Effects of Video Modeling Alone and With Self-Management on Compliment-Giving Behaviors of Children with High-Functioning ASD

Allison Lowy Apple
Felix Billingsley
Ilene S. Schwartz
University of Washington

Abstract: Children with high-functioning autism spectrum disorders (ASD) typically exhibit a lack of social reciprocity skills. They often struggle to maintain conversations, especially with topics of little or no interest to them, and to create meaningful relationships. By giving compliments to others, children with ASD have a means by which to show approval for issues of interest to others. Video modeling has been shown to be effective in teaching social behaviors, particularly when it is followed by additional practice, prompts, and role playing. This study, involving two experiments, focused on teaching compliment-giving responses and initiations through video modeling with embedded, explicit rules for giving compliments in the place of additional procedures following video viewing. A multiple-baseline design across participants revealed that video modeling with explicit rules served to produce and maintain compliments of the "response" type. Video modeling with the addition of contrived reinforcement contingencies served to produce compliment-giving initiations in the presence of a teacher who monitored the children's behavior. The results of Experiment 2 showed that the inclusion of self-management strategies increased the children's independence in the monitoring of their compliment-giving initiations. Experimental results pointed to the use of self-management as a means by which to produce social initiations when video modeling alone fails.

Children with high-functioning autism and Asperger syndrome tend to be socially rejected because of their inability to sustain appropriate social interactions with peers. Their reciprocity skills also suffer because of their restricted repertoires of interests (Berkell Zagar, 1999). Although these children may be competent in social skills, such as sharing and turn taking, they lack the skill of compliment giving, a foundation for learning and understanding the social reciprocity of friendships (Attwood, 1998). Compliment giving appears as a measure of social competence on scales such as the *Social Skills Rating System* (Gresham & Elliot, 1990) for children as young as preschool age.

When compliment giving has been taught in the applied literature, it has been addressed in combination with other social skills, such as conversational or play skills, wherein specific findings for compliment giving have not been assessed (Calpin & Cinciripini, 1980; Kamps et al., 1992; Wildman, Wildman, & Kelly, 1986). The findings of Kamps et al. (1992) indicated that targeting fewer social behaviors at one time could allow children with autism to have greater success in acquiring new behavioral repertoires.

It has been demonstrated that video modeling can be employed effectively to teach social skills to children with autism (Charlop & Milstein, 1989; Charlop-Christy & Daneshvar, 2003; Charlop-Christy, Le, & Freeman, 2000; D'Ateno, Mangiapanello, & Taylor, 2003; Taylor, Levin, & Jasper, 1999; Wells & Haymes, 2000; Wert & Neisworth, 2003). Although models for appropriate behavior may include adults or peers, many researchers have found that the use of peers as models is more effective when teaching children with autism (Charlop, Schreibman, & Tryon, 1983; Egel, Richman, & Koegel, 1981; Kamps et al., 1992; Tryon & Keane, 1986).

Video modeling typically is successfully implemented as a package intervention (Brown & Middleton, 1998; Charlop & Milstein, 1989; Charlop-Christy & Daneshvar, 2003;

Poche, Yoder, & Miltenberger, 1988). To date, few investigations have used video modeling as the single tool to produce changes in behavior (i.e., without prompts for behavior after video viewing, further practice or instructions, or employment of any additional independent variables following the video intervention). D'Ateno et al. (2003) used video modeling as the single independent variable to teach play sequences and saw a marked increase in motor and verbal behaviors that were directly modeled in the video, but they observed little generalization of those behaviors. Hepting and Goldstein (1996), who used video modeling as the single independent variable for requesting behaviors, suggested that their intervention produced little behavior change because the children had to apply a specific linguistic rule that was not explicitly explained in the videos. In addition, the need for explicit instructions was cited as a way to potentially increase generalization. It has been further documented that children on the autism spectrum tend to perform better on rule-based tasks (Minshew, Goldstein, Muenz, & Payton, 1992), a finding that indicates the need for explicit rules in instruction for this population, when possible. Wert and Neisworth (2003), who used video self-modeling, saw an increase in spontaneous requesting behaviors that had been previously emitted at a low frequency before video exposure. However, self-as-model interventions, which expose the children to target behaviors before intervention, have not been found to be more effective in increasing social responses as compared to peer models (Sherer et al., 2001).

Experiment 1 of the study assessed the effectiveness of teaching children with high-functioning autism and Asperger syndrome compliment-giving initiations and responses through peer video modeling alone. In contrast to previous video modeling investigations, explicit instructions for each target behavior were embedded within the video presentations.

EXPERIMENT 1

Method

PARTICIPANTS AND SETTING

Two 5-year-old boys with autism spectrum disorders (ASD) participated in Experiment 1. Diagnostic information was obtained from the children's educational records. The participants, like many children with high-functioning autism or Asperger syndrome, exhibited language ability, intellectual functioning, and academic performance at near-normal levels, but their social capabilities were markedly impaired (Gillberg & Ehlers, 1998). Both children performed within one standard deviation of the mean (scores of 86 and above) on the *Peabody Picture Vocabulary Test–Third Edition* (PPVT-III; Dunn & Dunn, 1997), a receptive vocabulary test. Subjective assessments of core interaction skills (i.e., sharing, turn taking, and sustained engagement during free play) were collected through a prestudy questionnaire given to teachers and parents.

Roger, age 5 years, who had been diagnosed with Asperger syndrome, received a standard score of 119 on the PPVT-III, which was categorized as a moderately high score, and an age-equivalent score of 6 years 6 months. Prestudy questionnaires for teachers and parents and prestudy student interviews, described in detail in the following section, were administered to assess the children's social skills ability as compared to that of their typically developing classmates and to obtain information about their prior experience with compliment-giving behavior. The teacher prestudy questionnaire revealed Roger's ability to play along side his peers but reported a low frequency of his social initiations or sustained verbal interaction with peers. Both parents and teachers reported on Roger's inability to use compliments in daily interactions. Teachers additionally rated Roger's social skills as a "3," or "moderate" on a Likert scale of 1 to 5, as compared to the abilities of his typically developing peers. Roger's responses in a student prestudy interview supported his lack of knowledge regarding compliment-giving behavior.

Erik, age 5 years 1 month, who had been diagnosed with autism, received a standard score of 86 on the PPVT-III. This score was considered a low-average score, with an age equivalent of 3 years 8 months. Erik's prestudy questionnaires revealed his ability to engage only in limited social interaction with peers, as demonstrated by turn-taking ability and a few initiations. Erik's teacher rated Erik's social ability as a "2" on the Likert scale, or relatively low compared to that of his peers. All questionnaires and interviews revealed the absence of compliment-giving behavior in Erik's verbal repertoire.

The participants attended a half-day integrated preschool and an extended day program for children with ASD. Baseline and intervention phases were conducted in the children's integrated preschool classrooms during free-play time. Each classroom consisted of approximately four adults and 16 students. A minimum of 6 students in each classroom did not have a diagnosed disability. Free play lasted 30 min in the classrooms the participants attended.

PRE- AND POSTSTUDY QUESTIONNAIRES AND STUDENT INTERVIEWS

Parents and teachers of the students received a questionnaire before and following the study that focused on rating the children's social skills, their relationships with their peers, and their experiences with compliment-giving behavior. Teachers were asked to rate the children's social interaction skills as compared to those of their typically developing peers on a Likert scale of 1 to 5 (i.e., 1 = *low,* 5 = *equal to peers*). Teachers were also asked to list three peers with whom the students spent time. Parents were given a preference assessment in their prestudy questionnaires to identify items that might serve as stimuli to evoke

meaningful compliments. Parents were also asked to identify whether they observed their children giving compliments to others. Investigators also conducted student prestudy and poststudy interviews to assess each participant's ability to give compliments, as well as his understanding of compliment-giving behavior. For example, students were asked to make a compliment and to talk about how compliments make people feel. These questionnaires and interviews may be obtained from the first author.

