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The Effect of Modification of Hyperactive-Aggressive Behavior on Oral Expressive Language Behavior

Betty Susan Dowdell
Central Washington University

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THE EFFECT OF MODIFICATION
OF HYPERACTIVE-AGGRESSIVE BEHAVIOR
ON ORAL EXPRESSIVE LANGUAGE BEHAVIOR

A Thesis
Presented to
the Graduate Faculty
Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Speech Pathology

by
Betty Susan Dowdell
June, 1968

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APPROVED FOR THE GRADUATE FACULTY

Walter L. LaDue, COMMITTEE CHAIRMAN

Durward A. Porter

N. Howell

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CHAPTER I

INTRODUCTION

New evidence supporting behavioral modification techniques with children is being reported almost daily. The application of operant conditioning principles to children categorized as hyperactive-aggressive may effect a modification of this behavior and change oral expressive language behavior.

I. The Problem

Statement of the problem. It was the purpose of this study (1) to compare the amount of hyperactive-aggressive behavior displayed by the children before the experiment with the amount of hyperactive-aggressive behavior after the application of operant conditioning techniques and (2) to compare the amount of oral expressive language behavior displayed by the children before the experiment with the amount of oral expressive language behavior displayed after the application of operant conditioning techniques. The question the study sought to answer was: Will the affect of modification of hyperactive-aggressive behavior effect a change in the oral expressive language behavior of the children?

Importance of the study. Behavior is the activity of an organism as a whole, and a function of heredity, maturation, environment, and learning adapted to cultural and sub-cul-

tural forces. Man's behavior is unique in that he has set himself apart from other organisms on the phylogenetic scale by adding a symbolic system to his behavioral milieu. Language, an organized system of linguistic symbols (words) has allowed him to communicate his thoughts and ideas on an abstract level and has given him great flexibility in environmental and behavioral control. Since man's language behavior and personal adjustment are closely allied and interacting, his reaction to his environment may stand in the way of easy communication with others. His own hyperactive-aggressive behavior may affect his oral expressive language behavior. Many authorities have stated that a relationship exists between behavior and the type and quality of oral expressive language (Van Riper, 1963; Moses, 1954; Eisenson, 1963). In the study an attempt was made to effect modification of hyperactive-aggressive behavior by operant conditioning techniques and determine if that change would affect the oral expressive language behavior.

II. DEFINITION OF TERMS

Hyperactive-aggressive behavior. For the purpose of the study, hyperactive-aggressive behavior was considered, engaging in activities inappropriate to developmental level and age, and using these activities to satisfy needs in ways that are socially unacceptable to the community. The hyperactive-aggressive child engages in these activities at

a higher rate of speed than other children in the same environmental circumstances.

Oral expressive language behavior. Language may be viewed as a learned behavior and dependent upon many factors. The oral expressive language behavior referred to in the study was the verbalized language that a child used to make himself understood by others. (Myklebust, 1954).

Modification of behavior. Any change in the hyperactive-aggressive behavior denotes a modification of that behavior.

Task-oriented behavior. During the course of the experiment, any attending behavior exhibited by the subject to an assigned task or group of tasks was termed task-oriented behavior.

CHAPTER II

REVIEW OF THE LITERATURE

Throughout recorded history, many differing views have been expressed about the nature of man. Christian doctrine has interpreted the nature of man as being bad. Brubacher (1951, p.489) stated that:

Forced by the irrefutable logic of their system, men have held that the babe that lies in its mother's arms has a nature utterly corrupt. There is in it no possibility of good; all its tendencies are toward evil. It is alien from God and under his eternal wrath. Its spiritual father is the devil, and its fitting destiny is an unending hell. Of course, this fearful doctrine was only the foundation of the glorious doctrine of salvation. God was graciously ready to change this depraved nature and to give the child his own divine qualities. When the child does wrong, we see the outcropping of the old nature; when he is good, we behold the victory of the grace of God. Parents and teachers are encouraged to help the development of the better nature.

