JOURNAL OF APPLIED BEHAVIOR ANALYSIS 1992, 25, 809–821 NUMBER 4 (WINTER 1992)

USE OF DESCRIPTIVE AND EXPERIMENTAL ANALYSES TO IDENTIFY THE FUNCTIONAL PROPERTIES OF ABERRANT BEHAVIOR IN SCHOOL SETTINGS

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We conducted descriptive and experimental analyses of aberrant behavior in school settings with 2 children with autism, using teachers as assessors. Experimental functional analyses carried out by the investigators were followed by training teachers to conduct a descriptive analysis and a classroom experimental analysis. A comparison of the assessment procedures showed that each procedure identified negative reinforcement as a maintaining variable for aberrant behavior. The teacher implemented an intervention based on the assessment with mixed results. We then replicated the initial results by having the first teacher train a second teacher to carry out the two assessment procedures. The results of these analyses were also in agreement, again identifying negative reinforcement as a variable maintaining aberrant behavior. An intervention based on negative reinforcement was then successfully implemented. These results suggest the applicability and utility of functional analyses carried out in school settings.

DESCRIPTORS: natural environments, functional assessment, classroom analysis

Currently, functional assessment procedures range from descriptive assessments to experimental analyses, the major distinction being one of control. With descriptive procedures, little if any control is exerted over the environmental conditions during assessment. Rather, observations of the target behavior and the antecedent and subsequent events surrounding the behavior are recorded as they occur naturally in the subject's ongoing environment. The resulting correlational data suggest possible functional relationships operating in the subject's natural environment (e.g., demand vs. solitary situations, negative vs. positive reinforcement).

Several observational methods have been employed to identify the events having discriminative and motivational influences on aberrant behavior (Bijou, Peterson, & Ault, 1968; Cataldo, Bessman, Parker, Pearson, & Rogers, 1979; Epstein, Parker, McCoy, & McGee, 1976; Strain & Ezzelle, 1978; Touchette, MacDonald, & Langer, 1985). One of the most widely used descriptive analyses is the A-B-C procedure developed by Bijou et al. (1968). This procedure requires the practitioner to record each occurrence of the target behavior as well as events antecedent and subsequent to the behavior. The premise underlying this procedure is that, over time, a careful recording of the "ABCs" of a target

The authors are grateful to John Parrish for his assistance on early drafts of the manuscript.

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behavior will permit the identification of specific classes of events antecedent and/or subsequent to the target behavior that predict high and low levels of the behavior. This model has been extended across both environments and behaviors (Iwata, Pace, Kalsher, Cowdery, & Cataldo, 1990). For example, recent work by Mace and Lalli (1991) has shown that descriptive data can be used successfully in conjunction with experimental analyses to treat maladapted vocalizations effectively.

Until recently, most investigations designed to analyze the function of aberrant behavior have used an experimental approach with direct manipulation of antecedents and consequences that can maintain the behavior under highly controlled analogue conditions (Carr & Durand, 1985; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982; Northup et al., 1991). Experimental (functional) analyses exert greater control over the subject's environment during assessment and permit a more direct assessment of the functional properties of the target behavior. The antecedents and consequences of each assessment condition are arranged such that high rates of behavior in a particular assessment condition are indicative of a particular functional property of the behavior (Durand & Crimmins, 1988; Iwata et al., 1982). The major advantage of this approach is that it can show functional relationships among contingencies, the stimuli associated with them, and maladapted behavior. However, the quantitative and procedural precision necessary to conduct a functional analysis using analogue conditions presents one potential limitation. Iwata, Vollmer, and Zarcone (1990) suggested that because stringent control must be exercised, the analysis may not reveal all the events maintaining a behavioral problem in its natural environment. It cannot be assumed that a contingency controlling a response under experimental conditions is identical to those maintaining the behavior in the natural environment. Therefore, interventions based on functional analyses may be effective only to the extent that the contingencies and stimuli in the analogue conditions match those in the subject's natural environment (Mace, Lalli, & Pinter-Lalli, 1991).

The most significant limitation of descriptive analyses, on the other hand, is that naturally occurring events do not reveal functional relations. Instead, these data are correlational and only suggestive of these relationships (Mace, Lalli, & Shea, 1992). The number of variables found in natural settings may not allow the detection of intermittent events and/or can suggest a functional relationship where none exists. However, descriptive analyses, given these restrictions, have the potential to address the major limitation of experimental analyses: the identification of functional relationships with limited generality. Because the validity of any functional analysis may depend on the extent to which conditions in the analogue analysis are representative of those operating naturally on the behavior (Mace & Lalli, 1991), the use of descriptive analyses can allow an initial evaluation of a large number of potentially important variables that can be verified further through a functional analysis.