COMPLIMENT-GIVING RESPONSE DEFINITIONS

Compliment-giving behaviors were defined by three separate sentence structures. The sentence structures were chosen from the three most common compliments heard in a preschool and kindergarten classroom observation made by the first author before the study. The first compliment-giving sentence type employed the following grammatical structure: positive-describing word with or without mention of target item of possession or activity of engagement. Positive-describing words were defined as adjectives that convey a message of "approval." Examples of this structure included the phrases "Neat!" "Nice!" "Cool shoes!" "Cool picture!" The second sentence type followed the structure "I like," with the inclusion of the item of possession or activity of engagement. Examples included "I like your shoes" and "I like your picture." The third sentence type was constructed to include "You have/made," along with a positive-describing word and the item of possession or activity of engagement; for example, "You have a neat shirt," "You're making a nice picture," and "You made a pretty puppet."

If any complimentary statements were heard that did not fit grammatically into the three defined sentence structures, observers wrote them down and marked them with an "I" (self-initiated compliment) or an "R" (response compliment). Written compliments were presented separately to a parent, a teacher, and a preschool student (at least 4 years of age) after the observation. If all of the three raters confirmed that in their opinion the statement was a compliment and a "nice thing to say to a friend" (as restated for the preschooler if necessary), the frequency count was changed to include that statement. If all of the raters did not all separately conclude that the statement was a compliment, the statement was not added to the frequency count.

VIDEO CONTENT

Video actors were chosen based on teachers' impressions of the participants' positive relationships to the peers as revealed in the prestudy questionnaires. Eight separate video segments using classroom peers, four for each participant, were made. Three of the four videos for each participant modeled compliment-giving "responses" (one video for each sentence structure type), and the fourth video modeled compliment-giving "initiations" (with examples of all three sentence structures within each segment).

In the responses segments, one peer was instructed to show the other an "item of interest" (as identified for each participant in prestudy questionnaires) and say, "Look!" or "Look at my _____." The second peer was then instructed to give a compliment about the item of interest, using the prescribed sentence structure type for that vignette. This process was repeated until six examples of a "Look!" statement accompanied by a compliment were completed for each video. After editing, each video example lasted approximately 1 min. In the initiations segment, one peer was asked to give a compliment about an item of interest in the possession of the other peer in the absence of the "Look" statement. Two examples of each of the three sentence structure types were modeled in this video, with a total of six examples of initiations. After editing, these videos also lasted approximately 1 min. One responses segment and the initiations segment were shown daily. On the first and second days of the intervention, a responses video was randomly chosen. On the third day, the only video not yet shown was presented. Further presentations of the video were rotated daily in order. The order of the presentation of the initiations versus responses segments was also randomly chosen each day.

Adults participated in the videos to provide the explicit instructional rules for when and how participants needed to engage in each compliment-giving target behavior. For example, following a responses segment, adults might say, "When someone says, 'Look,' we can say, 'cool.' " After segments targeting compliment-giving initiations, adults might say, "When we see our friends playing with things that we like, like airplanes, we can say, 'Neat airplane!' " Adults would insert examples of each participant's items of interest.

DATA COLLECTION

Data were collected using a frequency count over a 15-min period and were displayed graphically as a frequency count per observation period separately for responses and for initiations in each phase of the study. When participants made compliments in response to a peer's initiation (i.e., a "Look" statement), a tally mark was placed on the data sheet under the heading Responses. Any compliments made more than 15 s after a peer's prescribed initiation or at any other time during the observation period were coded as initiations.

EXPERIMENTAL DESIGN

A multiple-baseline design across participants was used to assess the effectiveness of the intervention. Each child was exposed to a baseline phase, a video modeling phase, and two subsequent phases on review of the results from the

video modeling phase. A withdrawal phase, in which conditions were identical to baseline procedures, was also implemented immediately following the additional phases.

PROCEDURES

Baseline

In baseline conditions, children were observed in their classrooms for 15 min of free play. Because demonstrating compliment-giving responses required specific discriminative stimuli according to the experimental procedures, baseline conditions included the specific antecedent events used to evoke the compliment-giving responses assessed in intervention. For example, if the occasions did not present themselves naturally, teachers prompted a classroom peer (chosen randomly each time) to make a "Look!" statement, creating the opportunity for the participant to respond with a compliment about the peer's item of interest. Teachers did not instruct peers to make any initiations until 7 min of the observation period had elapsed, and they could only do so a maximum of two times, depending on whether or not a natural peer initiation occurred. Prompted peer initiations were separated by at least 2 min. Teachers were instructed to provide social praise for any compliments given during this period.

Video Modeling

Approximately three times per week, each participant was escorted to another classroom to watch a "movie" during the free-play period. The participants watched one of the three responses video segments (rotated daily on a random schedule) and the initiations video segment. Adults who accompanied the children to the room were allowed only to answer questions or statements from the children that indicated they did not understand what a video actor had said. For example, if a participant said, "What did he say?" or "I didn't hear him," the adult could repeat what the actor said or rewind the video for the participant to listen to again.

At the conclusion of the video, the children were sent back to class for free-play time. Data were immediately collected for 15 min of the play period following video exposure. Conditions for the observation period in the video modeling phase followed the same procedures outlined for the baseline phase.

Video Modeling and Reinforcement Phase

Because the children did not make compliments of the initiations type in the previous phase (see Figure 1), tangible reinforcement was added to the original experiment. The participants were escorted to watch the videos on the same schedule and in the same manner as during the video modeling phase. Before returning to the classroom, the adult initiated a verbal contract with the student, who would receive a specified prize (e.g., identified from a prestudy preference assessment) once he made four compliments. Teachers were allowed to help the children keep track of the number of compliments by telling them how many they made in total after each compliment.

Two peers were instructed to approach the participants during the observation period, as in the previous phases, although the approaches could be made at any time during the observation period. The responses to peer approaches were included as part of the criterion of four compliments per session, making the participants responsible for making two compliment-giving initiations to access their prizes.

Reinforcement Phase

In this phase, the video modeling component was dropped, but the verbal contract with tangible reinforcement contingency remained in place. Procedures for the observation period occurred in the same manner as in the prior phase.

Withdrawal of Tangible Reinforcement

During this phase, participants were exposed again to baseline conditions. Two peer approaches were planned, and reinforcement occurred only in the form of teacher praise for compliments given.

RELIABILITY

Interobserver Agreement

Interobserver agreement was calculated across all phases for each participant, for 33% of the observation periods. Agreements between the primary and secondary observers were calculated by dividing the smaller total frequency count by the larger total frequency count and then multiplying by 100 for each participant. Interobserver agreement for both children in all phases was 100%.

