



# The Behavioral Assessment of Social Interactions in Young Children: An examination of convergent and incremental validity

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## ABSTRACT

Many treatment programs for individuals with an autism spectrum disorder (ASD) target social skills, and there is growing attention directed toward the development of specific interventions to improve social skills and social interactions in this population (Hestenes & Carroll, 2000; Strain & Hoyson, 2000). However, there are limited tools available to assess social skills in children with ASD. Furthermore, there are even fewer designed to assess response to intervention. The focus of the current study was to examine the convergent, criterion, and incremental validity of a new measure designed to assess the development of social interaction skills in individuals with ASD; namely, the Behavioral Assessment of Social Interactions in Young Children (BASYS; Gillis, Callahan, & Romanczyk, 2010). A total of 44 individuals with ASD participated in this study (mean age was 7 years 11 months; range was 2–12 years old). The BASYS demonstrated convergent validity with the Social Approach subscale of the Pervasive Developmental Disorders Behavior Inventory (PDDBI; Cohen & Sudhalter, 2005) and criterion-related validity with the Socialization domain of the Vineland Adaptive Behavior Scales-II (VABS-II; Sparrow, Cicchetti, & Balla, 2005). One of the two BASYS subscales demonstrated incremental validity over the PDDBI in predicting variability in the VABS-II Socialization domain. The results of this research provide further support for the clinical utility of the BASYS as a measure of social interaction skills in individuals with ASD.

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## 1. Introduction

Kanner's (1943) initial description of autism highlighted deficits in social interaction as central to the disorder. Although autism as a diagnostic entity has undergone significant changes since Kanner's initial conception, social deficits are still considered the core feature of autism spectrum disorders (ASD). Indeed, some experts argue that these deficits are what distinguish ASD from other clinical populations (Mundy, Sigman, & Kasari, 1990; Travis & Sigman, 1998). Moreover, research shows that individuals with ASD have qualitatively different social impairments compared to those with other developmental disabilities (e.g., Down Syndrome; Attwood, Frith, & Hermelin, 1988; Jackson et al., 2003), and are less likely to orient to social stimuli, respond to the social bids of others, and initiate social interactions with others (same aged peers and adults) (Dawson, Meltzoff, Osterling, Rinaldi, & Brown, 1998; Hauck, Fein, Waterhouse, & Feinstein, 1995; Jackson et al., 2003; Sigman & Ruskin, 1999).

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### 1.1. Assessing social deficits

Social deficits in children with or without ASD correlate with poor academic achievement, lower scores on measures of cognitive and emotional development (Hartup & Moore, 1990; Hughes & Hall, 1987; McClellan & Katz, 2001), peer rejection, anxiety, depression, and other forms of psychopathology (Bellini, Peters, Benner, & Hopf, 2007). Given the pervasive nature of social skills deficits in individuals with ASD, as well as the impact that such deficits have across clinically-relevant outcomes, most curricula developed for individual with ASD include specific social skills instruction or training.

Evaluating the effectiveness of specific curricula for children with ASD – either in general or with respect to particular clients – requires tools to validly assess social skills deficits and acquisition. Currently, however, there are a limited number of tools designed to assess the development of social skills and even fewer that are appropriate to periodically assess improvements. The majority of the tools that are available, such as the Pervasive Developmental Disorders Behavior Inventory (PDDBI; Cohen & Sudhalter, 2005), the Social Skills Improvement System (SSIS; Gresham & Elliott, 2008), the Matson Evaluation of Social Skills with Youngsters (MESSY; Matson, Rotatori, & Helsel, 1983) and the Vineland Adaptive Behavior Scales 2nd Edition (VABS-II; Sparrow, Cicchetti, & Balla, 2005), rely on third-party and/or self-report. Whereas these measures are useful in identifying children displaying deficits or delays in social functioning, they do not provide information about the specific nature of a child's social difficulties and were not designed to track behavior change. Moreover, the method used to track treatment progress can significantly influence the degree of change observed (Meier, 2000). In the area of social skills assessment, there is little evidence supporting the use of self-report in lieu of behavioral observations and rating scales, which are shown to be most sensitive to intervention effects (Merrell, 2001). Behavioral observation measures are also conducive to frequent repeated assessments in the child's naturalistic context, making them an ecologically more valid means to assess treatment outcome over time (Foster & Ritchey, 1979; Gresham, 2000).

### 1.2. The Behavioral Assessment of Social Interactions in Young Children (BASYC)

The Behavioral Assessment of Social Interactions in Young Children (BASYC; Gillis, Callahan, & Romanczyk, 2010) was developed to objectively measure and describe developmental differences in social behavior for children with ASD in order to inform diagnostic assessment, intervention planning, and treatment monitoring. The BASYC uses direct behavioral observation in a naturalistic, semi-structured setting and measures two domains of social interaction: social responsivity and social initiations. A benefit of analog behavioral assessment is the increased control over the type of behaviors selected for assessment (Kazdin, 2003). Assessment of social behaviors through an observational approach, in which the assessment procedure presents each item as an interactive behavioral task or interaction, provides a direct measure of a behavioral deficit.

### 1.3. Current study

Previous research with the BASYC demonstrates its reliability and sensitivity to differences in social behaviors between typically developing children and those diagnosed with ASD (Gillis et al., 2010). In addition, scores on the BASYC were found to be predictive of group membership (i.e., typically developing or diagnosed with an ASD) (Gillis et al., 2010). The results of previous research also indicate that the BASYC is sensitive to changes in social behaviors over time (Clemens, Gillis, Romanczyk, Callahan, & Straub, 2008). Although these data are promising, additional research is needed to establish the BASYC as a valid measure of social skills, as well as one that is significantly more informative than those currently in use. As such, the purpose of the current study was to evaluate the convergent, criterion-related, and incremental validity of the BASYC.

The first goal of this study was to assess the convergent validity of the BASYC. Convergent validity is the degree to which a measure correlates well with other established tests that are believed to measure the same construct (e.g., social interaction skills) (Bryant, 2004; Kaplan & Saccuzzo, 2001). However, as was discussed earlier, other measures do not assess social interaction skills in the same manner as the BASYC (i.e., analog behavioral assessment). Of the measures currently used to assess social skills, it was determined that the behaviors assessed on the Social Approach subscale of the PDDBI were most closely related to the behaviors assessed with the BASYC. Further, as with the BASYC, the PDDBI was developed specifically for use with individuals with ASD. Thus, it was chosen as the comparison measure to assess the convergent validity of the BASYC. We hypothesized that the BASYC would be significantly and positively correlated with the Social Approach Behaviors subscale of the PDDBI.

The second goal of this study was to assess the criterion-related and incremental validity of the BASYC. Criterion-related validity involves using a particular measure to estimate some external and theoretically-relevant behavior (Nunnally & Bernstein, 1994), whereas incremental validity helps determine whether the former provides significantly more information about this criterion than a measure that is already available (Dawes, 1999). We used the Socialization domain of the VABS-II as the criterion with which to validate the BASYC. This subscale is commonly used to broadly assess the development of social skills in individuals with and without disabilities and has also frequently been used to assess intervention outcomes for individuals with ASD (Anderson, Avery, DiPietro, Edwards, & Christian, 1987; Birnbrauer & Leach, 1993; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Smith, Groen, & Wynne, 2000; Weiss, 1999). The Socialization domain of the VABS-II is similar to the PDDBI and the BASYC in that it assesses social behavior. However, it was developed to assess social

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