Efforts are now necessary to identify the utility of assessment approaches in field settings. There are two clear benefits that may accrue from the use of descriptive and experimental analyses of aberrant behavior in natural settings. First, the relationship between maintaining variables in controlled settings to those operating in field conditions remains unclear. Although experimental analyses conducted in controlled analogue conditions can identify contingencies capable of maintaining aberrant behavior, they may not be the contingencies operating in natural conditions (Carr, Newsom, & Binkoff, 1980; Iwata, Vollmer, & Zarcone, 1990; Mace & Lalli, 1991). Second, experimental analyses have been criticized as being too complex, time consuming, and burdensome (Axelrod, 1987). It has been further suggested that due to the stringent control necessary to identify maintaining variables accurately through experimental analyses, it is unreasonable to expect regular caregivers (e.g., teachers) to conduct these complex assessments (Durand & Crimmins, 1988; Paisey, Whitney, & Hislop, 1990). The primary purpose of this study was to compare the results of experimental and descriptive analyses designed to identify contingencies main-

taining the aberrant behavior of 2 children with autism. The findings were then used to develop interventions. A second purpose of the investigation was to determine whether these analyses and treatments could be carried out effectively in the natural environment by teachers.

METHOD

Participants

Students. Two children, who had been given a diagnosis of autism by an agency not affiliated with this study and based on the diagnostic criteria of the National Society for Autistic Children (Ritvo & Freeman, 1978), participated in this study. Molly was 7.5 years old and displayed a number of aberrant behaviors including aggression, loud vocalizations, and noncompliance. She had an expressive vocabulary of approximately 150 words and could appropriately request food, activities, or games. Her mental age, as measured by the Leiter International Performance Scale, was 3 years 5 months. According to the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984), she was estimated to be functioning at the 5-year-old level. Tim was 13 years old and engaged in high-intensity aggression in the form of hitting, pinching, scratching, and kicking. These behaviors had occasionally resulted in bruising and other tissue damage to school staff. Stereotypic hand waving and rocking also occurred less frequently. Tim did not speak, but communicated independently with approximately 15 manual signs. He had a mental age estimate of 5 years 10 months (Leiter) and a Vineland adaptive behavior estimate of 5 years.

Teachers. Two teachers participated. Teacher 1 was assigned to an elementary self-contained classroom for students with autism. At the time of the investigation, this teacher had 4 years of experience in this setting. Teacher 2 was assigned to a self-contained classroom for students with autism at the junior high level. At the time of the study, she had 2 years of teaching experience in this classroom. Both teachers volunteered for this project after attending a functional analysis symposium conducted by the first author.

Settings and Target Behaviors

The study was conducted in an urban elementary school and a junior high school. Both teacher-conducted assessments were carried out in self-contained classrooms for children with autism. The elementary classroom housed 6 students and one aide in addition to the teacher. The junior high classroom housed the teacher, one aide, and a total of 5 students with autism. Investigator-conducted assessments were carried out in a conference room located in the elementary school library and a vocational skills training room at the junior high school.

Two behavioral categories were targeted for Molly. *Aggression* was defined as hitting, kicking, scratching, or pushing a peer, teacher, or classroom aide. *Inappropriate language* was defined as loud, high-pitched vocalizations including "no" and "I want to go home." Physical aggression in the form of hitting, kicking, pinching, and grabbing was targeted for Tim.

Experimental Design

For each participant, the study was conducted in two phases. During Phase 1 (assessment), the results of the experimental and descriptive analyses were evaluated in an alternating treatments design. Assessment conditions were counterbalanced during the experimental analysis. Following assessment, the effects of treatment were evaluated with multiple baseline designs. Individual baselines consisted of data obtained across specific tasks, with the teacher conducting each session as she would on any day. Follow-up data were obtained 1 month after the last day of intervention.

Procedures

Teacher 1 conducted the assessment procedures with Molly, and Teacher 2 replicated the assessment with Tim. The investigator assessment always preceded teacher assessment. For both teachers, treatment was implemented immediately following all assessment procedures.

Conventional (experimenter-conducted) analyses for Teacher 1. These analyses were based on the work of Carr and Durand (1985) and Iwata et al. (1982) and were conducted by the investigators outside the classroom. Consultation with the classroom teacher prior to initiation of the procedures identified both demanding tasks and reinforcers. That is, the teacher was asked to choose specific tasks and activities that were difficult for the students, as well as to list preferred activities and any possible social reinforcers. However, the teacher had no knowledge of the assessment conditions or the outcome of assessment. Each condition lasted 10 min, and an entire sequence of five conditions (alone or ignore, attention, escape, tangible, and toy play) was completed daily for 4 days. During these conventional analyses, one investigator conducted the sessions while two investigators served as observers.

Molly's target behavior was aggression toward adults. Therefore, an ignore condition was employed in which an investigator sat in the room with her and ignored all appropriate and aberrant behavior. In the attention condition, Molly was seated at a table with an academic task while the investigator sat across the table and read a book. Upon occurrence of the target behavior, the investigator immediately provided attention (e.g., "Please don't do that," "Stop, you're hurting me"). All other behavior was ignored. In the escape condition, the student was seated at a work table while the investigator prompted the student through a task considered by the teacher to be demanding using a verbal-model-physical prompt hierarchy (Iwata et al., 1982). If the student engaged in aberrant behavior, the task was immediately discontinued and removed from the table for 15 s. Appropriate task behavior received no consequences. The tangible condition was similar to the attention condition except that a favorite toy, activity, or edible was provided contingent upon each emission of the target behavior. The toy play condition was designed to provide an enriched environment and served as a control for the other conditions. During this condition, appropriate behavior was praised and inappropriate behavior was ignored. The student was allowed to choose from a variety of activities or toys while the investigator provided periodic praise and encouragement approximately every 30 s.