Man has been viewed by some as being "good." Rousseau's doctrine of essential nature of goodness was used to formulate an educational theory based upon the goodness of the natural impulses of man (Durant, 1927). The nature of man was also viewed as having potentials.

As Aristotle, the fulfiller of the Platonic System, showed, the idea toward which the organism grows is already in the organism itself potentially. Education can neither create nor endow; it can only develop.... (Brubacher, 1951, p.58).

This philosophy of the nature of man's behavior has given him flexibility. Man can achieve his potentials if he sees

them clearly and manipulates behavioral factors to reach his goals.

Behavior can be viewed as a function of heredity, maturation, environment, and learning. The above aspects will be considered individually. Heredity has been viewed as the transmission of characteristics from parents to offspring, biologically through the genes. At conception, the new individual has a chromosomal make-up of 46; 23 chromosomes from the mother and 23 from the father. "The generally accepted hypothesis is that the chromosomes carry the hereditary factors, or genes!...(Snyder, 1946, p.79). Because he is genetically a new combination, his visible traits or structure and behavior may differ greatly from those of either parent. Thus, the heredity of an individual is his own unique constitution.

The second factor associated with behavior is environment. Heredity and environment work together in every manifestation of life. At the time of conception, two separate and distinct environments are present; the first is the intracellular environment, where the process of life has begun to develop. In this environment many developmental changes occur, including such possible biochemical factors as gene mutation which can seriously effect behavioral patterns of an individual. The second environment present at conception is the intra-uterine environments where the new individual is

to develop. This immediate environment provides such essentials as food and warmth, necessary for development. From the very beginning, development depends as truly on environment as on heredity. Individual differences might be attributed to heredity alone, or environment alone, or both factors together. "A wide range of human variability is, of course, inevitable. Either heredity or environment alone is capable of producing vast differences. Together their influence is that much greater" (Lehner and Kube, 1960, p.390).

The third factor associated with behavior is maturation. It is the physiological development of bones, muscles, glands, and nervous systems which occur, independent of learning (Sturges, 1964). An organ must develop to a certain point before it is capable of functional activity.

Even after birth, mechanisms which started earlier continue to develop. The intracellular and intercellular conditions, as well as the genes, are still operative. Thus, maturation occurs after birth as well as before. The chief influence of the postnatal environment on maturation is to accelerate it (as sexual maturation is accelerated in some climates) or retard it (as sometimes happens when nutrition is inadequate for normal development)" (Munn, 1946, p.79).

In the process of maturation, the external environment plays an essential part by supplying food and oxygen, warmth and other general conditions of life. Maturation depends on stimulation from the external environment. Either directly or specifically it depends on the interaction of parts within the young organism, one part stimulating another to de-

velop. Because of the response to such stimulation, functional activity occurs. In this way, maturation prepares the way for activity and learning.

The fourth factor associated with behavior is learning. Because learning plays such a tremendous role in our behavior and total adjustment, it is approached as a separate category.

"Learning is the phenomenon upon which rests the entire superstructure of our complex mental activity and behavior... Our total culture and civilization are the products of expressions of human learning" (Lehner and Kube, 1960, p.391). Learning can be defined as any change in behavior that is a result of past experience (Sturges, 1964). Let us now look at the relationship of experience to learning. The meaning of an object, event, or situation is in most all instances dependent upon how it has stimulated us in the past, the cues that have become associated with it, and our response to the stimulus. We can say that learning consists not simply in responding to new situations adequately or appropriately, but in responding to new situations with a specific response which has in the past been associated with some feature of the new situation. "Learning by experience depends on a past response. As a result of that past response the organism may now respond to cues or signals which attend that response. If we were confronted with a new situation that included not familiar features, nothing resembling learning

could be in evidence" (Guthrie, 1938, pp.14 and 15). Because each individual has different reactions to different experiences, the adaptive behavior of individuals may differ in learning situations. The early experiences in the home environment have a great deal to do with future learning. If a wide variety of experiences are not provided, learning may be slower and more deficient. "It is safe to assume that past experience is utilized in a general way even when something quite new and original is imagined. Without any background in past experience one would be helpless..." (Woodworth, 1940, p.527). Because of our endless and varied environments and social interactions, each of us is provided with a back-log of experiences that will aid in the learning process. The ability of the individual to adapt and to modify his behavior is essential to his continued existence. In this way, past experiences help bridge the gap between our behavior patterns and our environmental requirements.

