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*Brief Report*

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## **An Observational Study of Stereotypic Behavior and Proximity Related to the Occurrence of Autistic Child-Family Member Interactions<sup>1</sup>**

**Anne M. Donnellan**

*University of Wisconsin-Madison*

**Jacki L. Anderson**

*San Francisco State University*

**Richard A. Mesaros**

*University of Wisconsin-Madison*

Information about successful teaching of children with autism has increased dramatically over the past decade (Donnellan-Walsh, Gossage, LaVigna, Schuler, & Traphagen, 1976; Koegel, Rincover, & Egel, 1982). Unfortunately, this information is often used to teach isolated tasks in artificial settings, with little impact on the ultimate ability of these children to succeed in a variety of community-based settings. As an alternative, educators are being encouraged to develop programs that teach autistic children a wide variety of chronological age-appropriate skills in nonschool environments in response to natural cues and consequences (Donnellan, 1980).

Efforts to teach students with autism in natural (nonschool, nonlaboratory) settings will be hampered by the fact that most of the empirical data regarding the characteristics of autism have been generated in highly struc-

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tured settings utilizing isolated and nonfunctional tasks (see Donnellan, Mesaros, & Anderson, in press, for a review of this issue). While this information is important, it is not sufficient. There are innumerable anecdotal reports about students with autism that are disparate from clinical/laboratory data. For example, the generalization difficulties of these children are well documented (see Carr, 1980). Yet parents report, for example, that an autistic child who watches flushing water as a self-stimulatory routine typically has no difficulty finding the bathroom in every building he enters, or in generalizing this "skill" to a new set of stimuli. There is a need to begin to document the conditions under which these students are succeeding in a variety of settings, how they are learning strategies for success, and how their learning and behavioral characteristics are inhibiting or enhancing these processes.

The parent training literature is one significant body of information that has dealt with these students in nonschool, nonclinical settings (e.g., Hemsley et al., 1978; Lovaas, 1980; Schopler & Reichler, 1971). This literature did not typically generate new information about autism, however, but addressed, instead, strategies for teaching parents to deal with particular behavioral excesses and deficits. While understandable, this emphasis has contributed to the present situation in which there is little information available about how children with autism function in natural settings, and/or how parents interact with their autistic children in the absence of specific behavioral interventions. Such information is potentially invaluable for teaching these children to function in a wide variety of environments.

In order to evaluate this position, autistic children and their families were observed interacting in their homes. Although the social interaction deficits in autism have been well documented (Kanner, 1943; Rutter, 1978; Wing & Gould, 1979), the assumption behind the present study is that interacting as a family member over an extended period of time may result in a mutual shaping process. If so, systematic observation of the patterns that result ought to produce valuable information that cannot be obtained in formal testing or in a clinic or laboratory setting.

The purpose of this research was to gather initial information regarding the behavior of students with autism in their own home including (1) occurrence of autistic child-family member interactions, (2) incidence of occurrence of ritualistic/stereotypic behavior, and (3) the relationship between interactions and stereotypy.

## METHOD

### *Subjects*

The subjects were seven students with autism and their families. Each student had been diagnosed as autistic by at least two independent profes-

sional educational or medical evaluations. Ages ranged from 2½ to 16 years, and subjects displayed the wide range of intellectual and communicative abilities generally found within the autistic syndrome. Families learned of the project through a chapter of the National Society for Children and Adults with Autism (NSAC). All resided in rural or urban communities in the midwest. Family size ranged from three to eight, and family occupational levels ranged from 2 to 7 on a 7-point scale (Warner, Meeker, & Eels, 1960).

### *Procedure*

Naturalistic observation was chosen for the present investigation, as this allows for the examination of the "natural" relationships between the organism and his/her environment (Barker, 1969). This was a directed observation study (Holm, 1978), conducted with the use of videotape as a means of recording data for later codification and analysis.

The subjects with autism and their families were videotaped in their homes and neighborhoods during times and events most likely to require social and communicative behavior and most likely to elicit stereotypic/ritualistic behavior that might have interfered with family routine and interaction. Parents were interviewed to determine specific times, events, and routines most likely to produce these behaviors. The routines videotaped for this study were family meal, free time, and transition time (such as arrival home from school), as the families agreed that these were most or least likely to require social/communicative behavior and/or to elicit ritualistic/stereotypic behavior.