A-B-C assessment for Teacher 1. Prior to the initiation of the descriptive analyses (Bijou et al., 1968), the first author met with the teacher during two 1-hr sessions to familiarize the teacher with the assessment technique. Two days prior to the initial training session, the investigator provided the teacher with a written description (Sasso & Reimers, 1988) of how to conduct an A-B-C assessment in the classroom. During the first training session, the investigator provided a series of behavioral examples and asked the teacher to code the behaviors based on these descriptions of discrete events. The investigator then asked the teacher to practice coding the behavior of one of the students in her classroom who was not a subject in the investigation. The investigator and teacher met for a final training session and reviewed the student activities that would be involved in the analyses and the method of data collection, answered any questions, and developed a schedule for the collection of data. The schedule was initially determined through the identification of tasks and activities within the daily classroom routine that would most resemble experimental analogues. Activities were identified that were either solitary (e.g., free play), low in demand but high in teacher attention (e.g., morning play with teacher), high in both task and teacher demand (e.g., vocational tasks), or low in demand and teacher attention. Data collection times were scheduled daily during these times, and four 15-min sessions were conducted for each of the activities.

During assessment sessions, the teacher recorded the occurrence of the target behavior, antecedents, and subsequent events with no alteration of the classroom procedure during the four identified task situations (see data collection below). The teacher did not analyze or otherwise act on the data obtained during this assessment. One observer was present during approximately 50% of the sessions to obtain data for agreement ratios.

Classroom analysis for Teacher 1. Training for this assessment procedure was completed in a manner similar to that for the A-B-C training procedure. The teacher first became familiar with experimental

analysis by reading a description of the technique followed by two training sessions that included practice with a student not involved in this study, review of activities that constituted assessment conditions, and the method and schedule of data collection.

The teacher then conducted experimental analyses through conditions modified for the classroom environment. First, routine tasks and activities were identified that approximated antecedent events described by Iwata et al. (1982) and Durand and Crimmins (1988). Thus, a free-play activity (alone), vocational task (demand), game activity (toy play), self-help task (attention), and individual work (tangible) were selected and modified in a manner that allowed the teacher to control antecedent and consequent stimuli according to the specifications of each assessment condition. The teacher than completed a series of four 10-min sessions for each of the five conditions with the student. These sessions were identical to the investigator-conducted functional analyses, with the exception that these assessments were conducted by the teacher, in the classroom, using tasks and activities that were part of the child's daily routine. The teacher did not analyze or otherwise act on the data obtained during the assessment. Two observers were in the classroom during these sessions. One of these observers obtained data using the same method as the teacher, while the other observer recorded data related to procedural reliability.

Acceptability measure. Acceptability ratings were obtained within 3 days before and after the completion of each assessment condition using the Treatment Acceptability Rating Form–Revised (TARF–R) (Reimers, Wacker, & Cooper, 1991). This measure was used to identify those variables that affected teacher ratings of acceptability of the assessment procedures, and factors related to the subsequent use of the two teacher-conducted assessment procedures. The TARF–R is a 17-item self-report survey, with items scored on a 7-point Likert-type scale. Scores can range from 17 to 119, with higher scores representing greater acceptability.

Replication. Following assessment and treatment with Teacher 1 at the elementary school, the sequence was repeated with the second teacher and second student in the junior high school setting. All training procedures remained identical to those used with Teacher 1, except that Teacher 1 trained Teacher 2 to conduct both the A-B-C and classroom analysis. The assessment sequence for Tim was identical to that for Molly. An investigator conducted an initial conventional analysis in the vocational training room. Five analogue conditions were randomly alternated across each of four sessions (ignore, attention, escape, tangible, toy play). This was followed by A-B-C and classroom analysis completed by Teacher 2 in the classroom.

Treatment. The results of assessment for the 2 students were used to develop interventions for aberrant behavior. For Molly, the intervention consisted of a combination of contingent positive reinforcement, response cost in a chained schedule, and mand training. This intervention was based on the assessment data and was selected because it combined a reversal of maintaining contingencies (Northup et al., 1991) with instruction for appropriate communication. That is, Molly's assessment results suggested that her aggressive behavior was maintained by escape and tangible functions. The intervention was designed to remove attention for the aberrant behavior and prompt a manding response to escape the task briefly and to engage in a preferred activity. The response-cost component (i.e., additional task responses) was included to strengthen the intervention further (Wacker et al., 1990). The initial treatment was conducted during vocational and transition activities due to the high level of demands inherent in these activities. Transition activities required Molly to stop performing an independent activity, move to another work area in the classroom, and begin participating in a new task. The vocational task required her to assemble ball-point pens.

The teacher was instructed to engage Molly in an activity. Upon completion of one task, Molly was allowed to engage in a game or activity of her choice. These preferred activities were shown to Molly prior to each treatment session and were visible during the session. When she engaged in aberrant behavior, she was required to complete one more task before the preferred activity was

available. Upon completion of the additional task, the teacher prompted Molly to request a break, and she was then allowed to engage in the preferred activity. Physical assistance was used if any task resistance was encountered. In addition, prior to each target task, Molly was told she could engage in a preferred activity at any time if she asked for a break.