The hyperactive-aggressive child has been a source of concern to all who deal with him. From a behaviorial frame of reference, we must determine what the child is doing. Adler (1964, p.54) has stated that hyperactivity may be characterized by random, purposeless movement. The description of this behavior is further elaborated upon by Solomons who states that the hyperactive child carries out his activities at a higher rate of speed and motion than the average

child (Solomons, 1965, p.464).

Webster's dictionary states: "Aggressive implies the disposition to dominate something, by indifference to other's rights, but now, more often, by determined forceful prosecution of one's ends."

Because of components within his behavior, the hyperactive-aggressive child has not been able to attend to learning tasks. The child never remains in one position or place for any appreciable length of time. Teachers in average classroom situations have not had time to give their individual attention to these children, and as a result, special education classes have been arranged in many districts to handle the educational needs of the hyperactive-aggressive child.

A variety of techniques have been utilized in an attempt to modify behavior since the major aspects of behavior modification are focused upon the overt behavior. The most important aspects of changing the overt responses of a person are found in behavior modification techniques. Two basic approaches or schools of thought have developed: one school emphasizes Pavlovian conditioning techniques, and the other school utilizes operant conditioning techniques. Pavlov demonstrated that, through experimental manipulation, regular predictable relationships could be established between changes in behavior of living organisms and the en-

vironment to which they were exposed (Rush, 1963, pp.73-75). Operant conditioning, on the other hand, states that behavior is emitted. Rush (1963, p.76) states:

It appears to occur spontaneously, rather than being initiated by some identifiable external stimulus. Such behavior also can be a product of conditioning, but here psychologists speak of instrumental conditioning, since the organism's response is 'instrumental' in obtaining a change in its relation to the environment. The emitted food-seeking behavior of the hungry organism, for example, is instrumental in obtaining food. Instrumental conditioning is usually classified as operant conditioning, avoidance, or escape.

Initially promulgated by B.F. Skinner, the method of operant conditioning provides a continuous and precise way of obtaining data about the behavior of the organism which are readily amenable to quantification and analysis. The method can be easily adapted to the needs of a particular subject and closely approximated to the adjustive behavior of the individual's habit patterns. The operant conditioning technique has a remarkable range of use in the study of behavior modification. The use of Skinner's box is a standard in the study of this technique with animals. English and English (1959, p.505) describe it as:

...an enclosure provided with one or more devices whose correct operation brings the animal either escape from the enclosure or some other reward. The escape mechanism may be a bar to be depressed, a key or button to be pecked, a loop to be pulled, or a panel to be pushed, depending on the anatomic conformation and the habits of the animal to be tested.

Many experimenters have applied the technique for use

with human subjects. The experimental investigations include operant conditioning of enuretics, multiple tics, hysterical blindness, and conditioning of the vegetative human organism.

Describing a study for the "Management of Nocturnal Enuresis by Conditioned Response," Geppert (1964) felt that the use of conditioning techniques were more rapid, simple, and complete in most instances. He set out to teach the enuretic patient to wake-up in response to bladder tension. The response was conditioned by the use of an electric alarm device that was attached to a sensitive bed pad on which the patient slept. If micturition began, the sensitive pad would trip the electric alarm that was near the patient's head. Upon awakening to the bell, the patient turned off the alarm by means of a switch, voided in the proper manner, and upon returning to bed the alarm was conditioned for reuse by replacing the wet pad with a dry one. Extinction of the enuretic response was achieved in thirty-eight of forty-two patients over an average four and one-half week period. Four patients were re-conditioned in the same manner and success was achieved.

