The Effects of Modeling upon the Verbal Elaboration of a Language Disordered Child's Pretend Play

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Abstract

This study investigated the effect of a modeling procedure upon a language disordered child's verbal elaboration of common event scripts as revealed in pretend play. A multiple baseline design was employed to examine the effect of modeling on two different types of language used during pretend play, verbal invention and active other directed. These types of language serve to elaborate pretend play by defining roles for the participants and by creating props, action, and actors. Results revealed that the modeling procedure employed was effective in increasing the target behaviors. Findings are discussed in relation to the subject's event representation abilities, as well as their implications for clinical practice.

Contemporary treatment approaches used with language disordered children target not only syntactic and lexical forms as goals, but also the use of those forms in appropriate communicative contexts. In fact, awareness of contextual factors in conversation has become a major concern in planning remediation programs (Constable, 1983). Play often has been prescribed as a context for intervention with young language disordered children (Westby, 1980; McCune-Nicolich & Carroll, 1981). The most frequently cited rationale is that it is an activity that young children engage in regularly. Additionally, based upon the traditional view that symbolic play and language are related domains of symbolic functioning (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979; Nicolich, 1977; Piaget, 1962), it has been suggested that symbolic play is an area of nonverbal cognition which may also be delayed in these children (Lombardino, Stein, Kricos, & Wolf, 1986; Roth & Clark, 1986; Terrell, Schwartz, Prelock, & Messick, 1984; Skarakis, 1982).

Recent research by Bretherton (1984) and Nelson (1981) has modified the traditional position. They suggest that young children's symbolic play also can be viewed as a means through which a child represents knowledge of common social routines, routines which contribute to communicative competence (Nelson & Gruendel, 1981; Sachs, 1984). These investigators maintain that during symbolic or pretend play, children organize their representations of social roles, actions and objects via "scripts," a notion borrowed from work in artificial intelligence (Shanks & Abelson, 1977). A script is the mental representation of the sequence of actions called for in a familiar situation. More simply stated, it is a description of the common knowledge we all have about familiar events. Language enters into the child's event representation as a means of defining the event, and thus, of enhancing the representation (Slackman, Hudson, & Fivush, 1986.) Specifically it defines roles for participants in the play activity, and creates imaginary props, actions, and actors. Language used in this way distances the play from the concrete "here and now." That is, it becomes decontextualized. Thus, a child's representation or script of a common event is enhanced via language.

The language disordered child's limited linguistic repertoire may serve to restrict the amount of elaboration and possibly the manner in which the child is able to elaborate play. Hence, the child's representation of the common event would be affected. By targeting for remediation the language used during pretend play, we not only facilitate language acquisition in the language disordered child, but possibly facilitate development of the child's mental representation of common events. Various techniques may be employed to achieve these goals.

Research has shown modeling to be an effective technique for increasing the quality and quantity of pretend play in normal children (Bretherton, O'Connell, Shore, & Bates, 1984; Corrigan, 1982; Fenson, 1984; Fenson & Ramsay, 1981) and holds promise for use with language disordered children. In these studies, young normal children elaborated their pretend play both with direct imitation of and with frequent generalization beyond the modeled behaviors (i.e., variations of the modeled behaviors and novel behaviors).

Fenson (1984) investigated the development of action-based and linguistically based pretend play in normal children 20, 26, and 31 months of age, using a modeling procedure. Scripts of three everyday activities (making breakfast, bathing a doll, visiting the doctor) designed to represent several aspects of pretend play were used as models for the children. Fenson's results indicated that a modeling procedure significantly increases the frequency of occurrence of language which elaborated pretend play in children 26 and 31 months of age.

Modeling procedures based upon social learning theory (Bandura, 1977) also have been used to expand the linguistic repertoires of language disordered children (Leonard, 1975; Courtright & Courtright, 1979; and Prelock & Panagos, 1980). Fey (1986) has suggested that modeling procedures have a great deal of potential for increasing children's use of already existing linguistic forms. Modeling procedures not only demonstrate the content and form of utterances, but also the appropriate contextual conditions for their use.

