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An Analysis of Self: The Development and Assessment of a Measure of Selfobject Needs

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ABSTRACT

Based on the psychoanalysis of adults with borderline and narcissistic personality disorder symptoms, Kohut (1971, 1977, 1980, 1984) formulated a theory of self psychology that emphasized the importance of early developmental experiences; most centrally, the empathic attunement of caregivers as key ingredients for fostering the capacity for healthy self-regulation and interpersonal relations. Kohut elaborated 3 critical selfobject needs (i.e., idealizing, mirroring, and twinship) that were ideally satiated by these early experiences, deeming the fulfillment of these needs as essential for developing a healthy sense of self. The research presented here sought to develop a self-report measure, titled the Arble Estimate of Selfobject Pursuits (AESOP), capable of assessing the selfobject needs identified by Kohut. Across 2 studies involving 686 and 672 respondents, participants completed the AESOP. In the first study, an exploratory factor analysis supported the theorized 3-factor structure. In the second study, a confirmatory factor analysis indicated adequate-to-strong model fit and cluster analysis with theoretically related measures supported the AESOP's discriminant and convergent validity. Further research is encouraged to elaborate the implications of these preliminary findings.

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Psychoanalyst Heinz Kohut (1971, 1977, 1980, 1984) theorized that the self was the core of personality and motivation. He hypothesized that for mentally healthy adults, the self carries out the functions of self-soothing, emotion regulation, and forming and maintaining mature differentiated relationships. His theory became known as self psychology, and at the heart of his theory was the assertion that experiences with caregivers over the course of development were meaningfully intertwined with the expression of core needs that were essential to regulating an individual's sense of self.

In many respects, the self psychology advanced by Kohut (1971) in *The Analysis of the Self* reflected an expansion of the psychoanalytic schools of ego and drive theory. When he developed it, Kohut was a training analyst at the Chicago Psychoanalytic Institute, working from the traditional Freudian approach. However, in the pivotal case of "Miss F.," Kohut (1971) detailed his increasing frustration with the therapeutic modalities of the time. He noted that in the course of treatment, the strategy of interpreting resistance proved frustrating and unsuccessful. Instead, Kohut (1971) would later conclude that a specific form of empathic attunement was required: "I came to the crucial recognition that the patient demanded a specific response … and … completely rejected any other" (pp. 285–286).

In part based on such clinical experiences, Kohut began to conceptualize the self as the core subject of intervention, in turn deemphasizing the centrality of sexual and aggressive drives. Kohut theorized a set of three needs that characterize the self and organize caregiver sensitivity and responsiveness to the developing self. In this manner, these needs necessitate particular forms of interactions with caregivers. Kohut ultimately characterized this set of needs and the resulting interdependence of self and other via the concept of a selfobject, the single most critical aspect of his self psychological approach. As the concept of the selfobject became increasingly central to Kohut's theoretical framework, his description of the term became progressively more nuanced. Kohut (1971) initially described selfobjects as each individual's perceived interactions with "objects which are themselves experienced as part of the self" (p. iv), later altering the concept to focus not on the outside object or person, but rather, on the function that object or person played in maintaining one's sense of self.

This development was paralleled by Kohut's progression in his model of the self, initially theorized to have a bipolar structure comprised of ambitions and ideals (nurtured by the fulfillment of distinct selfobject needs), but later expanded following the addition of a new selfobject need and the development of a tripolar model of the self: (a) a desire for recognition and power (mirroring), (b) a need for idealized goals and idols (idealizing), and (c) a need for kinship and bonding (twinship). By fulfilling the selfobject needs of mirroring, twinship, and idealizing, Kohut thought that caregivers promote their children's developing self's attributes of cohesiveness (an enduring experience of the self as whole), vigor (feeling empowered to face the world), and harmony (a capacity to soothe oneself). Conversely, thwarting these selfobject needs would give rise to pain, depression, anxiety, anger, rage, and shame (Kohut, 1984).

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Kohut's view of psychopathology as arising from disrupted selfobject experiences is most prominently evident in his view of narcissism. Kohut articulated a view of narcissism as existing on a continuum, ranging from healthy to pathological, derived in either case from the fulfillment or forfeiture of selfobject needs. Healthy narcissism was conceptualized as a core source of creativity and power that, if properly nurtured, could result in a stable sense of self and a corresponding sense of self-esteem and energy. In the form of mature narcissism, he posited, one grows to accept this sense of interdependence between self and other (i.e., the continued need for selfobjects). Conversely, Kohut believed that the pathological form of narcissism was evidenced by extreme self-preoccupation and a lack of self-cohesion. Kohut described pathologically narcissistic individuals as often finding themselves at the mercy of shame or humiliation, and in response, they crafted a defensive shell of grandiose fantasies of self-importance. Most important, these individuals would view others not as autonomous individuals, but as a tool to have one's own needs met. Moreover, this compensatory strategy was viewed as fragile and prone to break under stress, resulting in significant, clinical emotional dysregulation. Kohut's theory of pathological narcissism portrayed a more vulnerable character than the grandiose narcissistic pathology presented in contemporary diagnostic nosologies such as the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed. [*DSM–5*]; American Psychiatric Association, 2013). Although both characterizations describe a desire to be seen as possessing a worth beyond that of a normal person, grandiose narcissists are expected to freely express their arrogance, whereas vulnerable narcissists worry that others will react negatively if they embrace their immodesty. The notion of two extreme and potentially shifting forms of narcissism, that of the popularized grandiose form and the vulnerable form suggested by Kohut, has become increasingly supported by empirical research (e.g., Dickinson & Pincus, 2003; Fossati, Feeney, Pincus, Borroni, & Maffei, 2015; Gabbard, 1989; Pincus et al., 2009). In addition to narcissistic pathology, Kohut gave particular attention to the concept of shame. As one might expect, Kohut described this sense of shame as arising from the incongruent responses of important selfobjects. Failure to experience the needed selfobject responsiveness leaves the child feeling vulnerable, and the child might respond by retreating from the outside world, becoming more introverted and withdrawn (Morrison, 1994).