The use of this method in cases of possible psychiatric origin has been questioned on the ground that it is symptomatic treatment....we feel that in a good many cases personality difficulties are the effect rather than the causes of enuresis...(Davidson & Douglass, 1950, pp.1345-1347).

Barrett used free operant conditioning methods to achieve a reduction in the rate of multiple tics in a thirty-eight year old patient. The patient had undergone drug therapy, and psychotherapy over a period of fourteen years with no relief or reduction in the neuromuscular tics; however, through the use of the conditioning methods more dynamic, rapid, and reliable results were obtained (Barrett, 1965, pp.255-263).

Brady and Lind (1965, pp.170-179) showed how it was possible to analyze hysterical blindness experimentally by operant techniques. The patient had been blind for a two year period, and upon completion of the operant study, regained his sight. The results were interpreted as follows:

In the present study, it might be argued that the whole testing procedure constituted 'psychotherapy' in the broad sense of the term, and that the specific conditioning procedures were incidental. This argument would be more persuasive, however, had the patient not proved so refractory to the many, but more usual, psychotherapeutic measures that were taken over a long period...the evolution of behavior clearly under the control of environmental cues support the authors' contention that return of visual function was specifically related to the events programmed in the testing procedure (Brady & Lind, 1965, pp. 170-179).

Until recently, few studies have attempted to modify the behavior of the vegetative human organism by means of operant techniques. Fuller (1965) described the use of an operant technique with an eighteen year old inmate in an institution for the feeble-minded. The experiment proved

that a new behavioral response could be conditioned in the patient, who had been categorized as a "vegetative idiot", and unable to learn. He stated:

Those who participated in or observed the experiment are of the opinion that if time permitted, other responses could be conditioned and discriminations learned. (Fuller, 1965, pp.337-339).

Man developed a language, an organized system of linguistic symbols (words) so that he could communicate on an abstract level. Language gave man great flexibility; allowed him to communicate with others; enlarge his symbol system; think and organize new ideas. Both the reception and oral expression of linguistic symbols can be modified by the complex functioning of man. Since his perception, motivation, and intelligence increases the complexity of the language process, he must learn to integrate his symbols into his total behavior. Man's memory, recall, cognition, association and imagery impinge upon the totality of both behavioral and linguistic function. Wendell Johnson stated:

...language is to be viewed as a form of behavior and that, like other behavior, it is to be evaluated as technique.... A technique is a way of doing something, and language may be viewed and evaluated as a technique for accomplishing personality adjustment. (Johnson, 1946, p.268).

Many people have displayed a phobic reaction with regard to speaking to a group. Grossberg (1965) reinstated voiced social speech in a forty-one year old professional woman by applying behavior therapy techniques. The desensi-

tization process required the presentation of stimuli that evoked the phobic reaction of "stage fright" at a low intensity, and systematically increased the stimuli's intensity until it no longer evoked the response.

Manaster (1966) studied the effects of visual perception in brain damaged hemiplegic patients. He noted that the patients displayed an inability to organize perceptions or coordinate visual motor actions and attempted to reinstate more adequate behavior in the patients through the use of controlled lighting. The technique of controlled illumination lowered and directed the overall amount of stimulation for the patients, and created a marked positive change in their behavior, in that their attention and retention spans were increased and the level of verbalizations were increased. Stevenson (1959, p.197) has aptly stated: "We now notice not only what the patient says but his manner of saying it as well, for this may show what his words conceal."

The above point can be seen very clearly in the language behavior of patients suffering from mental illnesses. The processes of abstract language behavior are disjointed, and lack an effective relationship between the verbal and non-verbal levels of their total behavioral milieu.