Each family was videotaped on three separate occasions, once for each routine. They were instructed to proceed with the usual routines and family practices as naturally as possible during taping. Though the presence of an additional person in the home likely influenced the data, it is not possible to discern in which direction the data were affected. The families noted anecdotally that their behavior was similar to other occasions in which a visitor was present.

### *Measures*

A rating system was developed specifically for this research to examine autistic child-family member interactions, stereotypy, and environmental variables that might have influenced them.<sup>2</sup>

<sup>2</sup>This rating/coding system can be obtained by writing to Dr. Jacki L. Anderson, San Francisco State University, San Francisco, California.

## RESULTS

The Wilcoxon matched-pairs signed-ranks test was used to analyze the data statistically. These analyses revealed the following:

1. Subjects were engaged in interaction with other family members during approximately one-half of the intervals (56%) at average speaking distance (3-6 feet).

2. Ritualistic/stereotypic behavior occurred during 19% of the intervals observed. Of those intervals, 13% contained partial self-stimulatory behavior, while 6% contained continual self-stimulatory behavior.

3. Interactions between the subjects and family members occurred most frequently during intervals in which there was either no or only partial occurrence of ritualistic/stereotypic behavior (57-60% of these intervals). Of the intervals in which continual self-stimulatory behavior occurred, 29.6% also contained interactions.

4. Eighty-four percent of the continual self-stimulatory behavior occurred during unstructured periods, while only 39% of the partial self-stimulation occurred during these periods. Conversely, continual self-stimulation was rare during routine structured activities (16%), and partial self-stimulation was high (63%).

To summarize, these data indicate that (1) child-family interactions occurred during more than half of the observation intervals, (2) only 19% of the observation intervals revealed any self-stimulatory behavior, (3) the amount of self-stimulatory behavior was significantly reduced during child-family member interactions, and (4) child-family member interactions occurred at average speaking distances.

## DISCUSSION

These data provide preliminary information about the behavior of children with autism in their home environments and may call into question some assumptions about the functioning of this population and how to deal with them. Given the reported interaction deficits of children with autism, it is noteworthy that social interactions occurred so frequently. In addition, the amount of time without occurrence of ritualistic/stereotypic behavior for the subjects in the study was unexpectedly low. Some authors have reported rates as high as 90% (Romanczyk, Gordon, Crimmins, Wenzel, & Kistner, 1980). There is an assumption that self-stimulatory behavior can and should be eliminated, often by punitive and aversive procedures (e.g., Koegel, Firestone, Kramme, & Dunlap, 1974; Lovaas, 1977; Lovaas, Schaeffer, & Sim-

mons, 1965). Yet, as reported elsewhere (Anderson, 1983), less than 1% of the interactions of these family members with the autistic child were requests to stop action. The families in this study appear to have developed strategies for dealing with undesirable behavior in a more normalized fashion, such as engaging the children in interactions and/or involving them in such routine tasks as changing clothes or clearing the table.

Another assumption in the literature is that children with autism are best taught at a distance of about 3 feet or less (Kozloff, 1973; Lovaas, 1977), as this distance facilitates manual prompting and maintaining the child's attention. These data indicate that within the context of their home environments these children may spend only 6% of their time in the "next to" category (closer than 3 feet). Given the generalization difficulties associated with autism, it would appear crucial to teach interaction skills at the distance that those skills will ultimately need to be performed.

These findings also call into question some common notions of "parent training." The premise behind much of that literature is that information generated in laboratories and clinics can be transferred to the home (e.g., Carr, 1980). Certainly, problem behaviors are often so extreme that such a position is sometimes understandable. Clearly, however, as with any child, parents are the first teachers and can provide professionals with valuable information about their child. Transferring home successes to schools and clinics deserves considerable research attention. When an intransigent problem behavior is at issue, procedures are more likely to be successful if they are congruent with what the child is going to encounter in the natural environment. Entering natural environments and analyzing the ecobehavioral systems (Rogers-Warren & Warren, 1977) with as few prior assumptions as possible may allow researchers and educators to see behaviors in a new light and assist families in new ways. Finally, a priori assumptions about the *need* for interventions and "parent training" may not be appropriate.

Whether the task is to generate information or to implement techniques that are effective longitudinally, systematic observation in nonschool environments, possibly using a coding system similar to the one developed for this study, may be a fruitful way to assist children to function, ultimately, in a wide variety of natural settings.

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