Mirroring selfobject need

Kohut (1971) was profoundly impressed by the importance of young children's desire to revel in their accomplishments and to have this satisfaction shared by their parents and caregivers. As conceptualized by Kohut, children have the desire to achieve something, to enjoy a sense of pride related to their accomplishment, and to then have the parents mirror that sense of pride. It is thus in this desire of the child to capture the "gleam in the mother's eye" (p. 116) that the mirroring selfobject is named. Consistently receiving such positive acceptance and recognition of their own worth will allow the child to internalize a sense of self-esteem, thereby providing grounds for a sense of vitality and worth (Silverstein, 1999). Such mirroring will ultimately be internalized as a person's sense of goals and ambitions as he or she moves toward adulthood.

Idealizing selfobject need

Just as the child requires the admiration of the parent, Kohut (1971) also described the child's need to idealize the parent. In this process, the child seeks to identify with an agent more capable than himself or herself. Although the child needs to have his or her own sense of power, he or she also looks to the parents as beings of enormous strength, a kind of idealized role model. In theory, the child begins to view the parent as an invincible and idealized figure, and this admiration of the parent will ultimately enhance the child's sense of self. Thus, the child derives an enhanced sense of worth through his or her connection with the parent through something of an unconscious syllogism: "You are a powerful being, I am part of you, and therefore I am powerful, too."

Twinship selfobject need

Kohut's (1984) last work would offer a third selfobject experience referred to as a twinship need, which Kohut had initially described as a component of the mirroring transference. Kohut described twinship as the need to experience a fundamental sense of "alikeness" from the world around us, a sense of belonging and participating. It serves as a confirmation that one belongs with others, that one is part of the group, as opposed to a solitary and separate individual. Following from such unity, Kohut posited, was a sense of self-worth and identity.

Empirical research

Despite Kohut's influence in the treatment of mental health problems, especially with narcissistic pathologies (e.g., Gabbard, 2000; Hibbard, 1992; Wink, 1991), there have been relatively few efforts to operationalize his theories. Notable examples include two standardized scales: the Superiority and Goal Instability Scale (Robbins & Patton, 1985) and the Social Connectedness and Social Assurance Scales (Lee & Robbins, 1995).

The most relevant effort pertaining to this study is the Selfobject Needs Inventory (SONI; Banai, Mikulincer, & Shaver, 2005). The SONI was designed as a measure of the selfobject needs of idealizing, mirroring, and twinship, with Banai et al. (2005) further conceptualizing each of these dimensions as having an approach pole and an avoidance pole. In its initial validation study, a six-factor measure was anticipated (i.e., three dimensions, each with two facets), although ultimately a five-factor model was retained. Empirical research has indicated that the need for mirroring scale of the SONI is related to attachment anxiety ($r = .40$, $p < .001$) and self-esteem instability ($r = .37$, $p < .001$; Lopez et al., 2013), although surprisingly, the avoidance of mirroring was negatively related to self-judgment ($r = -.18$, $p < .05$) and positively related to self-kindness ($r = .18$, $p < .05$). In a clinical sample, Marmarosh and Mann (2014) found a positive correlation between the need for mirroring and patient symptoms ($r = .27$, $p < .05$), although

selfobject needs did not account for significant variance beyond attachment in the prediction of symptoms, nor were they related to measures of therapeutic alliance.

These results provided partial support for the SONI's validity. However, its scales have produced less than ideal Cronbach's alphas (e.g., ranging from .60 to .86 in the research of Lopez et al., 2013) as well as unsupportive dissertation research (Bastanfar, 2009; Canepa, 2011; Gruber, 2009). Consequently, the efforts presented here were undertaken to develop an alternative measure of selfobject needs along with assessing the SONI's underlying structure and both measures' associations with theoretically relevant constructs.

This study

We think it is unfortunate that Kohut's heuristically rich theory of self, development, and psychotherapy has not received more empirical attention and contend that the scarcity of empirical attention devoted to Kohut's hypotheses has been due to challenges operationalizing his concepts, especially his idea of the selfobject needs. To address these measurement shortcomings, we sought to further develop a self-report measure, which we named the Arble Estimate of Selfobject Pursuits (AESOP), capable of assessing the selfobject needs proposed by Kohut. The proposed strategy was designed to yield a measurement alternative to the SONI that might assess more reliably and validly the individual differences in the selfobject needs of idealizing, mirroring, and twinship. Consequently, the reliability and validity of the SONI and AESOP scales were explored through factor analysis and by placing them within a broader nomological network of theoretically related constructs and mental health symptoms. Specifically, the AESOP's relations with measures of shame, narcissism, and general psychopathology were considered. These tasks were accomplished across two separate studies.

Study 1

Method

Item generation

The initial task in creating a measure designed to assess the selfobject needs of idealizing, mirroring, and twinship was to create an item pool capable of covering the elements of these domains. As such, an extensive review of the self psychology literature, published case studies, and clinical reviews of self psychological theory was undertaken to create a list of potential items. In generating items, efforts were made to avoid items that had inherent overlap with mental health symptoms and questionnaires. For example, items such as "I sometimes struggle with my self-esteem" might be relevant for individuals who experienced a lack of mirroring, but such an item would overlap too directly in content with items found on measures of depression or self-esteem. We also avoided building in redundancy to the scales so that internal consistency reflected more directly an underlying construct rather than large numbers of items that are similarly worded. The items were then distributed to a "rating team" consisting of five clinical psychologists with expertise in self psychology. Subsequent to rater review, 25 Idealizing items (e.g., "I sometimes dream or fantasize about meeting famous or influential people"), 24 Mirroring items (e.g., "I feel that people do not appreciate the struggles I've had to face"), and 21 Twinship items (e.g., "It helps me to be around people going through the same things that I am going through") were retained.

Participants

The first study used a convenience sample of undergraduate students recruited from a Midwestern university. Participants were offered the incentive of extra credit in their courses in exchange for participation. A total of 738 individuals participated. The mean age of the participants was 22.22 years (SD = 5.40, range = 16–62 years). The sample was ethnically diverse, including White (36%), African American (20%), Arab American (17%), and Asian American (14%) respondents. Women (71%) outnumbered men.

Procedure

Participants completed the survey online using a university-secured research portal. They were informed that they were participating in a research study assessing people's view of themselves, and explicitly informed that the purpose of the study was to create a measure of psychological needs. Participation consisted solely of completing the 70 items of the AESOP, each rated on a 7-point scale ranging from 1 (*not at all true of me*) to 7 (*very true of me*). Because the survey was hosted online, participants could complete the measure at the time and location of their choice. The survey was hosted as forced choice, meaning that respondents had to provide responses to every item.