Richard, Dignam, and Horner (1965) used an operant technique to investigate "Verbal Manipulation in a Psychotherapeutic Relationship". The patient was a sixty year old male

who was verbose, expressing delusions of grandeur and persecution. In a follow-up study on the same patient two years later, the authors stated:

Contrary to the popular prediction that behavior resulting from direct conditioning procedures would quickly extinguish and/or lead to adoption of compensatory symptoms, S continues to respond with predominately non-delusional speech to E and is reported emitting much less delusional speech in other hospital situations (Richard, Dinoff, 1965, p.115).

Isaacs, Thomas, and Goldiamond (1966) applied operant conditioning techniques in an attempt to reinstate oral expressive language behavior in two psychotic patients. Their findings indicated that the conditioning techniques used were effective and verbal behavior was forthcoming from both formerly mute psychotics.

Many studies have dealt with the behavioral and language deficits of the autistic child. Ferster (1964) remarked that the verbal behavior of the child is particularly dependent upon reinforcement by an audience, usually a parent, for its development and maintenance. He emphasizes that the child's behavior can be nearly extinguished if it is not systematically and periodically reinforced. Goldforb (1965) has suggested that the response of others to the speech defects of schizophrenic children may actually reinforce such defects.

Jensen and Womack (1967) used operant conditioning successfully to reinstate oral expressive language and improve peer interaction in an autistic child. The study included

the child's mother in the behavioral therapy program which proved fruitful in the overall treatment in that the adaptive behavior was transferred to other environmental situations.

Hewett (1965) conditioned a four and one-half year old, non-verbal autistic boy in an effort to achieve a basic speaking vocabulary. The conditioned speech later began to acquire the characteristics of meaningful language.

Cooperative behavior and verbal responses were shaped in two pairs of schizophrenic children (Hingtgen and Trost, 1966, pp.110-113), and vocal responses were similarly shaped in a mute child (Kerr, Meyerson, and Michael, 1965, p.366).

Children's values and motives are to a great extent a product of conditioning experiences in the home. The deficits created by poor and inadequate environments are multiple. They may include physiological impairments, language disorders, pathological effects on personality, and a host of other crippling conditions. These children may generally be hostile, and aggressive, and suspicious of the outside world. Many times, experiences with parents and other adults have conditioned the child to expect personal rejection. We often find that the language patterns, values, and learning processes of these children are geared to action rather than conceptualization. The emphasis is on an overly simplified vocabulary, and negative feelings may be attached

to the careful oral expressive language behavior of others (Linton, 1966). The restless, uncontrolled hyperactive and aggressive behavior displayed by the child may distort his perceptual field. He is distractible and usually unable to maintain his attention on stimuli which are immediately significant to his adjustment. "The child tries to react to everything at once..." (Stogdill, 1965, p.8).

Attention is regarded as stimulus-controlled behavior and is amenable to modification and training (Mecham, Berko, Berko, and Palmer, 1966). The advocates of stimulus theories (Strauss and Lehtinen, 1947; Cruickshank, Bontzen, Ratzbury, and Tannhauser, 1961) have suggested a variety of stimuli present in the learning environment that may add to the child's inattention to a task and perpetuate his hyperactive-aggressive behavior. They have suggested that the teacher's almost continuous movement and verbal communication provide a readily available stimuli which is often more novel and interesting to the child than the task of attending. If the teacher reacted to the child's hyperactive-aggressive response by a negative oral expressive statement, she may, in fact, be reinforcing its occurrences (Kerr, Meyerson, Michael, 1965; Isaac, Thomas, Goldiamond, 1966). How then do we cope with the child's hyperactive, aggressive behavior and his oral expressive language?

One of the current practices used in dealing with the

hyperactive-aggressive child is expressed by Mecham, Berko, Berko, and Palmer (1966). They proposed that control of the child's behavior and attention to a task may be achieved in the following manner: (1) limiting the distracting influences; (2) controlling the amount of space to be explored; (3) direct physical restraint; (4) making sure that the child has been taught to attend to a task.

Hay and Cohen (1967, p.577) stated: "The classroom is a way of communicating with children." They emphasized that the space allowances within the classroom should be adequate for the gross movement activities of the children, and that space can also be used to control social distances among those children who aggravate one another either by accidental contact, or as a direct result of intentional aggressiveness that leads to conflicts.