Procedural Reliability

Procedural reliability (Billingsley, White, & Munson, 1980; Peterson, Homer, & Wonderlich, 1982) was calculated in Experiment 1 for the behaviors of the teachers who prompted the peers, and for the peers who approached the participants. The following five behaviors were assessed: the peer was given an item of interest or had an item of interest in possession; the teacher prompted peer to say "Look," and the participant's name; the participant's attention was achieved; the peer said "Look," and the participant's name; and the teacher did not give any verbal prompts to participants or make any compliments other than social praise for student's independent compliment-giving behavior. Reliability checks were conducted for 50% of the observation periods in each phase of the study. Procedural reliability was calculated using the formula proposed by Billingsley et al. (1980), in which the total number of appropriate behaviors was divided by the total number of opportunities to perform the behaviors and

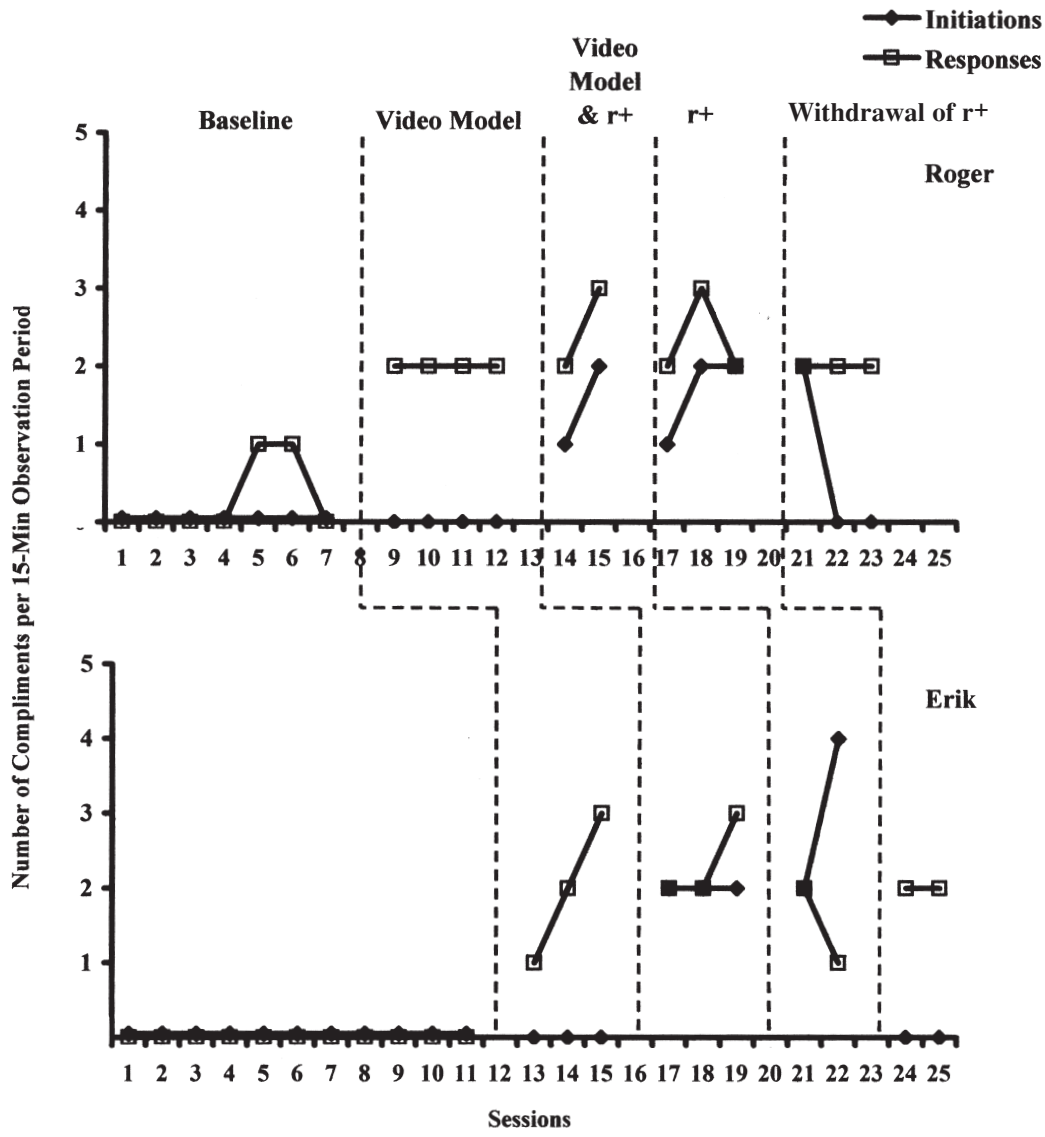

Figure 1. Frequency count of compliment-giving initiations and responses per observation period for the participants in Experiment 1.

then multiplied by 100. Across all calculated sessions and both participants, the average procedural reliability was 90%, with a range of 84% to 97%.

Results

Figure 1 displays the number of initiation and response compliments per session for each phase of the study. Although the number of initiations that could be made during that time was unlimited, the number of response opportunities was restricted to a maximum of two compliments per session. In Sessions 15 and 18 for Roger, and in Sessions 15 and 19 for Erik, however, an unplanned peer approach occurred within the observation period, creating the opportunity for both participants to respond to three peer approaches on two separate occasions.

During baseline conditions, Roger responded to a peer approach with a compliment on two separate occasions. Although these responses, "Whoa, Pokemon," and "Oh yeah!" did not adhere to the prescribed structures in this study, they were considered compliments by the all of three required raters (i.e., a teacher, a parent, and a peer).

During the video modeling phase, Roger responded to each peer approach with a compliment, but he did not make any initiations. On two occasions during this phase, compliments did not fit the sentence structure prescribed but were confirmed as compliments by all of the raters. When the reinforcement package was added in the next phase, Roger began to make initiations. When the video

viewing was removed from the treatment package in the study's fourth phase, both response and initiation compliments were maintained. In the final phase of the experiment, in which reinforcement contingencies were removed, Roger maintained his ability to respond with compliments to planned peer approaches. Initiation compliments were maintained for the first sessions and decreased to zero occurrences for the two remaining observation periods.

Once Erik was exposed to the video modeling phase, a steady increase occurred in his complimenting behavior, in the form of responses. Like Roger, Erik began to make initiations when the verbal contract was initiated in the third phase. When the reinforcement contingency was removed in the final phase, Erik maintained the use of response compliments but did not make any initiations.

In the poststudy questionnaire, Roger's teachers had rated Roger's social skills as a 3, or moderate, the same rating as they had scored in the prestudy questionnaire. The teachers, however, reported increases in interactions between Roger and his peers. Roger's parents reported that he made from 2 to 10 response compliments to his family per night during and immediately following the study. Erik's teachers gave Erik a rating of 3, or moderate, a 1-point increase in his overall social skills. They also reported that Erik seemed more willing to respond to initiations from peers. Erik's parents reported that Erik would talk about giving compliments when asked.

Student poststudy interviews revealed that both participants were able to give examples of compliments different from taught sentence structures when asked.

Discussion

During the video modeling phase, the participants acquired the skill of compliment-giving responses as a result of exposure to video modeling alone, which included explicit models for how and when to make compliments. These findings support findings of previous studies that showed video modeling as an effective intervention to teach specific social skills (Charlop & Milstein, 1989; Charlop-Christy & Daneshvar, 2003; Charlop-Christy, Le, & Freeman, 2000; Sherer et al., 2001; Wells & Haymes, 2000; Wert & Neisworth, 2003). The results also add to the existing literature, with the use of explicit rules embedded in video modeling procedures possibly contributing to the rapid behavior change exhibited by participants, who had not previously exhibited the specific behaviors or been taught the behaviors in the past.

To promote the initiation of compliments and to examine response maintenance, the video modeling and reinforcement phase, the reinforcement phase, and the withdrawal phase were added to experimental procedures. When the reinforcement contingency was dropped in the final phase, both children maintained compliments only in the response form. This result points to the reinforcement contingency and the adults' verbal monitoring of behaviors as the variables controlling the participants' initiating behavior. For example, after each compliment (the first two of which were always response compliments), the adult would say, "You made two compliments. You need two more to get your prize." In the absence of prompted peer approaches, the participants did succeed in initiating compliments to gain access to their prizes.

