The current findings support conducting a more extensive evaluation of the Big Five associations with the GBS—an evaluation that we undertake in Study 3.

Across Studies 1 and 2, high reliability and strong patterns of validity estimates provided overall confidence in the GBS; however, to compensate for the modifications necessary to provide an adequate fitting model, one positive and one negative item were replaced.

4. Study 3: scale validation

Two objectives guided the design of Study 3: first, to confirm that the GBS continued to demonstrate convergent, discriminant, and predictive validity after changing two of the items, and to show that these changes eliminated the need for correlated errors; second, to further evaluate the relationship of belongingness (as measured by the GBS) with the Big Five personality constructs. Study 2 provided preliminary data using a brief Big Five measure; Study 3 was designed to assess associations with the Big Five using a full, well-validated instrument.

4.1. Method

4.1.1. Participants

The sample ($N = 213$) consisted of 58% females and 42% males with a mean age of 20.1 years ($SD = 3.7$). Regarding ethnicity, 44% were Caucasian, 38% Hispanic, and 18% other.

Table 4
Zero-order and simultaneous regression results of the Big Five and GBS.

Big Five Variables	General Belongingness Scale (GBS)	
	<i>r</i>	β
<i>Study 2</i>		
Emotional stability	.41**	.24***
Extraversion	.50**	.40***
Agreeableness	.26**	.11***
Conscientiousness	.36**	.18***
Openness	.30**	.01
<i>Study 3</i>		
Neuroticism	-.51**	-.40***
Extraversion	.46**	.33***
Agreeableness	.30**	.19**
Conscientiousness	.26**	.06
Openness	-.04	-.16**

*** $p < .001$;

** $p < .01$.

4.1.2. Measures

To establish validity, Study 3 used the same measures described in Study 2 (see Table 2) with the following exceptions: we removed the Social Connectedness Scale, ECR-S, and SOBI-A; and we added the Big Five Inventory (BFI). The BFI is a 44-item measure rated on a 5-point Likert scale that assesses the personality factors of Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness (John, Donahue, & Kentle, 1991). Subscale coefficient alphas ranged from .82 to .68.

4.2. Results and discussion

The 2-factor model was tested using confirmatory factor analysis (CFA). Given the non-normal distribution of one item (skewness ≥ 2.0 ; kurtosis ≥ 6.0), we used the robust maximum likelihood estimation method (MLR) in the Mplus 6.1 program. The factors were allowed to be correlated; the errors were not. The model provided a good fit to the data (Robust $\chi^2(53) = 92.49$, $p = .001$, scaling = 1.43; Robust CFI = .95, TLI = .94, RMSEA = .059, 90% CI = .038–.079, SRMR = .040; see Table 3 for a list of the final items). Because of the high inter-factor correlation (–.90), the 2-factor model was compared to a 1-factor model. A chi-square difference test (i.e., Satorra-Bentler scaled chi-square) supported the 2-factor model, $\chi^2_{diff}(1) = 10.89$, $p < .001$.

Reliability was high: Coefficient alpha = .92 and AIC = .49 ($M = 70.0$, $SD = 10.9$). Patterns of validity estimates were strong (see Table 2). A *t*-test showed no significant differences in the means by gender. Using the Microsoft® Word program, readability of the instrument was assessed at the 4th grade level (Flesch-Kincaid Grade Level = 3.7).

Further analyses examined the 2-factor solution obtained across the three studies. Given the high inter-factor correlation, it was expected that the *Acceptance/Inclusion* factor would correlate similarly with the variables in Table 2 (e.g., loneliness, happiness, etc.) as would the *Rejection/Exclusion* factor. Indeed the differences in how the factors correlated with other measures were very small ($M_{diff} = .056$, $SD = .036$, and $M_{diff} = .069$, $SD = .033$, in the zero-order correlations for Studies 2 and 3, respectively). However, there may be small but theoretically important differences in how the factors predict well-being. When entered as two predictors in simultaneous regressions, *Acceptance/Inclusion* strongly predicted life satisfaction and happiness whereas *Rejection/Exclusion* strongly predicted depression (see Fig. 1). These results are consistent with the hierarchical model posited by Elliot (2006). He claimed that to obtain goals (e.g., belongingness) humans rely on dual psychological processes based on approach and avoidance. Speculatively, our

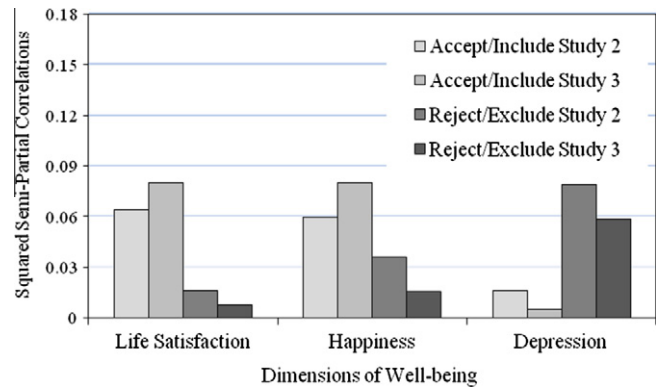


Fig. 1. The Accept/Include and Reject/Exclude dimensions of the GBS, entered as simultaneous predictors, differentially predict positive (i.e., life satisfaction, happiness) versus negative (i.e., depression) assessments of well-being. The semi-correlations represented are significant, $ps < .05$, excepting Study 3–Accept/Include with depression and Reject/Exclude with life satisfaction.

regression results suggest the *Acceptance/Inclusion* factor better taps the approach-based processes, whereas the *Rejection/Exclusion* factor better taps the avoidance-based processes.