The results of Tim's assessment showed an escape function for aggressive behavior. Intervention consisted of a guided compliance procedure serving as escape extinction. This treatment was implemented across two vocational tasks (towel folding and sorting) that often resulted in aggression. At the initiation of the tasks, Tim received a verbal prompt to begin work, followed by a delay of 3 min. If Tim began working within the delay period, no further prompts were given and the teacher removed herself from the immediate work area. If he did not engage in task behavior within the delay period, the teacher repeated the prompt and physically assisted Tim with the task. Similarly, if he did not remain on task for 5 s, a second verbal prompt was used, followed by close teacher proximity and finally physical assistance. All instances of aggression were followed by an immediate physical prompt back to the task. He was then required to complete the task. This treatment was selected based on our analysis of the assessment results. That is, Tim's aggression appeared to function to avoid adult contact rather than to avoid task demands.

Follow-up. A 1-month probe was conducted to determine whether or not appropriate behavior was maintained with treatment. Treatment continued for both students following the last formal intervention session, and the 1-month probe represented behavior under continued treatment.

Data Collection and Interobserver Agreement

The first author and three trained observers recorded data on the dependent variables during each conventional analysis using a 6-s partial-interval recording procedure. Target behaviors were recorded by the teacher during the A-B-C assessment through event recording in which each occurrence of the target behavior and its antecedents and consequences were recorded. Thus, the measures reflect the number of occurrences of behavior across the 10-min assessment conditions. For example, if Molly hit the teacher during a demanding task and the teacher ignored her, the sequence was coded as follows: demand (antecedent), hit (behavior), and ignore (consequence). Measures of the dependent variables during the classroom analyses were obtained by the teacher using an event recording procedure across each 10-min assessment condition. Interobserver agreement probes were also conducted with the teachers for A-B-C and classroom analogue assessments by the trained observers.

Measures of independent variables (procedural reliability) during the conventional and classroom analyses were obtained by the trained observers using a 6-s partial-interval recording procedure. For example, during a demand condition, the observer recorded whether or not the assessor allowed the child to escape the task situation following an instance of aberrant behavior. Likewise, it was noted whether social interaction occurred approximately every 30 s during the toy play condition, whether disapproval followed each instance of the target behavior during the attention condition, and when a preferred item was presented to the child during the tangible condition following each occurrence of the target behavior. These measures were obtained during probes of the conventional and classroom analysis sessions for 25% of all sessions.

Treatment effects were measured by trained observers using a 6-s partial-interval recording procedure. During these sessions, on-task behavior as well as the target aberrant behaviors were measured across baseline and treatment for the 3 students.

Agreement for dependent measures. Interobserver agreement measures for the dependent variables during conventional analyses (50% of sessions) were calculated on an interval-by-interval basis by dividing the number of agreements by the total number of agreements plus disagreements and multiplying by 100%. Average occurrence agreement was 82.4% (range, 79.6% to 92.5%) for the 3 subjects. The A-B-C assessment measures of agreement were conducted using the teacher's event data during 50% of the recording sessions, and

were calculated by dividing the smaller total occurrence of behavior by the larger total and multiplying by 100%. Agreement was calculated for each antecedent and behavior sequence. Interobserver agreement averaged 76.4% (range, 70% to 86.9%) across subjects. Interobserver agreement during classroom functional analyses was calculated in an identical manner to the A-B-C assessment (i.e., using teacher data) during 40% of the recording sessions, yielding an average agreement of 84% (range, 71.3% to 91.1%) for the 3 subjects.

Agreement for independent measures. Agreement measures for the independent variables were obtained for 50% of the conventional analyses and 35% of the classroom analyses. Agreement was calculated on an interval-by-interval basis by dividing the number of agreements by the total number of agreements and disagreements and multiplying by 100%. Average occurrence agreement was 89% (range, 88.2% to 96.4%) for conventional analyses and 90% (range, 85.2% to 100%) for the classroom analyses.

Agreement for treatment measures. Interobserver agreement measures were obtained for 25% of the treatment sessions for the 3 subjects. Occurrence data were computed on an interval-by-interval basis and averaged 91.4% (range, 79.6% to 100%).

RESULTS

Assessment

Figures 1 and 2 present the results of assessment for the target students. Data from the initial investigator-conducted (conventional) experimental analyses are represented by percentage of intervals. The A-B-C and classroom analysis data are those obtained using event recording by the teachers and are presented as rates.

The assessment results for Molly are presented in Figure 1. During the conventional analysis, Molly engaged in no verbal or physical aggression during the toy play, attention, or ignore conditions. The escape (M = 28.2%, range, 16% to 39%) and tangible (M = 16.2%, range, 13% to 30%) conditions consistently yielded moderate levels of aggressive behavior. The classroom analysis replicated these findings with a mean of 1.9 per minute (range, 1 to 3.5) across escape sessions and 1.4 per minute (range, 0.80 to 1.8) for the tangible sessions. The A-B-C assessment suggested escape (M = 4.8 per minute, range, 1 to 9.1) and tangible (M = 1.2, range, 0.80 to 1.9) functions. Overall, these results suggested that Molly's aggression was maintained primarily by escape from task demands to engage in more preferred activities.