The literature reviewed above suggests that modeling may be a viable procedure for expanding the language disordered child's ability to verbally elaborate representations of common events via pretend play. Thus, it was the purpose of this study to determine the efficacy of using a modeling procedure to increase verbal elaboration in a language disordered child's pretend play. Specifically, the following question was posed: Can a modeling procedure increase the frequency of language used to elaborate pretend play?

Method

Given the heterogeneity of the preschool language disordered population and the resulting difficulty in adequately matching subjects, a single-subject experimental design was employed to address this question (McReynold & Thompson, 1986). A multiple-baseline procedure was used such that the efficacy of the treatment procedure would be demonstrated by replicating any effect over two independent behaviors.

Subject

One male, language disordered preschool child, age 44 months served as the subject. He lived in a small community outside of Halifax, Nova Scotia. He was the youngest of two children from a middle class home. Both parents worked, the mother part-time. English was the only language spoken in the home.

At three years three months of age, the subject was identified by a certified speech-language pathologist as presenting with normally developing language comprehension skills, but severely delayed speech and language production abilities. His language production repertoire consisted of single words, jargon, and babbling. He was enrolled in a three month program of language stimulation based therapy. The experimental treatment program of this study was instituted following a two month hiatus from therapy. The behaviors targeted for treatment in the present study had never been treated previously.

At the time of this study, the subject presented with a limited language production repertoire for a child 44 months of age. His MLU was 2.83 morphemes, as measured by a spontaneous language sample, analyzed on the *Systematic Analysis of Language Transcripts* (SALT) program (Miller & Chapman, 1983). Predicted average age for this MLU level is 33.2 months, with a range of 26.3 - 40.1 months. His performance on the *Test for Auditory Comprehension of Language - Revised* (TACL-R), (Carrow-Woolfolk, 1985), was within normal limits (80th percentile for his C.A.). He demonstrated normal non-verbal intellectual functioning as measured by the *Leiter International Performance Scale* (Arthur, 1952), M.A. = 5 years, 9 months. Peripheral hearing was within normal limits at the time of the study as determined by a recent pure-tone audiological screening. Evaluation of his nonverbal script knowledge (Lake, 1987, derived from Hudson & Nelson, 1984) revealed that this child demonstrated a similar number of propositions or ideas in a script as children of the same cognitive level, though his organization of these ideas was comparable to children of his language level.

Procedures

Treatment Goals and Design

As stated previously, a multiple baseline design across behaviors was employed (McReynolds & Kearns, 1983). Approximately equal number of sessions were conducted in each phase of the experiment. All sessions were videotape recorded with a Video camera (Sony Betamovie BMC 550). The videotapes were played back on a video cassette player (Sony SL-30). The tapes were then orthographically transcribed, and the transcripts analyzed for the type of language used during the subject's play. The taxonomy employed in the analysis was based primarily upon the work of Fenson (1984) and Wanska, Bedrosian, and Pohlman (1986). A complete list of definitions can be found in Appendix A.

Baseline

The baseline condition was conducted over four, 45 minute sessions.Three sets of toys were used to represent three potential scripts of bath-time, breakfast-time, and a visit to the doctor (Fenson, 1984). A complete list of toys and props can be found in Appendix B. The toy sets were presented to the subject in random order with an open ended question, "What could you play with these toys?" This prompted the subject to begin playing. The subject played independently for up to ten minutes with each toy set, or until he indicated that he was finished. Prior to removing the toys, the subject was asked, "Are you finished?" This entire procedure was repeated for all three sets of toys. The experimenter's role was one of a passive observer, and she interacted only if a direct request to participate was made by the subject. The experimenter did not initiate or embellish any part of the play script during this phase.

During the first session the target behaviors were determined. The choice of target behaviors was made based upon several criteria: (1) that the potential target behavior actually occur in the play repertoires of normal three year old children (Lake, 1987); (2) the impact of modeling upon the behavior in normal children's repertoires (Fenson, 1984); and (3) low frequency of occurrence in the subject's repertoire. Given these criteria, "verbal invention" or the verbal creation of a pretend object or person in the absence of any physical support (e.g., "it's milk" while pouring imaginary liquid from a toy pitcher) was chosen as the first target behavior. "Active other directed" or the attribution of action potential, needs, wants, or feelings to animate or lifelike objects other than self (e.g., "Baby's crying") was chosen as the second behavior for treatment. In order to establish the stability of the target behavior prior to beginning treatment, the frequency of occurrence was measured over three more sessions. These sessions were conducted following the same procedure as described previously.