Cruickshank, Botzen, Ratzenbury and Tannhauser (1961) conducted a study of forty hyperactive-aggressive children. Classes for the two experimental and two control groups instituted environmental changes to reduce extraneous stimuli and a highly structured program that utilized auditory, kinesthetic, and tactile senses in learning. In the first retest of the experimental groups, gains were noted in the children's ability to withstand distractions, in their visual-perceptual performance, and their emotional maturity; however, there were no changes in the other variables.

Strauss and Lehtinen (1947) have generated general principles in the education of brain-injured children, including teaching arithmetic, reading, and writing. They suggested modification of classroom procedures to reduce hyperactivity. Haring and Whelan (1965) exercised a reinforcement program in a structured, well organized classroom of emotionally disturbed children. Their findings indicated that the performance of the children in the classroom improved after the shaping procedures took place, and an increase in oral expressive language appeared evident. The studies by Schlanger and Gottsleben (1957), Nelson (1961), and Strauss and Kephart (1940) indicated the need for effective programs with children classified as hyperactive and aggressive.

Patterson (1965) used operant conditioning techniques to control the hyperactive behavior of a nine-year-old boy. The child's peer group was used as a social reinforcer, and candy and money were used as tangible reinforcers. The author concluded that it was difficult to identify which variable produced the modified behavioral effect, or if the change in the child's behavioral pattern would generalize outside of the conditioning session.

If behavior modification procedures are consequently ill-chosen, the desired changes in the client's speech will not be obtained, and if extension of stimulus control is ignored or inadequately conducted, the client will not carry over speech im-

provement from the clinic to his daily environment
(Brookshire, 1967, p.219).

CHAPTER III

METHOD

Subjects

The study utilized three children described as hyperactive-aggressive according to the criteria stated previously in the text. The subjects were males: Subject A, 5 years 2 months; Subject B, 5 years 4 months; and Subject C, 5 years 3 months. The children were enrolled in the Head Start program in Ellensburg, Washington.

Procedures

Baselines of hyperactive-aggressive behavior and oral expressive language behavior were determined by observing each child. A pretraining baseline was obtained by averaging five, thirty-minute observation periods, taken on five consecutive days before conditioning. The experimenter and two experimenter aides collected baseline data on a weekly basis during the remainder of the four week experimental study. The two experimenter aides were trained by the experimenter. (See Appendix A.)

Hand tally counters were used to tabulate hyperactive-aggressive behavioral responses according to their occurrence. The responses were noted by the experimenter and Aides 1 and 2 in five minute segments during the thirty-minute observation periods. At the conclusion of each five-

minute period the stop watch was reset by the experimenter for the next segment of timed observation. This procedure was used throughout all timed observation periods during the study.

A baseline of oral expressive language behavior was obtained by tallying each word uttered by the child in accordance with the criteria stated previously in the text. The two baselines were obtained concurrently and in the same manner. Each child acted as his own control and charts of his initial and final behavior were used to compare the data.

The conditioning sessions were conducted on an individual basis outside the classroom situation. During the first week training period, each child was confronted with specific learning tasks designated by the teacher. (See Appendix B). For each task-oriented behavior, the experimenter deposited one M&M candy into a can as a positive reinforcement. As reported by Patterson (1965), M&M candies have been found to be positive reinforcements for children. The experimenter utilized this reinforcement procedure throughout the study. The conditioning sessions were carried out in twenty to thirty-minute periods covering a time interval from nine o'clock to eleven o'clock each morning.

The second week of conditioning was conducted on an individual basis outside the classroom situation. For each one minute of task oriented behavior, the child was reinforced

with an M&M.

The third week of conditioning was conducted within the main classroom situation with the three children working in a group. They were again reinforced, on an individual basis, for task-oriented behavior for the same one-minute period.