The assessment results for Tim (Figure 2) suggest an escape function. The mean percentage of aggression in the escape condition during the conventional analysis was 51.2% (range, 31% to 70%), and aggression did not occur during any of the other conditions. During the A-B-C assessment, aggression averaged 2.0 (range, 1.1 to 3) under the escape condition. Likewise, the classroom analysis resulted in aggression only during demand conditions (M = 2.1, range, 1 to 2.7).

Treatment

Treatment data for Molly are shown in Figure 3. During the transition task, average baseline percentages were 7.67% for aggression and 33% for on-task behavior. Treatment resulted in a sevenfold decrease in aggression to a mean of 1%, with a concurrent increase in on-task behavior (M = 88.6%). The effect of treatment across the vocational task was not conclusive. Following baseline measures across aggression (M = 14.6%) and on-task behavior (M = 66.8%), the percentage of aggressive behavior decreased (M = 2%) and time spent on-task increased (M = 93.8%). However, the ascending trend during baseline for on-task behavior and descending trend for aggression preclude definitive statements concerning the effectiveness of treatment during the vocational task. One-month follow-up data showed maintenance of these behavioral patterns across both tasks.

Treatment data for Tim are shown in Figure 4. During the first vocational task, baseline percentages were relatively stable, with means of 21% for aggression and 25.3% for on-task behavior. Treatment resulted in a decrease of aggression to a mean of 1%, with a concurrent increase in on-task be-

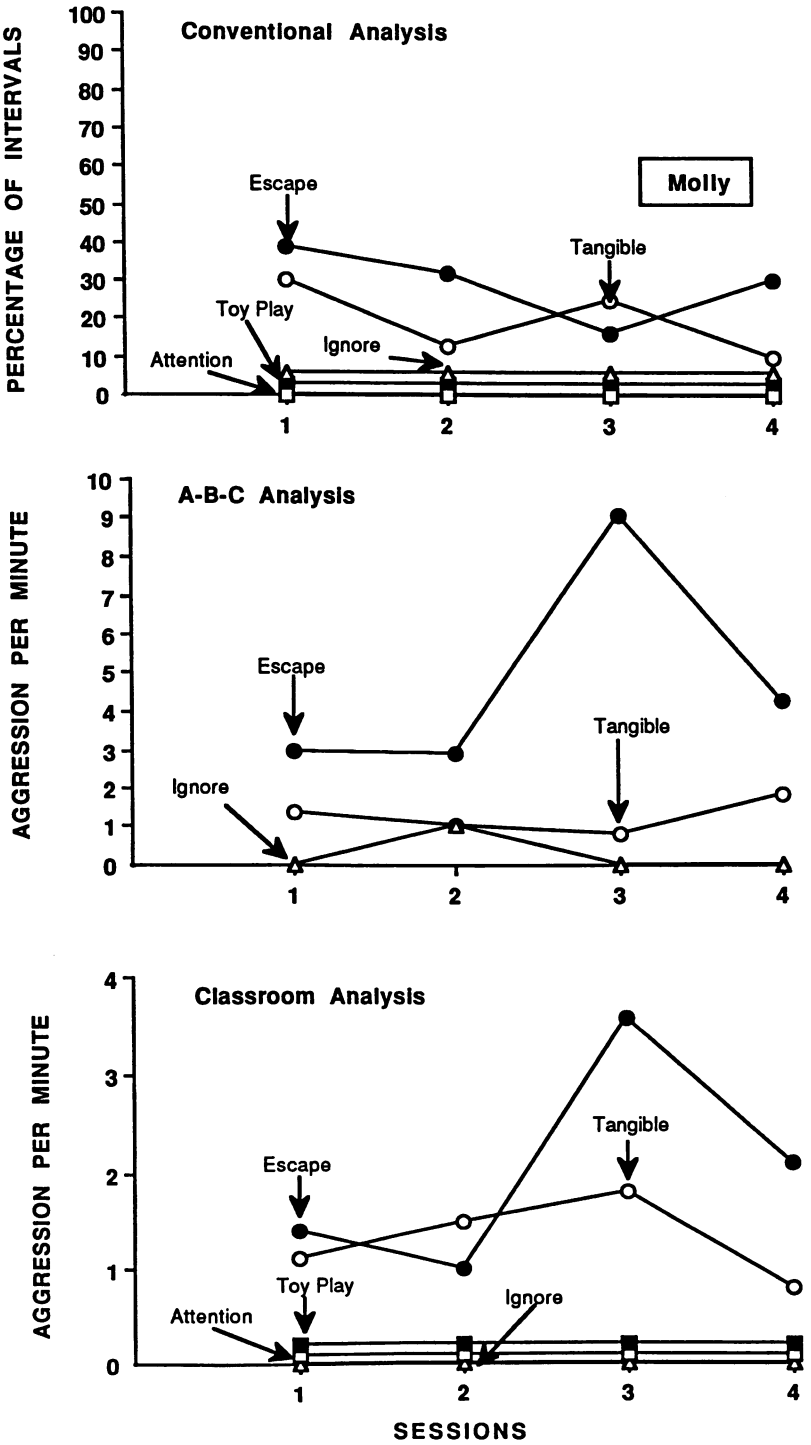

Figure 1. Functional analyses of maintaining conditions for Molly using conventional, A-B-C, and classroom analysis assessments.