Treatment

Upon completion of four baseline sessions, two treatment phases utilizing a modeling procedure designed to increase the language used for elaborating scripts were initiated. The first treatment phase was conducted for five sessions. During this

phase, Behavior A, "verbal invention," was modeled according to the procedure described below, while Behavior B, "active other directed," was measured, but not treated. The second phase, in which Behavior B was treated and Behavior A was simply measured, lasted for four sessions. Sessions occurred three times per week over a three week period.

The modeling procedure involved the preparation of two verbally elaborated scripts for each of the three sets of toys. One script focussed upon Behavior A, "verbal invention," and the other focussed upon Behavior B, "active other directed," as a means for elaboration. The scripts were sufficiently flexible to allow for variety and novelty of subtopics, yet controlled for the targeted behaviors. However, on some occasions, examples of Behavior A were present in the scripts designed for modeling Behavior B. This was necessary for several reasons. First, in order to maintain control over the number and type of props (i.e., realistic vs. abstract) for any one toy set across the two scripts, verbal invention was necessary. Second, the theme of several scripts (e.g., breakfast) obligated the creation of objects and actions in order for the event to be modeled in a natural way (i.e., food items had to be created in order that a "common event" had indeed been modeled.) When examples of Behavior A were present in "Behavior B scripts" it is important to note that they were secondary to the target behavior. This was accomplished in several ways. First and most important, the "verbal invention" was embedded in the primary behavior "active other directed." Thus, it was through the experimenter's animation of a toy (i.e., making Mickey Mouse talk) that the verbal invention was created. Consequently, the frequency of occurrence of verbal invention was greatly reduced compared to that of the target behavior, "active other directed," in those scripts. An example of a treatment script can be found in Appendix C. The presentation order of the three scripts was randomized, and only two scripts were modeled per session.

Modeling of the target behaviors was conducted by one of the experimenters playing out two, five minute scripts, while the subject sat and observed. On occasion, the subject wanted to become involved in play during the modeling procedure. During those times, a reminder was given that his turn to play would be next. Immediately following each model, the child played with the toys for approximately eight minutes. The experimenter became involved in the child's play script only if directly invited. Again, she played a passive role, simply following the child's directions.

During the second phase of treatment, previously prepared scripts were varied to reflect the new target behavior, "active other directed," and were modeled utilizing the same procedure as described previously. Again Behavior A continued to be measured, although it was not directly treated.

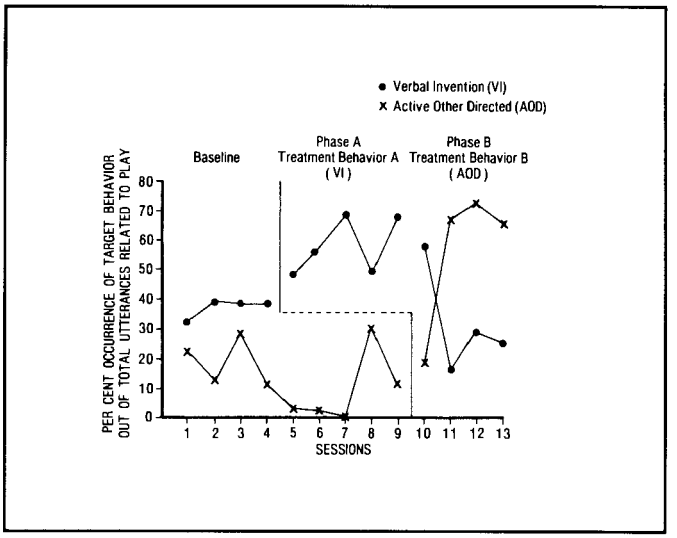
Reliability

Reliability of coding the language used in the play scripts was determined by having an independent judge, a certified speech-language pathologist, recode ten percent of all the sequences transcribed. Reliability for coding target behaviors was 76% for "verbal invention" and 88% for "active other directed."