A total of 738 participants completed the measure. After review of the responses, 52 respondents were removed from the analysis. These participants' data were removed if the respondent reported an age of under 18 years (n = 3), if the respondent completed the present measure in less than 4 min (a 4-min completion time placed these respondents in the 99th percentile of completion time; n = 43), or if all responses were identical or nearly identical (e.g., responding with all 1s; n = 6). This reduced the sample for analysis to 686 respondents.

Results

Exploratory factor analysis

A maximum likelihood exploratory factor analysis (EFA) was conducted on the 70 items. Based on preestablished criterion, items were deleted under the following conditions: significant loadings on multiple factors, failure to load significantly on a single factor, item–total correlations of lower than .4 with items on the same factor, and the item's removal would result in an increase to Cronbach's alpha. Items were viewed to load significantly on a factor if the factor loadings were .32 or above (Costello & Osborne, 2005; Izquierdo, Olea, & Abad, 2014; Tabachnick & Fidell, 2007). Based on these criteria, 11 mirroring items, 15 idealizing items, and 13 twinship items were deleted.

Following the removal of these items, the underlying factor structure of the measure was reviewed. A parallel analysis with 100 replications was conducted using a sample size of 686 respondents and 31 variables. Based on this analysis, three

Table 1. Rotated exploratory factor solution of remaining Arble Estimate of Selfobject Pursuits items.

	Pattern			Structure		
Item	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Idealizing 1		.50			.49	
Idealizing 3		.56			.57	
Idealizing 6		.66			.68	
Idealizing 7		.42			.47	
Idealizing 12		.61			.65	
Idealizing 13		.34			.40	
Idealizing 17		.59			.61	
Idealizing 19		.35			.37	
Idealizing 20		.58			.60	
Idealizing 23		.38			.41	
Mirroring 2	.64			.65		
Mirroring 3	.69			.71		
Mirroring 7	.69			.68		
Mirroring 9	.53			.57		
Mirroring 11	.51			.54		
Mirroring 12	.67			.65		
Mirroring 13	.77			.77		
Mirroring 14	.72			.75		
Mirroring 15	.75			.77		
Mirroring 18	.56			.60		
Mirroring 20	.56			.61		
Mirroring 21	.71			.70		
Mirroring 24	.67			.70		
Twinship 1			.63			.71
Twinship 2			.59			.61
Twinship 3			.57			.59
Twinship 4			.65			.72
Twinship 5			.42			.43
Twinship 6			.36			.36
Twinship 8			.57			.63
Twinship 17			.58			.60

Note. Loadings of under .32 are not indicated.

factors were retained, with eigenvalues of 8.53, 3.97, and 1.87. These values exceeded the 95th percentile eigenvalues produced in the parallel analysis (1.42, 1.36, and 1.32). The fourth eigenvalue produced by the parallel analysis (1.29) was not exceeded. These three factors accounted for 27.5%, 12.8%, and 6.0% of the variance, respectively. To aid in the interpretation of these factors, a direct oblimin rotation was performed. The rotated solution is presented in Table 1. The remaining items were found to sort into the predefined categories of the three selfobject needs. As can be seen, the strength of these loadings was highly variable.

All three of the scales produced acceptable internal consistency. The 10-item Idealizing scale produced a Cronbach's alpha of .79, the 13-item Mirroring scale produced a Cronbach's alpha value of .91, and the 8-item Twinship scale produced a Cronbach's alpha of .80.

Study 2

Method

Participants

The second study also used a convenience sample of undergraduate students from the same Midwestern university. Participants were offered the incentive of extra credit in their courses in exchange for participation. A total of 712 individuals participated. The mean age of the participants was 21.69 years (SD = 5.35, range = 16–58 years). The sample was ethnically diverse, including White (35%), African American (21%), Arab American (16%), and Asian American (15%) respondents. Women (71%) outnumbered men.

Procedure

Study 2 procedures were similar to those of Study 1, using the same methodology, and enjoying the same benefits (e.g., requiring participants to complete all of the requested items). In addition to the 31-item AESOP, however, participants also completed several additional measures. After review of the responses, 40 respondents were removed from the analysis (using the aforementioned criteria, including a completion time in the 99th percentile). This reduced the present sample to 672 respondents.

Measures

Narcissistic Personality Inventory. The Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979) is a measure of grandiose narcissism derived from the *DSM–III* (American Psychiatric Association, 1980) criteria for Narcissistic Personality Disorder. It consists of 40 items, presented as forced-choice dilemmas—with one option reflecting narcissistic tendencies. The NPI has demonstrated strong internal consistency (Raskin & Terry, 1988), convergent validity (Emmons, 1984), and discriminant validity (Biscardi & Schill, 1985).

Hypersensitive Narcissism Scale. The Hypersensitive Narcissism Scale (HSNS; Hendin & Cheek, 1997) is a measure of vulnerable narcissism adapted from Murray's (1938) 20-item Narcissism Scale. The HSNS consists of 10 items, using a 5-point Likert scale, with answers ranging from 1 (*not true of me*) to 5 (*very true of me*). In its initial validation study, Hendin and Cheek (1997) found that the HSNS demonstrated adequate internal consistency, convergent validity, and discriminant validity. Similar research has found that the HSNS is correlated with neuroticism (Hendin & Cheek, 1997), an anxious attachment style (Besser & Priel, 2009), and shyness (Gleason, Jarudi, & Cheek, 2003).

Harder Personal Feelings Questionnaire. The Harder Personal Feelings Questionnaire (PFQ2; Harder & Zalma, 1990) is a 22-item instrument measuring the constructs of shame and guilt. It employs a 5-point Likert-type scale, with answers ranging from 0 (*never*) to 4 (*continuously or almost continuously*). Higher scores indicate a greater level of proneness toward the given construct. Analyses of the PFQ2 have provided evidence of construct validity (Harder, Rockart, & Cutler, 1993), internal consistency (Corcoran & Fischer, 2000), and reliability (Harder & Zalma, 1990).

Brief Symptom Inventory. The 53-item BSI (Derogatis & Melisaratos, 1983) is a revised and shortened version of the Symptom Checklist–90–Revised (SCL–90–R), with answers ranging from 0 (*not at all*) to 4 (*extremely*). It covers nine clinical areas: somatization, obsessive–compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The BSI has demonstrated

strong internal consistency, reliability (Derogatis & Melisaratos, 1983), and convergent validity (Recklitis & Rodriguez, 2007).