Results from this study showed that both participants were able to make response compliments once video modeling was removed. Furthermore, the ability to respond to others with compliments was maintained throughout the two additional phases. Because the use of response compliments was consistently maintained before, during, and after the additional procedures were dropped, it appears that the artificial reinforcers (i.e., the figurines) were not necessary for the acquisition and maintenance of this behavior.

The procedures for compliment-giving initiations in Experiment 1 were not conducive to producing independence. For the children to be successful, an adult had to be present to help the children track the frequency of their initiations and to provide tangible reinforcement. It could be argued that the teachers served also as discriminative stimuli for children to initiate compliments.

Self-management systems have proven to be effective in reducing reliance on treatment providers for success in behavior change. Self-management typically includes training individuals "to monitor their own behavior, and to continue to monitor and maintain appropriate behavior in the absence of a treatment provider" (Stahmer & Schreibman, 1992, p. 447). Devices used to help students track target behaviors have ranged from wrist counters to the retrieval of pennies or tokens (Harchik, Sherman, & Sheldon, 1992). When individuals reached a predetermined number of occurrences for appropriate responses (as evidenced by number of tokens or clicks of the counter), they typically were provided access, or were taught to independently gain access, to rewards. Results from studies involving self-management of behaviors have often shown rapid acquisition of self-management procedures, marked behavior change, and generalization of use across settings (Harchik et al., 1992; Koegel, Koegel, Hurley, & Frea, 1992; Mancina, Tankersley, Kamps, Kravits, & Parrett, 2000; Stahmer & Shreibman, 1992).

To investigate further the means to teach the children to initiate compliments in the absence of constant teacher supervision, we investigated the use of a self-management system in place of the verbal contract added in the first experiment. In addition, we postulated that an investigation of methods that could be employed when video modeling is not successful might provide practitioners with possible alternatives to teach compliment giving and other similar and complex social initiations.

EXPERIMENT 2

Method

PARTICIPANTS AND SETTING

Roger and two additional children participated in the second experiment. Schedule conflicts did not permit Erik to participate in the second experiment, although a revised poststudy interview designed for Experiment 2 (see Materials) was delivered just before this experiment. Although the two additional children participated in all phases of the second study, Roger participated only in the added self-management phases. Data were collected approximately 6 months after the completion of Experiment 1. Diagnostic information concerning the new participants was obtained from educational records.

At the onset of Experiment 2, Roger was 5 years 9 months old. Abby, the second participant, was 4 years 1 month old, had been diagnosed with autism, and attended the same extended day program for students with autism as the children in the prior study. She also attended the same preschool classroom that Roger attended. Abby scored in the low-average range on the PPVT-III, with a standard score of 93 and an age equivalent of 3 years 5 months. Parent and teacher questionnaires revealed that Abby spent most of her day among peers and siblings but rarely initiated language in these circumstances. Abby's teacher rated Abby's social skills as a 2, or moderately low, compared to those of her typically developing peers. Abby's responses from her student interview revealed no prior experience with, or acquisition of, compliment-giving behavior.

Alex, the third participant, attended the same school's integrated kindergarten. At 5 years 9 months, Alex, who had been diagnosed with Asperger syndrome, scored in the moderately high range on the PPVT-III, with a standard score of 125 and an age equivalent of 8 years 2 months. Alex received a rating of 4, or just under average, as compared to his peers. Alex's parents and teacher reported that Alex was able to engage in reciprocal conversation with adults and peers, mostly when it involved a topic of high interest to him, particularly science. He most often spoke about items of interest to him, namely, science topics. The student interview revealed that Alex could not explain the meaning of a "compliment" or give any of his own examples of complimentary statements.

Baseline and intervention probes were conducted in the children's integrated preschool and kindergarten classrooms during free-play time. The characteristics of the classroom were similar to those in Experiment 1.

MATERIALS

Prestudy questionnaires, student interviews, video selection, video contents, video preparation, response definitions, and data collection procedures were the same as described in Experiment 1, with the exception of the student poststudy interview. In Experiment 2, children were given 10 statements to determine their ability to identify structurally different statements as compliments. For example, a student would be read the statement, "Good job!" and then asked the question, "Is that a compliment?" The child would be required to respond with "yes" or "no." Six out of the 10 statements were compliments that were structurally different than the structures defined for the study. The remaining sentences were not compliments.

The self-management devices used in this study (Wrist Score Keeper by Falconwood for Alex and Roger, and a checklist for Abby) were selected for the children because prior research reported success with such devices for self-management purposes (Dunlap, Dunlap, Koegel, & Koegel, 1991; Koegel et al., 1992; Koegel, Koegel, & Parks, 1990). The wrist counter required participants to depress a button after each initiated compliment. Alternatively, Abby used a checklist requiring her to check off boxes with a pen, as she was unable to depress the button on the wrist counter independently.

A multiple-baseline-across-participants design was used to replicate the effects of the use of video modeling to teach compliment-giving responses and to assess the effects of self-management training on initiating compliments.

PROCEDURES

Baseline and Video Modeling Phases

Abby and Alex participated in the baseline and video modeling phase conditions on the same schedule (three times per week) and in the same manner described in Experiment 1.

Self-Management Teaching Phase

This phase consisted of two specific steps with which to teach compliment-giving initiations. In Step 1, the participant was escorted to watch the video modeling segment in the same manner as in the video modeling phase. Once the viewing was complete, the adult showed the participant his or her self-management device (i.e., the wrist counter or the checklist) and helped Roger and Alex place the wrist counter on their wrist. Abby was shown a small laminated checklist with two boxes and the word *compliment* at the top. A picture of a piece of bubble gum or another "prize" was attached to the lower half of the checklist as a visual reminder of what she earned once she crossed off her boxes. The teacher then drew attention to the number 2 taped onto the face of the device or checklist. The teacher then said, "When I make two compliments, I get a prize." The teacher proceeded to initiate a compliment, followed by a prompt to the child to monitor his behavior by clicking the counter or, for Abby, to make a check on her checklist. Once the adult made two compliments, she showed the

child that the number 2 on the dial matched the number on the face of the device (or, for Abby, showed her that both boxes were checked) and retrieved a prize from a small paper bag.

A second prize bag with the child's name on it and a prize already inside was brought out. The prizes (e.g., small toy figurines, cars, bubble gum) were selected from the preference assessment completed by the parents in the prestudy questionnaire. Once shown their prizes, participants were told it was their turn to make the compliments. If the child did not make a compliment within 3 s or did not respond correctly, the teacher modeled a compliment for the child to imitate. If the child did not record his or her behavior within 3 s of making the compliment, the teacher physically prompted the child to do so. Once the child reached the criterion (i.e., two compliments), the teacher prompted the child to receive his or her prize if he or she did not do so within 3 s. This sequence was repeated each day for 15 min in the video viewing room until the child was able to complete one practice without any teacher verbal models for compliments.

Step 2 involved moving the procedure into the classroom. The teacher told the child that he or she needed to make two compliments to earn a prize. If the child did not initiate a compliment in the first 2 min, the teacher verbally reminded him or her to do so. If the child did not make a compliment within 10 s thereafter, the teacher modeled an appropriate compliment for the child to imitate. Again, if the child did not make a second compliment after 4 min, the teacher first issued a prompt as before and then a model, if necessary. As in baseline conditions, teachers praised the participants for making compliments (prompted or unprompted). Exit criteria for the teaching phase required two sessions in which models were not given to children to give compliments. Prompts and reminders to self-monitor were still allowed. Once the child made the required number of compliments, he or she was prompted to approach a teacher to receive a prize.