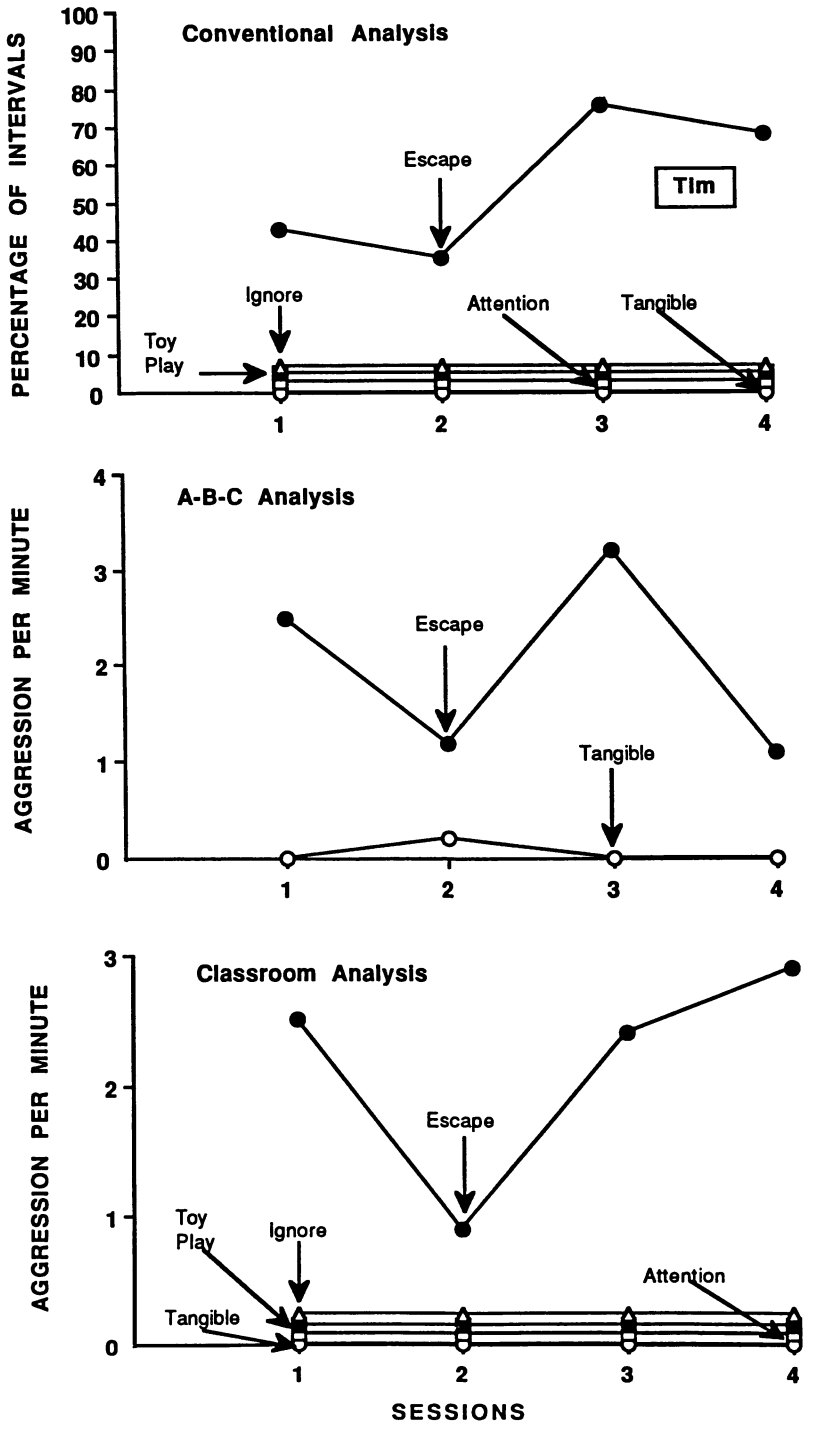

Figure 2. Functional analyses of maintaining conditions for Tim using conventional, A-B-C, and classroom analysis assessments.