The fourth week of conditioning was conducted within the main classroom situation with the three children working in a group. M&M reinforcement was given only after the child had demonstrated task-oriented behavior for a five-minute period. During the second and third days of this week, reinforcement for task oriented behavior was withdrawn. On days four and five, M&M reinforcement was given for every five minutes of task-oriented behavior.

The experimenter told each child that he had been chosen to learn to work. The teacher-designed-tasks were explained at the beginning of each session. (See Appendix B.) The M&M reinforcement was explained as a reward for the work accomplished during the sessions.

Tabulations of the hyperactive-aggressive behavior and oral expressive language behavior for the fourth week of conditioning were obtained one week after conditioning had terminated. Brookshire (1967, pp.215-227) has used the above method to measure the amount of carry-over obtained by the individual, and to insure that learned behaviors will not disappear when periods of nonreinforcement are encountered.

CHAPTER IV

RESULTS

The purpose of the study was to effect modification of hyperactive-aggressive behavior by operant conditioning techniques and determine if that change would affect the child's oral expressive language behavior. The study utilized three children described as hyperactive-aggressive according to the criteria stated in the text. The conditioning sessions were four weeks in duration.

An eight day school break occurred between the third and the fourth week of conditioning. The fourth week of conditioning was conducted as planned.

The review of the literature gave evidence supporting the application of operant conditioning techniques to achieve behavior modification. The use of operant techniques had a remarkable range of use in behavior modification, and provided a continuous and precise way of obtaining data about the behavior of the organism which were readily amenable to quantification and analysis.

Baselines of hyperactive-aggressive behavior and oral expressive language behavior were determined for each child by the observations of the experimenter and the two experimenter aides both before, during, and after conditioning. Each child acted as his own control and charts of his initial

and final behavior were used to compare data. Figure 1 shows the results of the baselines of hyperactive-aggressive behavior and oral expressive language behavior for Subject A; Figure 2 indicates the results obtained for Subject B; and Figure 3 indicates the results obtained for Subject C.