Results

The results of treatment upon the two targeted behaviors are presented in Figure 1. For each session, the frequency of occurrence (in percent) of the target behavior out of the total number of utterances related to play was plotted. Stability of Behavior A was demonstrated during the four baseline sessions (32%, 39%, 38%, 38%), with Behavior B showing some variability (22%, 12%, 28%, 11%). When treatment was initiated for Behavior A, a steady increase in the frequency of occurrence of this target behavior occurred across sessions with the exception of Session 8. The frequency of occurrence of nontreated Behavior B stabilized during this extended baseline period (Sessions 5 - 9) with the exception of Session 8. The variability in Session 8 can be accounted for by an error in the prepared scripts for that session. "Active other directed" behaviors had been emphasized in the modeling procedure instead of "verbal invention." This resulted in a decrease in "verbal invention" (to 50%) and an increase in "active other directed" behaviors (to 30%). An additional session was added to this phase such that these scripts were revised to once again emphasize "verbal invention" behaviors only. This resulted in "verbal invention" returning to a level comparable with Session 7 (67%) and "active other directed" returning to a baseline level (11%). Consequently, an inadvertent single session reversal with reinstatement of the treatment effect resulted.

Figure 1. Frequency of occurrence in percent of verbal invention and active other directed behaviors across program phases for the subject.



Once both behaviors resumed levels established prior to Session 8, the second treatment phase was initiated. Again, the modeled behavior in this phase, "active other directed," in-

creased in its frequency of occurrence (18%, 67%, 72%, 65%). Simultaneously, the nontreated behavior, "verbal invention," markedly decreased in its frequency of occurrence (58%, 16%, 29%, 25%). Thus, it has been demonstrated that a modeling procedure could increase the frequency of occurrence of language used to embellish pretend play in a language disordered child's repertoire.

Discussion

The purpose of this study was to investigate whether a modeling procedure would be effective in increasing a language disordered child's use of play elaborating language and, as such, embellish his representation for several common daily events. Through the use of multiple baseline design it was demonstrated that two independent play elaborating verbal behaviors, "verbal inventions" and "active other directed," were positively affected by the modeling procedure used in this study. The effectiveness of this modeling procedure is consistent with the results obtained by Fenson (1984) with younger normal children. Additionally, the robustness of the demonstrated effect was substantiated by the reversal which occurred in Session 8. In this session, treatment for Behavior A was inadvertently withdrawn resulting in an immediate decline in its frequency. When treatment was reinstated in the following session, a return to prior levels of frequency was achieved. Simultaneously, Behavior B, which inadvertently became the treated behavior in Session 8, increased during that session, and decreased when treatment was withdrawn in the subsequent session. Thus, the effect of the independent variable, the modeling procedure, upon the play elaborating verbal behaviors has been demonstrated repeatedly and in different ways.

While the trends in the data were clear, some variability in the occurrence of both of the target behaviors existed across the sessions. This variability in performance was reflected in an overall decrease in the subject's total language production for these sessions and, consequently, in a slight decrease in the target behaviors. Several factors may have contributed to this variability including the scheduling of the treatment sessions, and the subjects' long term interest in the toys. Late afternoon sessions were scheduled one time per week. During these sessions the subject frequently appeared tired and lethargic, or was highly distractible. The subject's inconsistent interest in the toys also may have contributed to the variability. Attention and motivation are two of the processes which Bandura (1977) cited as important components of successful incidental learning. When either waned in this subject, his performance became more variable.

Clinical Implications

Several important clinical issues arise from this study. The first pertains to the maintenance of the treatment effect. Given that Behavior A decreased as soon as it was no longer treated, were treatment efforts essentially wasted? To some degree the decrease in Behavior A once Behavior B was treated was an artifact of the treatment design. We chose to use an equal phase design (i.e., the same number of sessions in each phase) rather than set a criterion for changing phases. The effect of this choice was that Behavior A was not treated to a level that clinically we would consider mastery. Thus, within our study, the behaviors were not yet firmly established in the child's repertoire. Certainly in the clinical application of this modeling procedure, criterion for attaining target behaviors such as we employed should be set, thus ensuring the maintenance of the treatment effect over time.