Self-Management Phase

Two prompt levels were identified for this phase before fading all prompts for self-management. At the first "two-prompt" level, any prompts to make compliments, if necessary, were delivered at 2 min. Verbal models were no longer provided if the children did not make compliments within 10 s. Another prompt to make a compliment was provided, if necessary, at 4 min. If participants did not make compliments at this time, no further assistance was provided.

Children were reminded to check their watch or checklist after each observation period (typically coinciding with the termination of free-play time). If the children met the criterion of two compliments, they were prompted, if necessary, to approach the teacher to retrieve a prize. If they did not meet criteria, they were reminded of the reinforcement contingency (e.g., "When you make two compliments, you get your prize") and told they could try again the next day. When children made one compliment, they were praised for their efforts, but they did not receive their prize. If at any time during this prompting level the participants needed one or no prompts during an observation period, they were immediately moved to the "one-prompt" level.

At the one-prompt level, prompts for either the first or second compliment were provided at 2 min. If at any time the children did not need any prompts to make compliments in a session, they would immediately move to the no-prompt level, in which prompts would no longer be provided.

Generalization of Response Compliments Phase

This phase ran concurrently with the self-management phases and was administered to only Abby and Alex. Roger was not available for this phase because of his frequent absences. In this phase, generalization of response compliments was evaluated in settings other than the free-play setting and occurred on the 2 days of the week during which the self-management intervention was not talking place. Initiations compliments were not assessed during this phase because the skill was being assessed through the self-management intervention phases that ran concurrently. Abby's data were collected during outside free time at the extended day program she attended for children with autism. Sessions for Alex were conducted during small-group activities in his kindergarten classroom. As in the video modeling phase conditions, this phase required two scheduled peer approaches and praise by teachers for compliments. However, the participants did not watch the video before data collection.

RELIABILITY

Interobserver Agreement

Interobserver agreement was calculated separately for each participant. The percentage of sessions for which agreements were calculated for Roger, Abby, and Alex were 50%, 50%, and 54%, respectively. Agreements between the primary and secondary observers were assessed in the same manner as in Experiment 1. Interobserver agreement for all children in all phases was 100%.

Procedural Reliability

Because the procedures from phase to phase differed greatly throughout this experiment, procedural reliability was calculated separately for each phase for each participant. The percentage of sessions calculated for procedural reliability for both the video modeling phases and the generalization phases was 50% for Abby and for Alex. Procedural reliability for the video modeling phases was 93% for both children. The generalization phases scored for Abby and Alex were 95% and 100%, respectively. Reliability checks were conducted 100% of the time for self-management phases

across all participants. Procedural reliability was 89% across all participants for the self-management teaching phase and 94% for the self-management phase.

Results

Figure 2 displays the results for Experiment 2. Like the participants in Experiment 1, Abby and Alex showed an increase in compliment-giving responses on exposure to video modeling.

On exposure to the self-management teaching phase for compliment-giving initiations, all three participants met the criteria to engage in classroom practice of the system within the first session. Similarly, all three participants met the requirements to transfer to the self-management phase after 3 days of the self-management teaching phase. For all intervention phases, compliment-giving initiations and responses for the three participants fit within the given sentence structures. On one occasion during the self-management phase, Abby made a statement that did not fit the defined sentence structure (i.e., "Wow!"), but the statement was subsequently confirmed by the raters as a compliment.

Although Roger's scores had the highest degree of variability during the self-management phase, Abby's and Alex's scores were more consistent. Both Abby and Alex re-

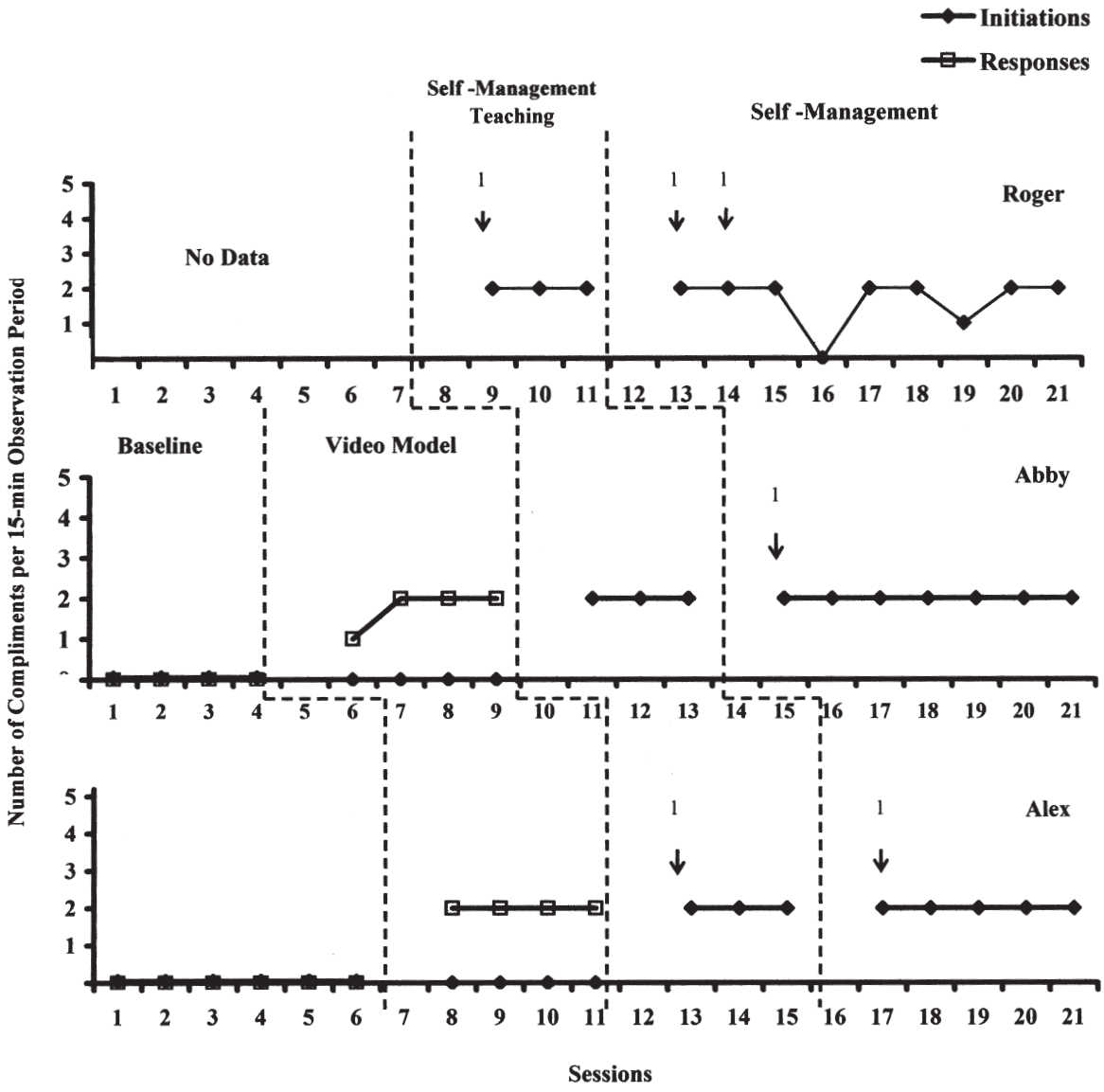

Figure 2. Frequency count of compliment-giving initiations and responses for each participant in each phase for Experiment 2. Arrows on the graphs in the self-management teaching indicate sessions in which models were administered. Arrows in the self-management phase indicate sessions in which prompts were given. The numbers above the arrows indicate the number of models or prompts administered per observation period for the participants.

quired only one prompt in the first session of the phase (see Figure 2), after which no prompts were needed. Roger, in contrast, required one prompt on each of the first two sessions of the self-management phase.