As in Study 2, incremental validity was established: the GBS explained incremental variance for life satisfaction and happiness controlling for the SOBI-P ($\Delta R^2 = 10.3\%$ and 9.9%), and in separate analyses, explained 5.4% and 6.4% additional variance after controlling for the ULS-8, all $ps < .001$. The GBS did not account for significant incremental variance in depression as it did in Study 2, perhaps because the negatively worded items that dominate the SOBP-I and ULS-8 tend to adequately capture variance in negatively-valenced criterion variables.

Next we tested the relationships between the Big Five and the GBS. Consistent with the literature and findings of Study 2, it was expected that extraversion, agreeableness and conscientiousness would relate positively to the GBS, and neuroticism would relate negatively. No a priori predictions were made regarding openness. Bivariate and simultaneous regression results supported those predictions, with the strongest effects emerging for neuroticism, extraversion, and agreeableness. The zero-order correlation between conscientiousness and belongingness was significant as predicted; however, unlike Study 2, conscientiousness did not contribute uniquely when entered in a simultaneous regression (see Table 4). When entered together, the Big Five explained 43% of the variance.

These results demonstrate that the Big Five are important predictors of belongingness. The data show that individuals high in extraversion and agreeableness, given their tendency toward positive interpersonal and social interactions, also report high levels of belongingness. In stark contrast, individuals high in neuroticism who struggle with feelings adversely associated with interpersonal and social acceptance (e.g., anxiety, depression, vulnerability, etc.) notably report lower levels of belongingness. The results highlight that there are benefits associated with tendencies to push toward positive social interactions while successfully regulating other tendencies.

5. Conclusion

Further research is needed to determine if a 2-factor solution replicates across populations and to determine whether this solution is founded upon approach/avoidance-based psychological processes. Nevertheless, it is clear that the use of dual-valenced items in the scale systematically increases incremental validity, and clear that the highly inter-correlated factors can be combined to form a

unidimensional, parsimonious scale for most applications. Given issues of developmental staging, one might speculate that belongingness in college students predicts well-being more strongly than in other populations. Hence, future research should include non-collegiate samples, and should employ additional measures for establishing construct and predictive validity.

This research is the first to demonstrate that a measure of achieved belongingness is conceptually distinct from the need to belong. It is also the first to examine relations with the Big Five where it produced findings that were consistent with related studies and theoretical expectations. In total, the data support that the GBS is a valid and reliable measure of achieved belongingness.

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References

- Anant, S. S. (1966). The need to belong. *Canada's Mental Health, 14*, 21–27.
- Asendorpf, J. B., & Wilpers, S. (1998). Personality effects on social relationships. *Journal of Personality and Social Psychology, 74*, 1531–1544.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.
- Baumeister, R. F., & Tice, D. M. (1990). Anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9*, 165–195.
- Choenarom, C., Williams, R. A., & Hagerty, B. M. (2005). The role of sense of belonging and social support on stress and depression in individuals with depression. *Archives of Psychiatric Nursing, 19*, 18–29.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71–75.
- Donnellan, M. B., Burt, S. A., Levensky, A. A., & Klump, K. L. (2008). Genes, personality, and attachment in adults: A multivariate behavioral genetic analysis. *Personality and Social Psychology Bulletin, 34*, 3–16.
- Durkheim, E. (1897/1963). *Suicide*. New York: Free Press.
- Elliot, A. J. (2006). The hierarchical model of approach–avoidance motivation. *Motivation and Emotion, 30*, 111–116.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. Jr. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504–528.
- Hagerty, B. M., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing, 6*, 172–177.
- Hagerty, B. M., & Patusky, K. (1995). Developing a measure of sense of belonging. *Nursing Research, 44*, 9–13.
- Hayes, R. D., & DiMatteo, M. R. (1987). A short-form measure of loneliness. *Journal of Personality Assessment, 51*, 69–81.
- John, O. P., Donahue, E. M., Kentle, R. L. (1991). The Big Five Inventory—Versions 4a and 54. Berkeley: University of California, Berkeley, Institute of Personality and Social Research.
- Leary, M.R., Kelly, K.M., Cottrell, C.A., & Schreindorfer, L.S. (2006). Individual differences in the need to belong: Mapping the nomological network. Unpublished manuscript, Wake Forest University.
- Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The Social Connectedness Scale and the Social Assurance Scale. *Journal of Counseling Psychology, 42*, 232–241.
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research, 46*, 137–155.
- Muthén, L.K., & Muthén, B.O. (1998/2010). Mplus 6.1. Los Angeles, CA.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.
- Russell, D. (1996). The UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment, 66*, 20–40.
- Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology, 62*, 434–446.
- Watson, D., Suls, J., & Haig, J. (2002). Global self-esteem in relation to structural models of personality and affectivity. *Journal of Personality and Social Psychology, 83*, 185–197.
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-Short Form: Reliability, validity, and factor structure. *Journal of Personality Assessment, 88*, 187–204.