A second related issue is the generalizability of the treatment effect to "scripts" other than those specifically trained in the therapy sessions. Although we did not include a "probe script" in our study, such a procedure could easily be accomplished in a clinical setting. A set of prop toys depicting yet another daily routine (e.g., grocery shopping) could be assembled for the sole purpose of assessing generalization. This set could be presented to a client at various randomly chosen treatment sessions to probe her use of the target behavior in a new script.

The quality of our subject's performance is also of clinical interest. Should we expect rote imitations solely or are creative expansions of the model possible? Anecdotal observations of the subject in our study suggest the latter. Our subject's imitations of the experimenter's modeled behaviors were not solely rote imitations. Rather, novel inventions or variations on the experimenter's model also were observed (e.g., made a milk shake instead of orange juice). Generalization across sessions also was demonstrated when modeled acts of previous sessions were incorporated into the subject's script for that day. Further, the subject benefited from observing the nonverbal behaviors that were modeled since they also were incorporated into his play script. Mental representations cannot be viewed directly, but only secondarily through a child's overt play behaviors. Therefore, our subject's spontaneous generalization across sessions, and his creations and variations on the models presented serve as evidence that his scripts for the events modeled in this study were indeed elaborated following exposure to our modeling procedure.

The present procedure was effective with the child in this study. It is possible that the child's profile of intact comprehension and nonverbal repertoire of script elements (i.e., propositions) made him a good candidate for this procedure. Additional research in which the linguistic profile of subjects was varied could address the issue of applicability of the procedures to other types of language disordered children. Certainly, research in which this effect was replicated across several more language disordered children with a similar profile to our subject, would enhance the generalizability of our findings.

This study demonstrated that a modeling procedure could be effective in increasing a language disordered child's use of language which elaborates pretend play scripts. Contemporary theory and research offer a rationale for targeting language use goals such as ours in a treatment program. We may include

goals which target the use of language to elaborate common event scripts in our treatment programs on the grounds that overall communicative competence is enhanced. Katherine Nelson and her colleagues (Nelson & Gruendel, 1979, 1981; Nelson & Seidman, 1984) have shown that a child's scripts for common events provide the shared knowledge base necessary for cooperative communication with peers and adults. A shared script provides a structure within which a coherent activity and talk sequence can proceed for the child. Nelson has found that dialogue is more likely to occur when it is grounded in shared script knowledge. Nelson and Seidman (1984) have demonstrated that dialogue between children is expanded and maintained across more turns when those children are involved in scripted play.

Children are more competent as communicators when a shared script forms the basis for their dialogues. By developing the preschool language disordered child's use of language to elaborate common event scripts, we may be enriching their shared knowledge base in preparation for successful peer communication. Thus, both communicative competence and the development of social relationships are served by such goals. If we believe, as does Prutting (1982) that the the function of language is to initiate, maintain, and terminate interpersonal relationships, then our young clients would be well served by attention given to language which elaborates pretend play, and thus may develop event representation, a fundamental basis for communicative competence.

Acknowledgment

The authors wish to express their appreciation to the subject of this study and his family for their cooperation in participating in the treatment program. The authors also wish to express their gratitude to Ms. Norma Wood and Ms. Elizabeth Shaw, speech-language pathologists at the Nova Scotia Hearing and Speech Clinic, Halifax, Nova Scotia, as well as to our colleague Jann Lake.

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Appendix A
Taxonomy For Categorizing Language Used in Pretend Play

LANGUAGE THAT ELABORATES PLAY

Verbal invention: References to pretend substances or objects in the absence of physical support for the created element (e.g., "that's juice").

Active other directed: An utterance which attributed action potential, needs, wants, or feelings to animate or lifelike objects other than self (e.g., "baby's crying").

Self directed: Description of actual or hypothetical play acts directed toward the self (e.g., "I wash my face").

Passive other directed: Description of an act applied to an animate or lifelike object other than self (e.g., "Baby's clean now").

Object directed: Descriptions of inanimate objects or actions applied to them (e.g., "Roll this", "that's cold").

