

Stereotypy in young children with autism and typically developing children[☆]

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Abstract

Although stereotypy is one of the key diagnostic features of autism, few studies have compared stereotypic behavior in children with autism and typically developing children. The present study employed direct observational measurement methods to assess levels of stereotypic behavior in 2-, 3- and 4-year-old children with autism or pervasive developmental disorder – not otherwise specified (PDD-NOS) and age-matched typically developing peers. Thirty children with autism or PDD-NOS and 30 typically developing children participated. Each child's performance of several early learning and play skills was assessed using a direct observational assessment protocol developed for children with autism who were entering early intensive behavioral treatment. Duration of episodes of vocal and motor stereotypy was recorded from a videotaped 10 min portion of that assessment session. Results indicated that the 2-year-old children with autism or PDD-NOS had somewhat higher levels of stereotypic behavior than the typically developing 2-year-olds, while the 3- and 4-year-old children with autism or PDD-NOS displayed substantially higher levels stereotypic behavior than their same-age peers.

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Studies of intensive behavior analytic intervention for children with autism and pervasive developmental disorder-not otherwise specified (PDD-NOS) have documented large gains in many children who began treatment during their preschool years (e.g., [Anderson, Avery,](#)

[☆] This report is part of a longitudinal research project conducted by the staff of the Intensive Instruction Preschool and Home-based Programs at the New England Center for Children. Portions of this research were presented at the annual convention of the Association for Behavior Analysis, May 2000.

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DiPietro, Edwards, & Christian, 1987; Birnbrauer & Leach, 1993; Fenske, Zalenski, Krantz, & McClannahan, 1985; Harris & Handleman, 2000; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Lovaas, 1987; McEachin, Smith, & Lovaas, 1993; Smith, Groen, & Wynn, 2000; Weiss, 1999). Improvements in cognitive, language, and social behaviors have been documented using measures such as standardized intelligence tests, language assessments, and adaptive behavior scales. Some studies reported that most comparison group children with autism or PDD-NOS who did not receive intensive behavior analytic treatment made smaller gains (e.g., Birnbrauer & Leach, 1993; Howard et al., 2005; Lovaas, 1987; Smith, Groen, & Wynn, 2000). Few of the published studies, however, reported details of improvements in specific categories of behavior, such as stereotypy or play.

Several variables may influence long-term treatment outcomes for children with autism or PDD-NOS. One is the age at which a child enters treatment. As noted previously, the best outcomes documented to date have been attained by children who entered intensive behavior analytic treatment prior to the age of 5 years (see Green, 1996 for a review). Few studies have examined the relation between age at treatment entry and outcome directly, but Fenske, Zalenski, Krantz, and McClannahan (1985) reported that children who began intensive behavior analytic treatment prior to 60 months of age were more likely to live at home and be enrolled full time in a public school after 2 years of treatment than were children who entered treatment after 60 months of age. Harris and Handleman (2000) found that children who began intensive treatment at 3 years of age were more likely to be placed in an integrated educational setting after 2 years of intervention than children who began treatment at ages 4 and 5 years.

A largely unexamined factor that may influence long-term treatment outcomes for children with autism or PDD-NOS is the extent to which children engage in stereotypy before, during, and after treatment. Stereotypic behavior is defined as repetitive motor and vocal responses that serve no obvious adaptive function (LaGrow & Repp, 1984; Matson, Kiely, & Bamburg, 1997; Smith & Van Houten, 1996). Although stereotypy occurs in individuals with mental retardation and other disorders (Bodfish et al., 1995; Matson et al., 1997; Rojahn, Matlock, & Tasse, 2000), it is considered a key diagnostic feature of autism (American Psychiatric Association, 1994; Lewis & Bodfish, 1998). Stereotypic behaviors have been shown to interfere with acquisition of new skills (Dunlap, Dyer, & Koegel, 1983; Epstein, Doke, Sajwaj, Sorell, & Rimmer, 1974; Koegel & Covert, 1972; Morrison & Rosales-Ruis, 1997), can decrease the likelihood of positive social interactions (Wolery, Kirk, & Gast, 1985), and can be stigmatizing (Jones, Wint, & Ellis, 1990). Stereotypy, therefore, has been the focus of behavioral intervention as well as considerable research over the past 20 years (e.g., Berkson & Tupa, 2000; Berkson, Tupa, & Sherman, 2001; Hanley, Iwata, Thompson, & Lindberg, 2000; LaGrow & Repp, 1984; Lewis & Bodfish, 1998).

Researchers have examined a variety of factors associated with stereotypic behavior in individuals with autism. A series of comparison studies revealed that individuals with autism had higher levels and intensity of stereotypy than individuals with mental retardation (Bodfish, Symons, Parker, & Lewis, 2000). Lower scores on the Vineland Adaptive Behavior Scale have been found to be correlated with higher levels of stereotypic behavior (Matson et al., 1997), as have low IQ and certain co-morbid conditions (Lewis & Bodfish, 1998; Rojahn, Matlock, & Tasse, 2000). In most studies, stereotypy was measured indirectly (i.e., with checklists and rating scales) rather than with direct observational measurements (Lewis & Bodfish, 1998).

Repetitive, stereotypic behavior has also been documented in the repertoires of typically developing infants and children (e.g., Foster, 1998; Troster, 1994), but it becomes less varied and less frequent with age (Thelan, 1979) and occurs principally during certain types of activities

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