Although responses data were not taken during the observation periods for self-management, teachers reported that the participants consistently responded to natural and teacher-prompted peer approaches throughout the day.

In the generalization phases for response compliments, as shown in Figure 3, Abby and Alex both received four sessions of 15 min, with two opportunities to make response compliments in each session. Alex succeeded in responding to the two scheduled peer approaches during small-group activities in his classroom in three out of the four generalization probe sessions. For the third session, during which Alex engaged in a painting activity with a small group of three peers, Alex responded to peer approaches (in which peers showed Alex their paintings) with verbal comments, such as "Uh-huh" and "Oh." On two occasions, Alex used a sentence structure outside of the study's definitions (e.g., "That picture you made was cool," "That's funny!"), which, again, all raters qualified as a complimentary statement. Abby, who responded to all but one peer approach throughout the four sessions, generally used compliments similar to those modeled in the videos for the first sentence structure type.

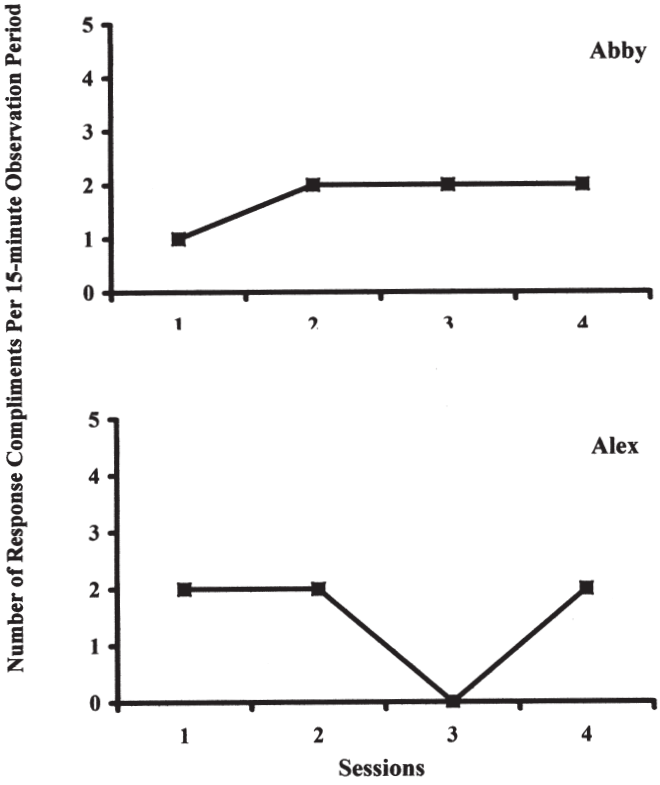

Figure 3. Frequency count of compliment-giving responses across settings for Abby and Alex, the new participants in Experiment 2.

In the poststudy questionnaires, Roger's teachers reported that he talked about his wrist counter and showed the device to others. Teachers also reported that Roger had made some spontaneous compliments outside of observation periods and in the absence of the self-management device. Roger's parents also reported that he referred to the counter as his "compliment-giving watch." Both parents and teachers gave Roger a general social skills rating of 4, or just under average, an increase of 1 point from his score in Experiment 1. Roger's poststudy interview, which involved the administration of only the additional questions designed for Experiment 2, revealed Roger's ability to identify the novel sentence structures with 100% accuracy.

Parents and teachers rated Abby's social skills as a 3, or moderate, a 1-point increase from the prestudy results, and reported an increase in her participation in group activities and in her initiations and commenting to adults and peers. Compliment giving made up a small percentage of the types of initiations observed. Abby's poststudy interview displayed her ability to give examples of compliments consistent with response definitions. Abby received a 100% on identification of novel compliment-giving sentence structures.

Alex's poststudy questionnaires indicated an increase in his compliment giving in nontraining environments. Alex's teachers reported that Alex initiated compliments to others throughout the day. Parents reported that outside school he would respond to naturally occurring peer approaches with an appropriate compliment-giving response. Alex's parents also reported the presence of compliment-giving initiations and responses. Alex received a rating of 4 in social skills, the same score given in the prestudy questionnaire.

In the poststudy interview, Alex's examples of complimentary statements included one response that fit within the trained sentence structures and one generalized response (i.e., "I like to be with you"). Alex was able to accurately identify novel complimentary statement structures with 100% accuracy.

Although he was not involved in Experiment 2, Erik did complete the poststudy interview for this experiment. Results showed that Erik could identify novel compliment-giving structures with 80% accuracy.

Discussion

Alex and Abby's performances in the video modeling phase of Experiment 2 replicated the results found in the original experiment. Abby and Alex, like Roger and Erik, acquired the skill of response compliments through exposure to a video that modeled target behaviors and gave explicit instructions in regard to performing these behaviors. These

results indicated that video modeling with explicit instruction could be used effectively to teach and maintain compliment-giving responses and perhaps other similar social responses that were previously nonexistent in a child's repertoire. In addition, this procedure could help to produce novel responding, as opposed to simple imitation, with such individuals.

Although there is evidence of rapid generalization of compliment-giving responses, as shown by Alex and Abby's performances in generalized settings, it is unclear whether the video modeling was directly responsible. It is possible that the self-management training, which was implemented on alternate days, had an effect on the participants' generalization data. Prior research in video modeling, however, has shown strong evidence that video modeling procedures can produce rapid generalization effects across settings (Charlop-Christy & Daneshvar, 2003; Sherer et al., 2001; Wert & Neisworth, 2003).

Roger, Abby, and Alex each required three sessions of self-management instruction to meet criteria for entrance into the self-management phase involving the fading of teacher prompts and models. This rapid acquisition of the self-management behaviors replicates the success found in previous studies, involving instruction in similar self-management procedures (Koegel & Koegel, 1990; Koegel et al., 1992).

Roger often made his initiations to others while looking at his watch. In addition, the compliments he made often did not correspond with any preferences identified in the prestudy questionnaires. For example, Roger often complimented others on their shirt (e.g., "I like your shirt"), and on one occasion he complimented a child's writing utensil (e.g., "Cool marker"). Similarly, Abby at times complimented on seemingly meaningless items, although on these occasions she would consistently refer to another's appearance or clothing item. This implies that the children learned to make compliments using an appropriate structure, but that variables other than "preference" affected the probability that a compliment would be emitted. Such variables could include the sight of the self-management device, which may have served as a discriminative stimulus to emit a sentence similar to those modeled in the video.

Alex, however, took more time seeking out stimuli to compliment. At one point, Alex said to a teacher, "There's nothing to compliment!" This demonstrates that Alex learned that "preferred" stimuli need to be present to set the occasion for compliment-giving behavior.

Alex's teachers noted that the paintings that peers showed to Alex to evoke a compliment during the generalization observation period during which he did not make compliments were of comparatively low illustrative quality. The teachers, therefore, set up an additional peer approach immediately following this observation period, using a student whose drawing ability was closer to that of Alex. Alex did make a compliment-giving response in this instance. The results for this observation period indicate that Alex may have learned to respond only to items he liked. This study did not attempt to teach the children to respond to others with a compliment to prevent "hurting another's feelings."

Another interesting result not reflected in the data set was the fact that the three participants would, at times, initiate their compliments to adults instead of to their peers. For Roger and Alex, this occurred only two times each for all of the self-management phases. Abby, however, initiated to adults for more than 50% of the total initiations given across all phases. In further studies, it may be necessary to add procedures that specify explicitly that compliments should be made to their peers if that is, in fact, the intent of the intervention.