Substitution: Verbal transformation of an object into something else (e.g., child dubs a block "soap").

Regulatory: Language used to command or to direct another. (e.g., "sit there").

Conventional sounds: Child produces noises or sounds (e.g., "vroom" for car, "quish" during pouring).

LANGUAGE THAT DOES NOT ELABORATE PLAY

Nonelaborated or redundant to play: Language which described ongoing activity without pretend reference or was not related to the play (e.g., "I have a Heman"; "That's like daddy's").

Unintelligible: utterances that could not be understood.

Appendix B
Toys and Props

Bath-time Script
bathtub
doll/Mickey Mouse
sponge
shampoo bottle
paper towel
brush
block
toy boat
sleepers

Doctor Script
doctor bag
doll/Mickey Mouse
white shirt
telephone
stethoscope
cotton swab
syringe
tongue depressor
plastic bottle
box

Breakfast Script
stove
doll/Mickey Mouse
toaster
frying pan
bowl
plate
cup
pitcher
spoon
2 wooden blocks
box wooden stick

Appendix C
Prepared Scripts for Target Behaviors

Breakfast Script - Verbal Invention

I'm hungry! What can I have to eat? I know, I can make eggs and toast. Let's see. I need two eggs. There they are. (pick up 2 blocks and crack in bowl). Oh, there's the garbage can. (lift pretend lid) The egg shells go in the garbage. Now, where's the milk? Here is the fridge. (open pretend door) I found the milk. (take out imaginary carton) Nice cold milk. Ooops the eggs need more milk. (pour again) Time to stir the eggs. (stirring action). The eggs are all ready. (put pan on stove, and turn it on) Here's some butter for the pan. (place dab in pan) (pour eggs in pan and begin to stir) Oh the eggs smell so good. Maybe I'll add some cheese. Cheese will make my eggs taste good. (pick up imaginary cheese and sprinkle) Look at all the cheese. Salt, I need some salt. Oh here's the salt (pick up block and sprinkle). Oh maybe just a little pepper (pick up block and sprinkle) That's enough. The eggs will be ready soon. My toast, I almost forgot. Here's my bread. (pick up imaginary piece and put in toaster). Oh good the eggs are ready. (pour onto plate) The toast is ready. (pick up toast) Ouch the toast is hot. (Begin to eat) I'm thirsty now. The orange juice is in the fridge. (open door and take our green pitcher) (look in pitcher). That's enough juice. (pour into cup) Ooops I spilled some juice. What a big mess! Here's my cloth (pick up imaginary towel) I'll clean up the juice. There, all clean now. I can finish my eggs and toast. Oh they are so good. Yummy. I forgot I wanted orange juice. (look in pitcher) Good, there is some left. (pour into cup) (take drink). MMM, good juice. (eat more food, and drink). I'm all done. What a good breakfast.

Doctor Script - Active other directed

(talking for Mickey Mouse) Oh, I feel so sick. (cough cough) I'm hot, oh my head is hot. My mouth is sore. Oh, oh. I don't feel very good. Oh my ears hurt too. I want to go to bed. Maybe I will feel better if I go to bed. Yes, I'll go to bed. (lay down) Oh I still feel sick. (cough cough) I'm sick. I better call Doctor Marjorie. It's Mickey Mouse, I'm sick. I need to come in and see you. O.K. I'll be right over. (walking action to doctor) Oh good, I'm here. Hello, Doctor Marjorie. Hello Mickey. (put on white shirt). Let me see. What is wrong Mickey. Oh doctor, I have a headache, my ears hurt, and I have a fever. O.K. Mickey. Open your mouth. That's good. Oh yes you are sick Mickey. (listen to heart) MMM, heart sound good. Now, your ears. Yes, Mickey you are sick. Oh and you are very hot. I'll get some medicine for you. (pour out medicine and give to Mickey.) Oh, yuck, that tastes bad Dr. Marjorie. Now you will need a needle. There in your arm. Did it hurt? No Dr. Marjorie. I am very brave. O.K. Mickey you go home and go to bed. Come and see Dr. Isaac tomorrow. O.K. bye. Bye Dr. Marjorie, and thank you.