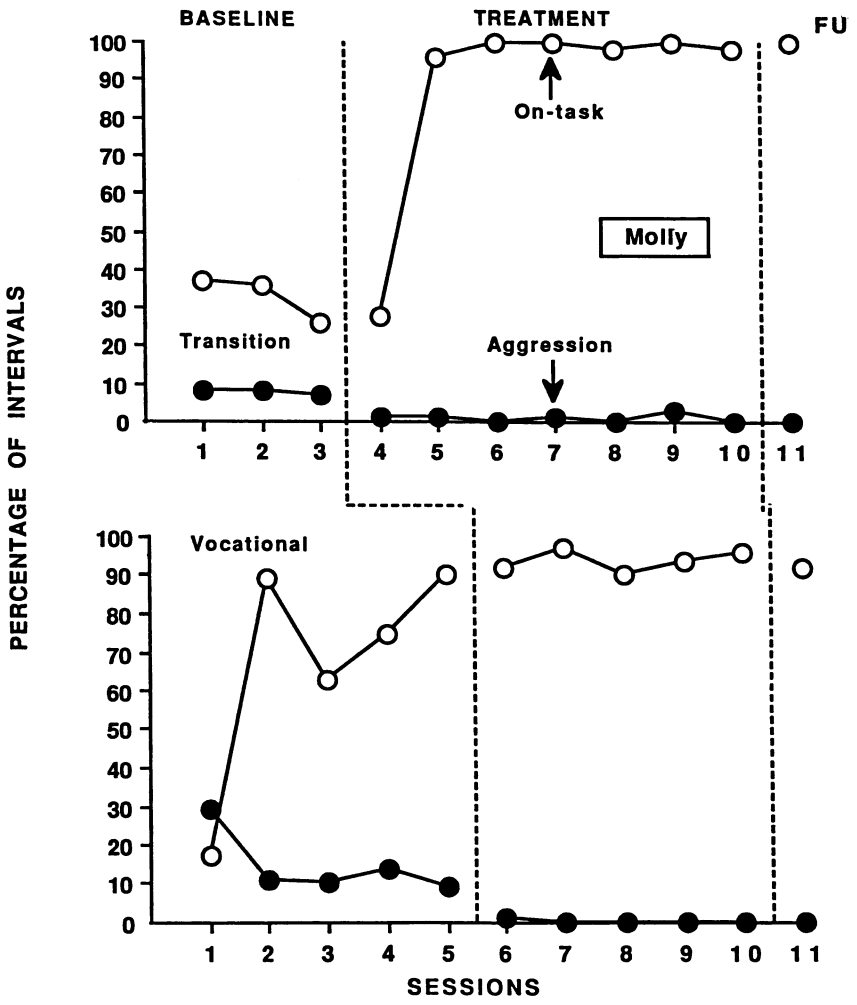

Figure 3. Percentage occurrence of aberrant and on-task behavior for Molly during baseline and treatment across transition and vocational tasks.

havior (M = 34.4%). For the second vocational task, Tim's baseline percentages of aggression and on-task behavior were 15.5% and 25.5%, respectively. Treatment resulted in a decrease in aggressive behavior (M = 4.5%) and an increase in on-task behavior (M = 41.5%). A 2-week follow-up probe showed maintenance of treatment effects for both behaviors.

Acceptability

Results from the TARF–R indicated that for Teacher 1, both teacher-conducted assessment procedures were rated as highly acceptable. For example, the A-B-C procedure received a score of 95 prior to implementation and a score of 100 following implementation. Scores for the classroom analysis were similar (before, M = 88; after, M = 96). Ratings of acceptability obtained from Teacher 2 indicated relatively similar ratings for the A-B-C assessment both before assessment (M = 77) and after assessment (M = 74). However, for the classroom functional analysis, an increase in the overall rating of acceptability was obtained (before, M = 84; after, M = 96). An inspection of the TARF–R variables indicated that this overall improvement in rating of acceptability was due to an increase in the rated effectiveness and concurrent decrease in the rated level of disruption during the classroom analysis postassessment ratings. Thus, both the descriptive and experimental assessments were rated