Selfobject Needs Inventory. The SONI (Banai et al., 2005) is a 38-item self-report measure, with answers ranging from 1 (*not at all*) to 7 (*very much*). Five factors derived from Kohut's theory of selfobject needs were identified: hunger for twinship, avoidance of mirroring, hunger for idealization, hunger for mirroring, and a combined factor of avoidance of twinship and avoidance of idealization. Evidence of the measure's validity was provided in its initial validation study, but further confirmatory analyses of its proposed five-factor model are lacking.

Paulhus Deception Scales. The Paulhus Deception Scales (PDS; Paulhus, 1998) is a 40-item self-report measure designed to assess the respondent's tendency to provide socially desirable responses, even if such responses do not align with the respondent's true feelings. Answers on the measure range from 1 (*not true*) to 5 (*very true*). The PDS is unique in that it assesses two distinct forms of social desirability in the responding: self-deception and impression management. Self-deception is believed to represent an unconscious defense against potentially threatening beliefs or feelings, whereas impression management is seen as a conscious distortion to make oneself appear better. The measure and the validity of its two-factor design has been supported in several reviews (e.g., Lanyon & Carle, 2007).

Hypothesized relationships

Kohut's theories have been explicitly connected with theories of vulnerable narcissism and shame. As such, it was hypothesized that the AESOP's strongest correlations would be with the HSNS and the PFQ2 shame subscale. Additionally, given that the fundamental assertion of Kohut's theory is that unmet selfobject needs are responsible for a range of pathology, it was hypothesized that scores on the AESOP would demonstrate a positive correlation with the symptom scales of the BSI. Conversely, the measure was hypothesized to demonstrate only a slight correlation with measures of grandiose narcissism (as measured by the NPI) and guilt (as measured by the PFQ2).

Data analysis

The factor structure that was identified with the EFA from Sample 1 was confirmed in Sample 2 using a latent modeling technique. The items were entered into a confirmatory factor analysis (CFA) using M*plus* (version 7; L. K. Muthén & Muthén, 2012). Items were allowed to intercorrelate within a factor, but were restrained to not correlate or load across factors. For the purpose of the CFA, the scale ratings were treated as a true interval scale. Ordinal Likert scales are often interpreted as a continuous variable, and so to better evaluate its use as such, the present measure's factors were confirmed using a maximum likelihood estimation method. Model fit was evaluated with a compendium of accepted fit indexes (Hu & Bentler, 1999; Raykov & Marcoulides, 2006): normal theory weighted chi-square statistic, root mean square error of approximation (RMSEA), comparative fit index (CFI) and Tucker–Lewis Index (TLI), and standardized root mean residual (SRMR).

Several personality attributes and psychological health outcomes were measured in Sample 2. These outcomes were dichotomized within the sample to represent high-scoring individuals (i.e., the top 25% of the included measures) and the remaining 75% of the sample. Grandiose (NPI) and vulnerable (HSNS) narcissism were dichotomized at the 75th percentile: Those in the upper 25% of the sample were classified as the "elevated group," and all others as unremarkable. The several BSI scales have published T values for nonpatient men and women. For all scales, $T \geq 65$ was classified as a clinical group, and below this criterion as a nonelevated group. The AESOP scale totals were entered as correlated predictors into a discriminant model for each dichotomous outcome. Model fit was evaluated by Wilks's lambda and estimation classification accuracy. Canonical correlations were converted to R^2 statistics as an estimate of effect size. To correct for multiple comparisons, a more conservative alpha criterion was used ($p < .01$). Differential effects between the present measure's scales in predicting the outcomes were evaluated with a Steiger Z comparison of bivariate correlations (Steiger, 1980). The Steiger Z accounts for the correlation between the present measure's scales, and a significant value indicates a difference between scales in relationship to an outcome.

As a follow-up to the discriminant analysis that identified predictability of outcomes by the AESOP's scales, a cluster analysis determined the patterns of covariance observed in the sample. In other words, the analysis identified subgroups of respondents with different combinations of scale responses and then determined group differences in outcomes. Thus, the three present measure's scales were entered into a two-step cluster analysis as continuous variables (log-likelihood distance estimation, Schwarz's Bayesian criterion), and evaluated for differences in the outcome measures. Correction for multiple comparisons was made by using a more conservative p value ($p < .001$).

Results

Data screening

Prior to planned analyses, the data were evaluated for normality. Although in this large sample all scales failed the statistical test of normality (Shapiro-Wilks = 0.78–0.99, $p < .01$), based on accepted guidelines, skew and kurtosis for all scales were determined to be within the bounds of normality (Trochim & Donnelly, 2006) and presented minimal bias in subsequent analyses: AESOP (skew = −0.24–0.08; kurtosis = −0.52–0.24), BSI (skew = 0.61–1.48; kurtosis = −0.41–1.62), PFQ2 (skew = 0.43, kurtosis = 0.13 and 0.53), NPI (skew = 0.05; kurtosis = −0.31), HSNS (skew = −0.10; kurtosis = −0.16), and PDS (skew = 0.25 and 1.15; kurtosis = −0.30 and 0.99).

The means, standard deviations, and Cronbach's alpha values of all scales assessed are summarized in Table 2. Table 3 presents correlations among the variables of interest.

Confirmatory factor analysis

The factor structure identified from the EFA in Sample 1 was confirmed in Sample 2. The CFA was estimated with full information maximum likelihood, which under conditions of moderate skew and kurtosis is a robust estimator (B. Muthén &

Table 2. Sample means, standard deviations, and Cronbach's alpha values.