DISCUSSION

Video modeling has been studied extensively as a tool for social behavior change in children with disabilities (Charlop & Milstein, 1989; Hepting & Goldstein, 1996; Sherer et al., 2001; Taylor et al., 1999; Wells & Haymes, 2000; Wert & Neisworth, 2003). This study replicates the finding that video modeling is an effective tool for teaching social responses and furthers our knowledge by indicating that the addition of explicit rules can potentially replace the need for additional procedures after video viewing and possibly facilitate the acquisition of behaviors previously absent from a child's repertoire. Because a direct comparison between traditional video modeling alone and the embedded rules method was not conducted, one cannot pinpoint with certainty which variable contributed directly to each specific outcome.

Video modeling procedures differed in this study not only in their content but also in the manner in which they were presented. Instead of using one video repetitively (Charlop & Milstein, 1989; Charlop-Christy & Daneshvar, 2003; D'Ateno et al., 2003; Hepting & Goldstein, 1996; Sherer et al., 2001; Taylor et al., 1999), three video segments modeling three separate sentence structures were rotated daily for compliment-giving responses, and one video with six separate examples was seen daily to evoke compliment-giving initiations. D'Ateno et al. (2003) noted that their lack of multiple exemplars might have inhibited the children's generalization of phrases that were not modeled. The student interviews showed that participants involved in both experiments in this study successfully identified and, at times, used novel compliment-giving structures with 100% accuracy. It can be hypothesized that the video modeling procedures as a whole provided sufficient multiple exemplars (Stokes & Baer, 1977) to generate novel sentence structures above and beyond those on which the participants had received instruction. It also should be noted that even though the children were given

equal examples of each compliment-giving type each day (i.e., six examples of initiations and six examples of compliments), more video examples of responses were made and rotated in daily. This was done originally to assess the effect on generalization that different presentations of multiple exemplars would produce for responses versus initiations. The data showed that the different presentations produced similar generalization of compliments, but the differing methods of video presentation produced a potential confound in regard to acquisition of the compliment-giving behaviors.

When one compares the results from Experiment 1 and Experiment 2 specifically with respect to compliment-giving initiations, it is clear the self-management system assisted in the children's ability to make initiations. Final results indicated that the most effective means for teaching compliment-giving initiations was through procedures found in Experiment 2. Whereas Experiment 1 involved the use of a verbal contract that required the constant supervision of an adult, Experiment 2 used self-management to enable the children to be independent in monitoring their initiations.

The investigation into the effects of self-management intervention replicated results from previous studies that demonstrated acquisition and increased independence (Koegel & Koegel, 1990; Koegel et al., 1992; Mancina et al., 2000; Stahmer & Shreibman, 1992). This study advances our knowledge of the process of self-management by precisely outlining teaching procedures and documenting procedural reliability—characteristics that are not found in previous self-management research. It is also apparent that self-management increased the children's ability to make independent initiations of social behaviors that were not previously present in their repertoire. The previous study that documented successful initiation of social behaviors with video modeling as the single independent variable used behaviors that were present in children's repertoire to some degree (Wert & Neisworth, 2003).

Roger, Abby, and Alex's rapid acquisition and subsequent independence in the use of their self-management systems to initiate compliment-giving behaviors indicated that the self-management training procedures employed in this study were effective as well as efficient. The success of this study, as well as other successful experiments on self-management, are important to service providers for children with autism, and specifically to teachers, who are often pressed for time and cannot constantly supervise and monitor each student's behavior. Success in self-management is also important to students, because it provides a method to increase independence and to monitor appropriate versus inappropriate behavior. Self-management has also been referred to as a "pivotal behavior," enabling the person to use self-management techniques to learn, generalize, and monitor a variety of different behaviors (Koegel & Koegel, 1996).

Social validity measures showed some evidence of compliment-giving behavior generalization across settings and in the absence of the self-management devices. Parent and teacher reports revealed that the participants often responded appropriately with compliments when presented with initiations from others outside observation periods. In addition, an increase in compliment-giving initiations was noted for the participants in Experiment 2. The fact that reports indicated that children gave compliments in the absence of self-management devices indicates that fading of those devices would likely be successful.

Teaching ratings on participant social skills before and following the study showed a 1-point increase in general social skills for three out of the four participants. It is unclear to what these reported increases should be attributed, as many variables, including maturation, could have been at play. It also unclear what effect the new behaviors had on the participants' classroom peers, as information was not obtained directly from peers.

Study Limitations

Although video modeling intervention procedures produced immediate changes in behavior, the production of each video took a considerable amount of time. To create presentable and concise videos, extensive editing of raw video footage was required to remove teacher prompts of student responses and irrelevant peer verbal behavior. Although research shows that peers as models can produce successful outcomes for children with autism (Charlop et al., 1983; Egel et al., 1981; Kamps et al., 1992; Sherer et al., 2001; Tryon & Keane, 1986), it may be necessary to investigate the use of adults as models to teach compliment giving so videos can be made in a manner that can be used more efficiently by teachers. When adult models are used, they may be better able to read from or to memorize scripts, which may in turn reduce the use of prompts and possibly eliminate the need for editing processes altogether.

Although video modeling procedures did not produce compliment-giving initiations, the addition of self-management procedures succeeded in producing this behavior. These results add valuable information to the existing literature on both video modeling and self-management, indicating that the addition of self-management to video modeling procedures can produce and maintain social initiations when video modeling alone fails. This knowledge can aid practitioners in identifying further procedures to implement (a) in the event that video modeling does not produce the desired initiations or (b) possibly as an alternative to video modeling. It is important to note that video modeling procedures provide a visual model from which to follow, and it has been postulated that children with autism tend to perform better when provided with visually

cued instruction (Quill, 1997). It is unclear whether the self-management system alone would provide enough visually cued support to acquire compliment-giving behaviors.

Recommendations for Future Studies

To advance our knowledge on teaching social initiations, future studies should investigate the use of self-management to teach similar social behaviors (i.e., in which discriminative stimuli for emitting the behavior are not prominent). Furthermore, as each incidence of successful compliment-giving initiations in both experiments was immediately preceded by the acquisition of response compliments, a reasonable research question would concern a participant's ability to self-manage compliment-giving initiations in the absence of prior acquisition of responses through video modeling procedures.

It is interesting to note the similarity of the behaviors of each of the participants during the classroom implementation of the self-management system. The participants made each of their initiations within the first 2 min of each observation period. It therefore is probable that the exposure to the reinforcement contingency immediately before the observation period (e.g., "When you make two compliments, you get bubble gum") could have served as a discriminative stimulus for initiating compliments. The extent to which the performance of participants would be similar in the absence of this verbalized rule statement can not be known, given the procedures employed. Further studies could investigate the elimination of the verbal contingency from procedures, or at least its fading and eventual removal, to assess the effect on compliment-giving behavior.

Study results also indicated that although the children had learned the skill of compliment giving, it was maintained by the tangible reinforcement contingency for self-managed behavior; control was not transferred to the naturally occurring social contingencies (e.g., social praise, attention) for making compliments during the course of the study.

Although this study did not involve the generalization of the self-management system to other settings or to the fading and removal of the self-management system, other studies have shown success with skill generalization and the ability to fade self-management procedures while retaining acceptable behavioral responses (Harchik et al., 1992; Koegel et al., 1992; Stahmer & Schreibman, 1992). Further investigations could involve an additional self-management fading phase, during which the use of the self-management device would be systematically removed to attempt transfer control to the naturally occurring social-reinforcement contingencies for compliment-giving behavior.