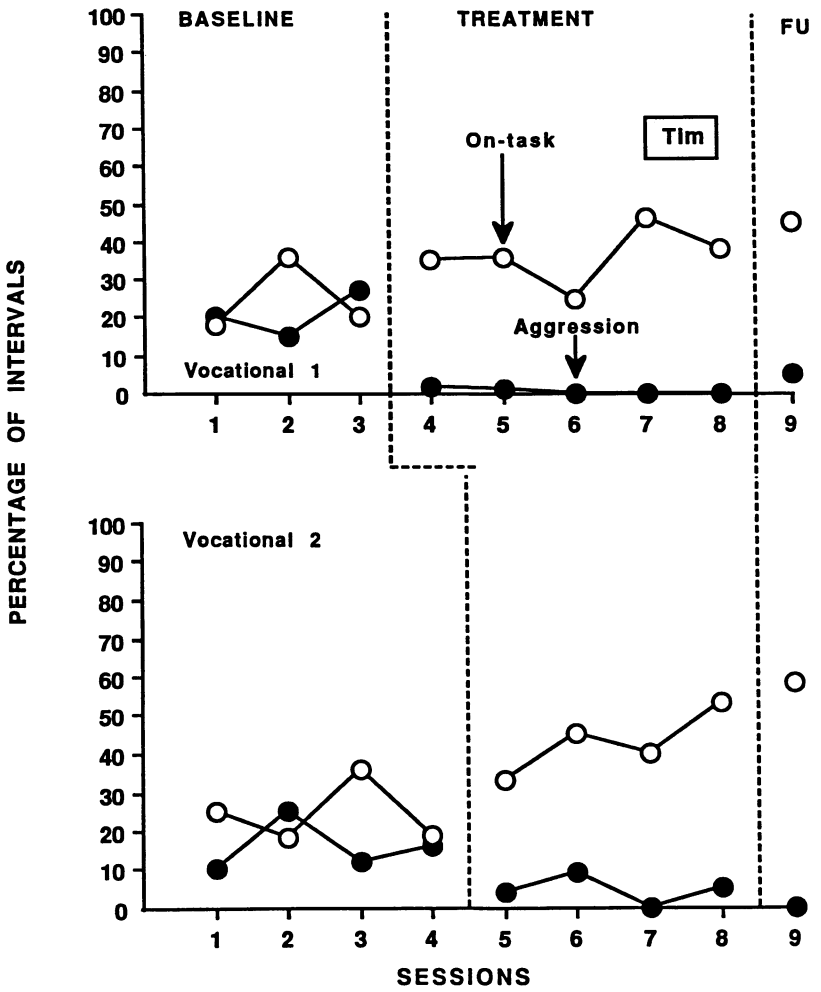

Figure 4. Percentage occurrence of aberrant and on-task behavior for Tim during baseline and treatment across two vocational tasks.

similarly at the conclusion of the investigation. However, given the relatively high preassessment mean scores for both teachers, it is not possible to make any clear statements concerning differences in acceptability between forms of assessment.

DISCUSSION

Three findings from this study are especially notable. First, the three methods of assessment yielded very comparable findings, suggesting that experimental analyses conducted outside of typical settings can be valid, and that teachers can be trained to conduct similar analyses within classrooms. This finding, like those of Cooper, Wacker, Sasso, Reimers, and Donn (1990), Mace and West (1986), and Northup et al. (1991), supports the applicability of functional analysis procedures across settings, therapists, and situations. Although follow-up studies continue to be needed to extend the applicability of functional analysis procedures, this study and those cited above suggest that the procedures are quite robust.

Second, the interventions based on the assessment data were effective in reducing target behaviors. This finding replicates those of Cooper et al. (1990), Carr and Durand (1985), and others. However, both interventions were selected in conjunction with and conducted by the classroom teachers; this is an extension of previous research.

Third, the rated acceptability of the teacher-conducted assessments remained high from pre- to postassessment measures, with increases in acceptability occurring for the classroom analysis. This finding suggests that when teachers are shown how to conduct functional analyses and given brief consultation, the acceptance and continued use of such analyses are facilitated. Applications of functional analysis procedures in the context of ongoing school consultation need further examination. For this study, ongoing consultation was needed primarily to interpret the assessment findings, not to conduct the intervention or assessment conditions.

One potential concern with these results is that the method of data collection in this study differed across forms of assessment. However, given the consistency of our results, we are not overly concerned by these differences. We attempted to use a measurement system comparable to those most often used by teachers (event recording) and methods used most often by previous researchers who evaluated functional analysis procedures (interval recording). The comparison, then, was not only across analysis methods but also across methods of data collection, with strikingly similar results.

Our descriptive (A-B-C) assessment differed somewhat from traditional applications. It is conventional for observations of behavior to occur across all possible activities (Bijou et al., 1968). In the present investigation, we arranged predetermined times and activities for these observations. Thus, the resulting assessment data obtained during the A-B-C procedure represent information specific to each situation. Specific situations were used to provide a sample of behavior representative of each child's activities during the day. This was done because it provided a more time-efficient method of assessment comparable to the time dimension of the classroom functional analysis.

Questions do remain, however, concerning the comparability of the assessments conducted by investigator and teacher. The data obtained in this study, although limited to 2 subjects, suggest that any of the three methods might be used to assess functional variables that maintain aberrant behavior. The consistency of the results suggests that descriptive assessments can be used to identify classes of potential maintaining events that control aberrant behavior. Once these are identified, functional analyses can be conducted either in the natural setting or in a more controlled setting to validate the results. As discussed by Mace and Lalli (1991), the benefit of preceding functional analyses with descriptive assessments is that the range of potential maintaining events can be, perhaps, reduced, and specific controlling events (e.g., specific tasks) can be identified.

Two other sources of data support the utility of the classroom functional analysis. The procedural reliability data showed that these procedures can be used by teachers with great integrity across both subjects and types of behavior (i.e., aggression and disruptions). The utility was further supported by the high postassessment acceptability ratings given to the procedure by the teachers. The difference in acceptability ratings between the A-B-C assessment and classroom analyses by the second teacher is of particular interest. The A-B-C techniques are common to most teacher training programs and thus are familiar procedures. Anecdotal statements from the second teacher suggested that the classroom functional analysis provided a combination of the best components of experimental and descriptive analyses. That is, classroom analyses allow a measure of experimental control to be maintained in natural environments. Thus, it may be that we underestimated the social validity of classroom functional analysis techniques. Axelrod (1992) suggested that consumers do not continue to use functional analyses following training, and others have also been critical of the transfer potential of this technology. However, there is little argument concerning the potential benefit to clients offered by a determination of the functional variables maintaining aberrant behavior. The issue, then, appears to be one of continuing to identify ways to extend experimental analyses to field settings.

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Received September 6, 1991
Initial editorial decision December 7, 1991
Revision received April 17, 1992
Final acceptance August 27, 1992
Action Editor, F. Charles Mace