Measure	*M*	*SD*	Cronbach's alpha
AESOP Mirror	44.66	16.30	0.91
AESOP Ideal	47.44	9.03	0.79
AESOP Twinship	36.22	8.76	0.80
Overt narcissism (NPI)	16.96	6.64	0.82
Covert narcissism (HSNS)	26.69	7.11	0.78
Shame (PFQ2)	25.16	6.06	0.80
Guilt (PFQ2)	13.97	4.21	0.77
Somatization (BSI)	0.70	0.76	0.87
Obsessive–compulsive (BSI)	1.37	0.89	0.81
Interpersonal sensitivity (BSI)	1.06	0.93	0.82
Depression (BSI)	0.97	0.92	0.88
Anxiety (BSI)	0.90	0.76	0.83
Hostility (BSI)	0.91	0.79	0.82
Paranoid (BSI)	1.10	0.85	0.78
Psychoticism (BSI)	0.86	0.80	0.75
Phobic anxiety (BSI)	0.59	0.76	0.85
SONI Approach Mirror	3.30	1.23	0.80
SONI Approach Ideal	3.83	1.00	0.73
SONI Approach Twinship	4.17	1.16	0.88
SONI Avoidant Mirror	3.85	1.02	0.67
SONI Avoidant Ideal-Twinship	2.84	1.01	0.86

Note. AESOP = Arble Estimate of Selfobject Pursuits; NPI = Narcissistic Personality Inventory; HSNS = Hypersensitive Narcissism Scale; PFQ2 = Harder Personal Feelings Questionnaire; BSI = Brief Symptom Inventory; SONI = Self-Object Need Inventory.

Kaplan, 1985). All measurements significantly identified the respective latent factor (all $p < .001$). See Table 4 for a list of factor loadings. Fit indexes of the latent model were within the acceptable range (Hu & Bentler, 1999; Raykov & Marcoulides, 2006): RMSEA = 0.046, CFI = 0.93, TLI = 0.91, and SRMR = 0.07. The chi-square test was significant, $\chi^2(388) = 950.39$, $p < .001$, which might be a biased statistic given the large sample size and number of parameters; some researchers have suggested that it is more appropriate to test model fit with a normed chi-square (Bollen, 1989), with values less than 0.3 indicating a good model fit. Under this criterion, the present model's chi-square value is also indicative of acceptable model fit (Kline, 2005). In sum, the analysis confirmed the factor structure in a second independent and randomly selected sample. The latent factors were moderately intercorrelated at .38 to .60, all $p < .001$. Scale responses did not vary by age, $F(1, 661) = 1.81$, $p = .18$; sex, $F(1, 661) = 0.82$, $p = .37$; or ethnicity, $F(7, 661) = 1.36$, $p = .22$).

Discriminant analysis: Predicting psychological and affective outcomes

The AESOP's scales discriminated between high-scoring individuals (i.e., the top 25% of the included measures) and the remaining 75% of the sample. Discriminant accuracy was good for all outcomes, 67.1% to 78.6%, indicating that on average, fewer than 3 out of 10 cases were misclassified by these scales. Notably, these scales were most sensitive to vulnerable narcissism ($R^2 = 0.21$), but were not strongly associated with grandiose narcissism ($R^2 = 0.02$; Table 5). The three scales differentially predicted the outcomes; see Table 5 for a summary report of the scale prediction of each outcome. The Mirroring scale was the most common predictor of the various outcomes and the Idealizing scale predicted the fewest outcomes.

For outcomes in which multiple AESOP scales were significant predictors in the discriminant analysis, a follow-up analysis compared the magnitudes of Pearson correlations of AESOP scales with the continuous outcome measures. The Mirroring scale predicted all outcomes in the discriminant analysis, except for NPI, and was more strongly associated with outcomes than the other AESOP scales (all Steiger $Z > 11.5$, all $p < .001$).

The Idealizing scale significantly predicted the fewest outcomes in the discriminant analysis, but was the only AESOP scale associated with the NPI scale. The Idealizing scale also predicted responses on the HSNS, but was more weakly associated with this outcome as compared to the Mirror (Steiger $Z = 0.58$, $p < .001$) and Twinship scales (Steiger $Z = 3.06$, $p < .01$), and was significantly but more weakly associated with the BSI Psychoticism subscale than the Mirror scale (Steiger $Z = 10.45$, $p < .001$).

Cluster analysis: Observed clusters based on scale responses

The sample of college students naturally diverged into two groups with fair separation (average silhouette = 0.40): those who responded lower on the three scales ($n = 252$, 37.5%) and those who responded higher ($n = 420$, 62.5%). Of note, this significance refers to differences between the groups, not absolute values on the scale itself. All three scales discriminated between the clusters (predictor importance ≥ 0.56), but the Twinship scale was the most sensitive to individual differences (predictor importance = 1.0). Post-hoc univariate analysis of variance confirmed that the groups significantly differed on all outcomes, all $F(1, 670) \geq 8.24$, all $p < .001$, except for NPI, $F(1,670) = 4.04$, $p = .045$, that did not survive correction for multiple comparisons. Group differences in AESOP scales and outcome scales are illustrated in Figure 1. Besides differences in responses on the AESOP scales that defined the groups, the largest group differences were in responses on HSNS, followed by several BSI subscales (see Figure 1 for a comparison of outcomes between groups). The two clusters did not differ in average age, $t(669) = 1.54$, $p = .12$, nor in the proportion of women, $\chi^2 = 0.07$, $p = .79$, or in ethnic distribution, ($\chi^2 = 8.66$, $p = .28$, suggesting there is no inherent bias in the scales.

Viability of self-report

To measure the extent to which self-report bias might color the present results, the PDS was included in the present battery. Had the AESOP produced a significant positive correlation with either PDS subscale, this would offer an important caution as to the meaningfulness of its relationship to other self-report measures. In the current analysis, no scale of the present measure demonstrated such a positive correlation. Instead, when examining correlations within the entire sample, Mirroring was found to negatively correlate with both the self-deception ($r = -.38$, $p < .001$) and impression management subscales ($r = -.25$, $p < .001$); Twinship was found to negatively correlate with self-deception ($r = -.12$, $p = .002$) but not the impression management subscale ($r = -.06$, $p = .11$), and the Idealization scale correlated with neither ($r = .03$ and .00, $p \geq .38$, respectively). These findings might reflect the fact that high scores on the present measure require a certain awareness of one's own needs as well as a willingness to