ABOUT THE AUTHORS

Allison Lowy Apple, *PhC, is a special education doctoral student at the University of Washington and supervises the education of young children with autism in the clinic-based program at Northwest Behavioral Associates in Kirkland, WA.* ***Felix Billingsley,*** *PhD, is a professor in, and chair of, the Area of Special Education at the University of Washington. His research interests include instructional methods for students with severe disabilities and effective pratices in inclusive environments.* ***Ilene S. Schwartz,*** *PhD, is a professor of early childhood special education at the University of Washington and the director of the Project DATA, a school-based program for very young children with autism. Address: Allison Lowy Apple, Northwest Behavioral Associates, 12506 128th Lane NE, Kirkland, WA 98034; e-mail: alowy@nba-autism.com*

REFERENCES

Attwood, T. (1998). *Asperger's syndrome: A guide for parents and professionals.* London and Philadelphia: Jessica Kingsley.

Berkell Zagar, D. (1999). *Autism: Identification, education and treatment* (2nd ed.). Hillsdale, NJ: Erlbaum.

Billingsley, F., White, O. R., & Munson, R. (1980). Procedural reliability: A rationale and an example. *Behavioral Assessment, 2,* 229–241.

Brown, G., & Middleton, H. (1998). Use of self-as-a-model to promote generalization and maintenance of the reduction of self-stimulation in a child with mental retardation. *Education and Training in Mental Retardation and Developmental Disabilities, 33,* 76–80.

Calpin, J. P., & Cinciripini, P. M. (1980). A multiple baseline analysis of social skills training in children. *Corrective and Social Psychiatry and Journal of Behavior, Technology, Methods and Therapy, 26,* 172–178.

Charlop, M. H., & Milstein, P. (1989). Teaching autistic children conversational speech using video modeling. *Journal of Applied Behavior Analysis, 22,* 275–285.

Charlop, M. H., Schreibman, L., & Tryon, A. S. (1983). Learning through observation: The effects of peer modeling on acquisition and generalization in autistic children. *Journal of Abnormal Child Psychology, 11,* 355–366.

Charlop-Christy, M. H., & Daneshvar, S. (2003). Using video modeling to teach perspective taking to children with autism. *Journal of Positive Behavior Interventions, 5,* 12–21.

Charlop-Christy, M. H., Le, L., & Freeman, K. A. (2000). A comparison of video modeling and in-vivo modeling for teaching children with autism. *Journal of Autism and Developmental Disorders, 30,* 537–552.

D'Ateno, P., Mangiapanello, K., & Taylor, B. A. (2003). Using video modeling to teach complex play sequences to a preschooler with autism. *Journal of Positive Behavior Interventions, 5,* 5–11.

Dunlap, L. K., Dunlap, G., Koegel, L. K., & Koegel, R. L. (1991). Using self-monitoring to increase independence. *Teaching Exceptional Children, 22,* 17–22.

Dunn, L. M., & Dunn, L. M. (1997). *Peabody picture vocabulary test—Third edition.* Circle Pines, MN: American Guidance Service.

Egel, A. L., Richman, G., & Koegel, E. L. (1981). Normal peer models and autistic children's learning. *Journal of Applied Behavior Analysis, 14,* 3–12.

Gillberg, C., & Ehlers, S. (1998). High-functioning people with autism and Asperger syndrome. In E. Schopler, G. Mesibov, & L. Kunce (Eds.), *Asperger syndrome of high-functioning autism?* (pp. 79–106). New York: Plenum.

Gresham, F., & Elliot, S. (1990). *Social skills rating system manual.* Circle Pines, MN: American Guidance Service.

Harchik, A. E., Sherman, J. A., & Sheldon, J. B. (1992). The use of self-management procedures by people with developmental disabilities: A brief review. *Research in Developmental Disabilities, 13,* 211–227.

Hepting, N. H., & Goldstein, H. (1996). Requesting by preschoolers with developmental disabilities: Video-taped self-modeling and learning of new linguistic structures. *Topics in Early Childhood Special Education, 16,* 407–427.

Kamps, D. M., Leonard, B. R., Vernon, S., Dugan, E. P., Delquadri, J. C., Gershon, B., et al. (1992). Teaching social skills to students with autism to increase peer interactions in an integrated first-grade classroom. *Journal of Applied Behavior Analysis, 25,* 281–288.

Koegel, L. K., Koegel, R. L., Hurley, C., & Frea, W. D. (1992). Improving social skills and disruptive behavior in children with autism through self-management. *Journal of Applied Behavior Analysis, 25,* 341–353.

Koegel, L. K., Koegel, R. L., & Parks, D. R. (1990). *How to teach self-management skills to people with severe disabilities: A training manual.* Unpublished manuscript, University of California, Santa Barbara.

Koegel, R. L., & Koegel, L. K. (1990). Extended reductions in stereotypic behavior of students with autism through a self-management treatment package. *Journal of Applied Behavior Analysis, 24,* 119–127.

Koegel, R. L., & Koegel, L. K. (1996). *Teaching children with autism: Strategies for initiating positive interactions and improving learning opportunities.* Baltimore: Brookes.

Mancina, C., Tankersley, M., Kamps, D., Kravits, T., & Parrett, J. (2000). Brief report: Reduction of inappropriate vocalizations for a child with autism using a self-management treatment program. *Journal of Autism and Developmental Disorders, 20,* 599–606.

Minshew, N., Goldstein, G., Muenz, L., & Payton, J. (1992). Neuropsychological functioning of nonmentally retarded autistic individuals. *Journal of Clinical and Experimental Neuropsychology, 14,* 749–761.

Peterson, L., Homer, A. L., & Wonderlich, S. A. (1982). The integrity of independent variables in behavior analysis. *Journal of Applied Behavior Analysis, 13,* 477–492.

Poche, C. P., Yoder, P. J., & Miltenberger, R. G. (1988). Teaching self-protection to children using television techniques. *Journal of Applied Behavior Analysis, 21,* 253–261.

Quill, K. A. (1997). Instructional considerations for young children with autism: The rationale for visually cued instruction. *Journal of Autism and Developmental Disorders, 27,* 697–714.

Sherer, M., Pierce, K., Paredes, S., Kisacky, K., Ingersoll, B., & Schreibman, L. (2001). Enhancing conversation skills in children with autism via video technology: Which is better, "self" or "other" as model? *Behavior Modification, 22,* 140–158.

Stahmer, A. C., & Schreibman, L. (1992). Teaching children with autism appropriate play in unsupervised environments using a self-management treatment package. *Journal of Applied Behavior Analysis, 25,* 447–459.

Stokes, T. F., & Baer, D. M. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis, 10,* 349–367.

Taylor, B. A., Levin, L., & Jasper, S. (1999). Increasing play-related statements in children with autism toward their siblings: Effects of video modeling. *Journal of Developmental and Physical Disabilities, 11,* 253–264.

Tryon, A. S., & Keane, S. P. (1986). Promoting imitative play through generalized observational learning in autistic like children. *Journal of Abnormal Psychology, 14,* 537–549.

Wells, V. A., & Haymes, L. K. (2000, February). *Use of video modeling to teach appropriate play skills to a child with autism.* Paper presented at the California Association for Behavior Analysis Conference, San Francisco, CA.

Wert, B. Y., & Neisworth, J. T. (2003). Effects of video self-modeling on spontaneous requesting in children with autism. *Journal of Positive Behavior Interventions, 5,* 30–34.

Wildman, B. G., Wildman, H. E., & Kelly, W. (1986). Group conversational skills training and social validation with mentally retarded adults. *Applied Research in Mental Retardation, 7,* 443–458.

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