Table 3. Correlations among AESOP scales, clinical and personality measures.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. AESOP Mirroring	1.00																					
2. AESOP Ideal	**0.28**	1.00																				
3. AESOP Twinship	**0.42**	**0.43**	1.00																			
4. Grandiose narcissism (NPI)	0.06	**0.13**	0.03	1.00																		
5. Vulnerable narcissism (HSNS)	**0.61**	**0.20**	**0.34**	0.06	1.00																	
6. Shame (PFQ2)	**0.44**	**0.11**	**0.15**	**–0.19**	**0.45**	1.00																
7. Guilt (PFQ2)	**0.34**	0.06	*0.09*	**–0.13**	**0.35**	**0.66**	1.00															
8. Somatization (BSI)	**0.35**	0.01	0.03	−0.01	**0.35**	**0.41**	**0.47**	1.00														
9. Obsessive–compulsive (BSI)	**0.44**	**0.12**	**0.19**	**–0.12**	**0.45**	**0.52**	**0.50**	**0.63**	1.00													
10. Interpersonal sensitivity (BSI)	**0.57**	*0.10*	**0.20**	**–0.15**	**0.55**	**0.59**	**0.47**	**0.57**	**0.64**	1.00												
11. Depression (BSI)	**0.55**	0.06	**0.17**	**–0.11**	**0.48**	**0.57**	**0.52**	**0.64**	**0.71**	**0.77**	1.00											
12. Anxiety (BSI)	**0.47**	*0.10*	**0.14**	−0.06	**0.46**	**0.55**	**0.53**	**0.76**	**0.73**	**0.67**	**0.73**	1.00										
13. Hostility (BSI)	**0.42**	0.03	**0.10**	0.03	**0.43**	**0.42**	**0.45**	**0.65**	**0.61**	**0.60**	**0.68**	**0.67**	1.00									
14. Paranoid (BSI)	**0.55**	**0.11**	**0.20**	0.06	**0.56**	**0.48**	**0.49**	**0.59**	**0.66**	**0.71**	**0.70**	**0.67**	**0.67**	1.00								
15. Psychoticism (BSI)	**0.49**	0.07	**0.10**	−0.06	**0.49**	**0.55**	**0.54**	**0.70**	**0.71**	**0.73**	**0.84**	**0.74**	**0.69**	**0.73**	1.00							
16. Phobic anxiety (BSI)	**0.37**	0.06	*0.09*	−0.01	**0.39**	**0.43**	**0.41**	**0.73**	**0.57**	**0.63**	**0.59**	**0.73**	**0.60**	**0.61**	**0.68**	1.00						
17. Global Severity Index (BSI)	**0.55**	*0.08*	**0.16**	−0.05	**0.54**	**0.59**	**0.58**	**0.84**	**0.83**	**0.82**	**0.88**	**0.88**	**0.80**	**0.82**	**0.90**	**0.80**	1.00					
18. SONI Approach Mirror	**0.74**	0.28	**0.43**	**0.14**	**0.57**	**0.37**	**0.27**	**0.30**	**0.39**	**0.47**	**0.42**	**0.40**	**0.32**	**0.45**	**0.39**	**0.38**	**0.46**	1.00				
19. SONI Approach Ideal	**0.32**	**0.55**	**0.42**	**0.20**	**0.33**	**0.11**	*0.09*	*0.08*	**0.12**	**0.09**	0.06	**0.12**	*0.10*	**0.16**	*0.09*	**0.13**	**0.12**	**0.47**	1.00			
20. SONI Approach Twinship	**0.35**	**0.44**	**0.71**	*0.10*	**0.32**	**0.12**	0.04	−0.01	**0.13**	**0.14**	0.06	*0.08*	0.08	**0.14**	0.03	0.06	*0.09*	**0.47**	**0.60**	1.00		
21. SONI Avoid Mirror	**−0.25**	0.02	*−0.09*	0.03	−0.07	*−0.09*	−0.03	−0.01	**−0.11**	**−0.16**	**−0.12**	**−0.11**	−0.05	*−0.09*	*−0.08*	−0.06	*−0.10*	**−0.28**	−0.01	−0.06	1.00	
22. SONI Avoid Ideal-Twinship	**0.43**	0.01	0.00	**0.11**	**0.45**	**0.30**	**0.28**	**0.35**	**0.26**	**0.35**	**0.37**	**0.37**	**0.35**	**0.35**	**0.38**	**0.41**	**0.42**	**0.46**	**0.18**	0.06	**0.13**	1.00

Note. Significance (***p* < .01** and (*p* < .05) is indicated by formatting. AESOP = Arble Estimate of Selfobject Pursuits; NPI = Narcissistic Personality Inventory; HSNS—Hypersensitive Narcissism Scale; PFQ2 = Harder Personal Feelings Questionnaire; BSI = Brief Symptom Inventory; SONI = Self-Object Need Inventory.

Table 4. Confirmatory factor analysis for AESOP loadings.

Factor Item	Standardized loading
Mirroring	
14	0.79
15	0.75
3	0.75
18	0.73
24	0.73
13	0.70
7	0.68
21	0.66
2	0.64
9	0.63
12	0.60
11	0.57
20	0.53
Idealizing	
20	0.60
17	0.54
6	0.53
12	0.53
13	0.50
23	0.45
7	0.41
19	0.40
3	0.34
1	0.31
Twinship	
1	0.76
4	0.75
2	0.65
3	0.65
8	0.65
17	0.53
5	0.50
6	0.39

Note. All item loadings were significant at $p < .001$. Unstandardized loadings equal to 1.0 were fixed for latent construct identification.

report them, thus precluding a tendency to deny one's own emotional desires. This further offers support, at least in a circumspect sense, of the validity of these results. Nonetheless, as indicated in the cluster analysis, the subgroup of the sample that demonstrated relatively lower scores on the AESOP scales (i.e., "lower need group") also reported relatively higher self-deception scale scores as compared to the "higher need" group. Thus, this measure appears vulnerable to the respondent's tendency toward denial, rendering low scores on the measure difficult to interpret.

SONI factor structure

Given the interest of the SONI in contrast to the AESOP, particular attention was given to the SONI's underlying factor structure. A CFA on the structure published for the SONI was conducted in M*plus*. Latent model fit for a five-factor structure was poor overall: $\chi^2(124) = 2623.21$, $p < .001$, RMSEA = 0.07, CFI = 0.79, TLI = 0.78, SRMR = 0.08. All items significantly loaded on the respective factors; however, more than half of the items significantly cross-loaded onto more than one factor. Model fit could be significantly improved if 17 of the 38 items were allowed to cross-load on three or more factors, and an additional 9 items to cross-load on two factors. A second quandary was the pattern of correlations among the factors. Factor 1 was correlated with Factor 3 ($r = .75$, $p < .001$) and Factor 4 ($r = .54$, $p < .001$). Factor 2 was positively correlated with Factors 3 through 5 (all $r \geq .10$, $p < .05$), and Factors 4 and 5 were negatively correlated ($r = -.39$, $p < .001$).

Discussion

This research was focused on the creation of an empirically supported measure of Kohut's concept of selfobject needs. This new measure was designed through a multistep process involving expert clinical raters generating and rating the face validity of the items, an exploratory analysis of potential items among a relatively diverse sample of 686 college students, an independent replication and statistical confirmation of the measure's proposed structure among a different sample of 672 college students, and an examination of its relationship with other constructs of interest for the second sample.

The theorized three-factor structure of the AESOP aligning with the selfobject needs of Twinship, Mirroring, and Idealizing was supported by the results of the initial EFA. Each of the items loaded significantly onto its respective selfobject need. The strength of these loadings was somewhat variable, ranging from .34 to .77, although all exceeded the criterion value of .32 (Tabachnick & Fidell, 2007).

Table 5. Summary of discriminant analysis: Differential effects by Arble Estimate of Selfobject Pursuits (AESOP) scale.

					Correlation with canonical discriminant function		
Outcome measure	Accuracy	Wilks's lambda	Canonical correlation	R^2	Mirror	Ideal	Twin
Covert narcissism (HSNS)	78.6	0.79	0.46	0.21	0.98	0.31	0.54
Global Severity Index (BSI)	70.2	0.79	0.46	0.21	0.96		0.21
Interpersonal sensitivity (BSI)	71.4	0.79	0.46	0.21	0.98		0.27
Paranoid ideation (BSI)	70.8	0.80	0.45	0.20	0.98		0.26
Psychoticism (BSI)	71.0	0.81	0.44	0.19	0.96	0.20	
Depression (BSI)	69.5	0.81	0.43	0.18	0.98		0.26
Anxiety (BSI)	69.8	0.84	0.41	0.17	0.98		0.25
Obsessive–compulsive (BSI)	69.5	0.86	0.38	0.14	0.99		0.34
Phobic anxiety (BSI)	67.6	0.88	0.35	0.12	0.97		0.23
Hostility (BSI)	67.1	0.89	0.34	0.12	0.96		
Shame (PFQ2)	77.2	0.89	0.33	0.11	0.95		
Somatization (BSI)	70.2	0.89	0.33	0.11	0.88		
Guilt (PFQ2)	74.9	0.91	0.30	0.09	0.97		
Overt narcissism (NPI)	74.4	0.98	0.13	0.02		0.99	

Note. In the simplified report of the pattern of AESOP scales predicting outcomes, only significant predictors ($p < .05$) in the discriminant analysis are shown. HSNS = Hypersensitive Narcissism Scale; BSI = Brief Symptom Inventory; PFQ2 = Harder Personal Feelings Questionnaire; NPI = Narcissistic Personality Inventory.

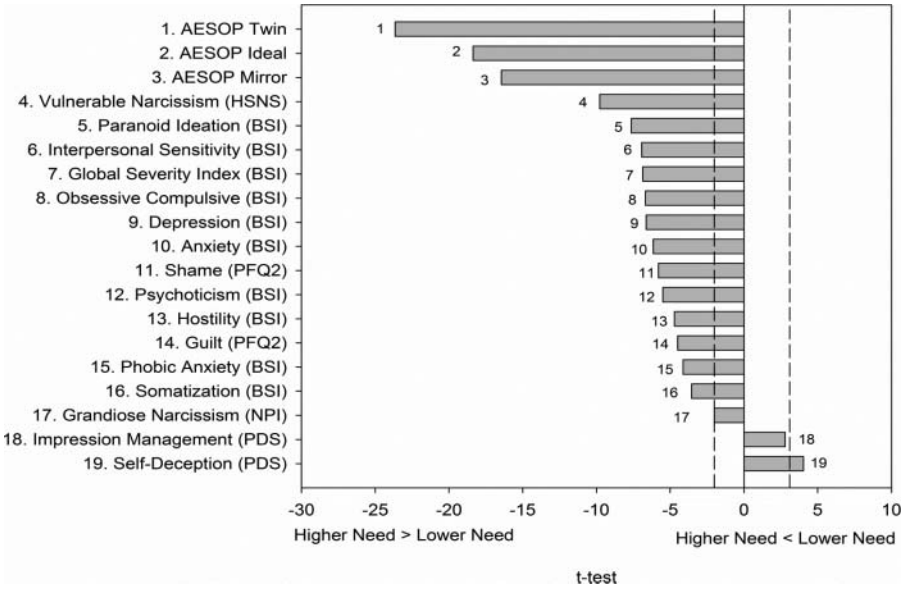

Figure 1. Summary of differences between identified clusters within the sample. Cluster groups were defined by responses on the Arble Estimate of Selfobject Pursuits (AESOP) scales, in which higher values are interpreted as higher selfobject need (i.e., "higher need"). Increasingly negative *t* test values indicate higher scale scores in the "higher need" group, whereas positive values indicate that the "lower need" group scored higher on the scale; the dotted lines indicate between-group *t* test significance at $p < .05$. HSNS = Hypersensitive Narcissism Scale; BSI = Brief Symptom Inventory; PFQ2 = Harder Personal Feelings Questionnaire; NPI = Narcissistic Personality Inventory; PDS = Paulhus Deception Scales.

All of the respective selfobject needs scales were correlated (ranging from .31–.44), although none of the values were so highly correlated as to convey a sense of redundancy among the needs. This significant positive correlation between the scales, combined with the clear sorting of the individual items according to proposed selfobject needs, instead supports the original contention that the individual selfobject needs are best conceptualized as distinct but related concepts. Furthermore, it appears to follow that a deficit in one selfobject need might not necessitate a deficit in the related needs.

A large sample EFA is an important beginning for the development of the AESOP. However, the stability for such a measure is highly uncertain. Exploratory analyses represent only an initial step in a larger validation process, as due to constraints within the modeling process, confirmatory and exploratory analyses can produce discrepant results and do not share the same assumptions (Prooijen & Kloot, 2001; Schmitt, 2011). The strong results of the CFA thus offer crucial supplementary evidence for the validity of the measure's proposed three-factor model, with the fit indexes consistently suggesting an adequate-to-strong model fit.

That the hypothesized three-factor structure based on theory was identified in an EFA, and then confirmed in an independent sample, offers strong grounds for concluding that Kohut's theory enjoyed notable support. The three scales' reliabilities ranged from acceptable to excellent, again suggesting the feasibility of the three-factor model. In this regard, the Idealizing scale reports the lowest internal consistency (Cronbach's $\alpha = .79$). Speaking summarily, the measure's proposed structure received consistent statistical and theoretical support.

Although each object need might be related to a common source in one's personal history, the psychological consequences of each need are suggested to differentially reflect distinct personality features. This intriguing hypothesis was supported by the discriminant analysis that tested each scale as a predictor of personality functioning. Interestingly, the Mirroring scale was the strongest correlate of several personality and psychological symptom measures. The direction of the association was consistent with Kohut's original description of the selfobject need construct—persons who endorsed a high frequency of Mirroring needs were commonly in the upper 25th percentile of vulnerable narcissism, shame, and reported clinical levels of symptoms on the BSI. However, the scale was not selective, correlating with all measures, except for the NPI. The Idealizing and Twinship scales were more selective in correlating with outcomes. Higher scores on the Idealizing and Twinship scales were associated with higher vulnerable narcissism, and of the two scales, Twinship was the stronger predictor. Indeed, the Twinship scale was more sensitive to individual differences in needs than the other two scales. In addition to narcissistic tendencies, high scores on the Twinship scale also identified persons who reported clinically significant levels for several psychological outcomes, including anxiety, phobia, and obsessive–compulsive behaviors. Whereas the Mirroring and Twinship scales were correlated with most of the BSI psychological scales, high Idealizing scale scores were only associated with reporting more psychotic symptoms. The noted relationship between selfobject needs and clinical pathology supports Kohut's assertion that clinical symptoms might be attributable to deficits in self-structure.

Consistent with Kohut's original conceptualization of selfobject needs, high scores on the AESOP were associated with a greater frequency of narcissistic personality function. Kohut posited that although higher selfobject needs would be associated with narcissism generally, Kohut's description of narcissism is the basis of the disorder's theorized vulnerable form; a personality presentation containing a hidden sense of grandiosity, combined with a shy and avoidant outward demeanor (this is contrasted against the presentation of narcissism in its grandiose form, emphasizing an outward sense of arrogance and

grandiosity). Thus, a more direct relationship between selfobject needs and vulnerable narcissism would be expected, and this indeed appears to be the case. Only the Idealizing scale was associated with grandiose narcissism, whereas all three scales were predictive of vulnerable narcissistic tendencies.

The complementary use of all three scales as a single measure for clinical diagnosis was confirmed with a cluster analysis. Based on the measure's defined groups, persons with high selfobject need scale scores tended to have an increase in vulnerable narcissism and an increased risk for several psychological outcomes. In contrast, low selfobject need scale scores were associated with a higher sense of self-deception. Therefore, the direction of the scale values is potentially informative for diagnostic screening.

Similarly, Kohut described shame as a disruption in the narcissistic equilibrium (Kohut, 1971), attributing the development of shame to the disapproval of parental figures. As hypothesized, all three of the selfobject need scales demonstrated a positive correlation with the measure of shame. By way of comparison, only two of the three selfobject need scales were found to correlate with the experience of guilt, and in those two instances, the correlations were lower than their relationships with shame.

Taken together, the AESOP's scales appear to be useful measures of selfobject needs that discriminate between personality functions and psychological outcomes as predicted by Kohut's original conceptualization. Indeed, the scales had good accuracy when identifying persons who would fall above clinical criteria—more than 7 out of 10 cases were correctly classified across assessed outcomes. Thus, the measure's scale structure successfully passed tests of construct and predictive validity.

Comparison to the SONI

The most relevant comparative instrument to the AESOP is the SONI, a measure also designed to tap Kohut's selfobject needs (although it employs an approach–avoidance axis absent from the current measure). The CFA testing the model proposed by the SONI's authors suggested a poor fit, with cross-loadings across the five proposed factors being a persistent issue. Fit indexes ranged from poor to acceptable, not offering strong support for the proposed structure.

Conclusions

Evidence for the construct validity of the AESOP can be derived from the agreement provided by expert raters, initial statistical analyses suggesting a clean factor structure along the predicted three-factor lines, a confirmation of the proposed model with an independent sample, and the measure's consistent adherence to predicted relationships within the nomological network. In short, significant evidence for the measure's construct validity was provided.

Study limitations

There are important limitations to this research. First, replication of these findings among different gender-balanced samples and clinical populations is critical. The sole reliance on undergraduate samples raises concerns about the generalizability of the results and the potential structural variance across groups. Similarly, the possibility that some of the effects are in part driven by the overrepresentation of women in the sample must be addressed in future research. Furthermore, additional theoretical and statistical review of the measure might provide evidence of additional items that could be included in the measure to provide a better assessment of selfobject needs.

Second, the cross-sectional nature of the data makes its predictive implications somewhat limited. For example, although the self psychology model would predict that unmet selfobject needs would lead to symptoms such as depression or anxiety, it might be the case that the causal pathway works in reverse. Similarly, numerous moderating and mediating relationships remain possible, and the reliance on cross-sectional data precludes an assessment of the measure's temporal stability, leaving critical reliability concerns unanswered. Longitudinal and experimental methodologies will likely be required to address these shortcomings.

Finally, all of these measures are self-report. The possibility of the results being driven by monomethod variance (i.e., sole reliance on self-report measures) cannot be discounted. The report of selfobject needs might be quite distinct from the experience of selfobject neediness, a distinction that could be fully realized in an experimental manipulation. Self-report measures such as the AESOP, NPI, and BSI offer an incomplete view of their intended constructs, and as such, the use of alternative measurement strategies, particularly performance-based measures of personality, could reveal prominent shortcomings within the measures.

These noted concerns must be addressed before any firm conclusions regarding the utility, reliability, and validity of the AESOP can be offered. Until additional research is conducted, the AESOP will remain unsuitable for clinical use. Nonetheless, this study stands as a preliminary effort in a larger program of research, and these results appear to suggest that the AESOP merits further consideration. Indeed, it is our hope that the creation of the measure will encourage and facilitate more sophisticated investigations, not only of the measure itself, but of the associated construct of selfobject needs.

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