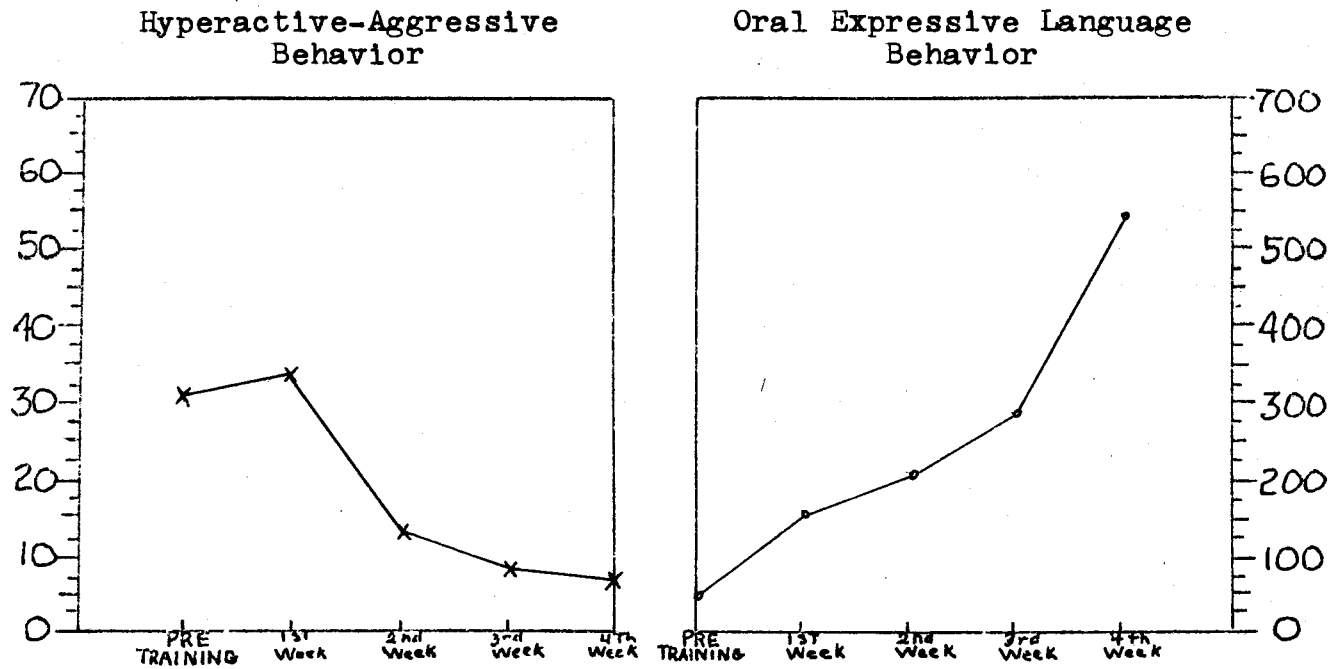


Figure 1. A Summary of the responses of Subject A for the four week training period, including the initial pretraining tabulations.

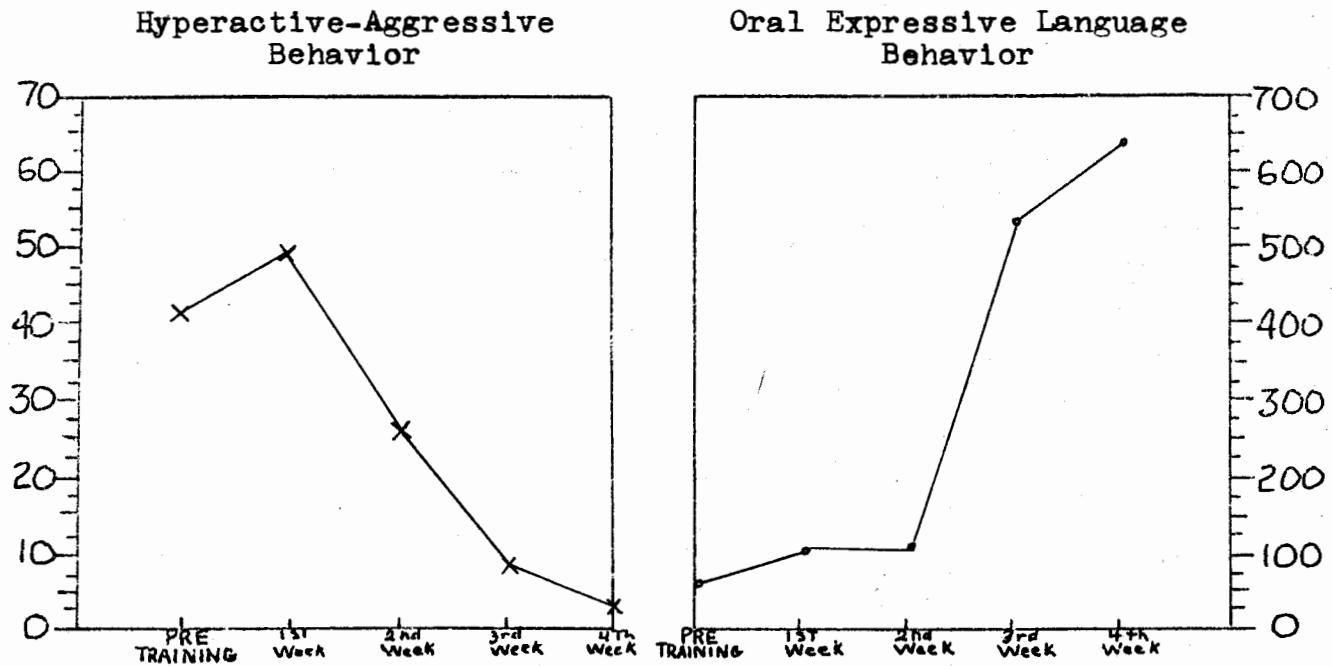


Figure 2. A Summary of the responses of Subject B for the four week training period, including the initial pretraining tabulations.

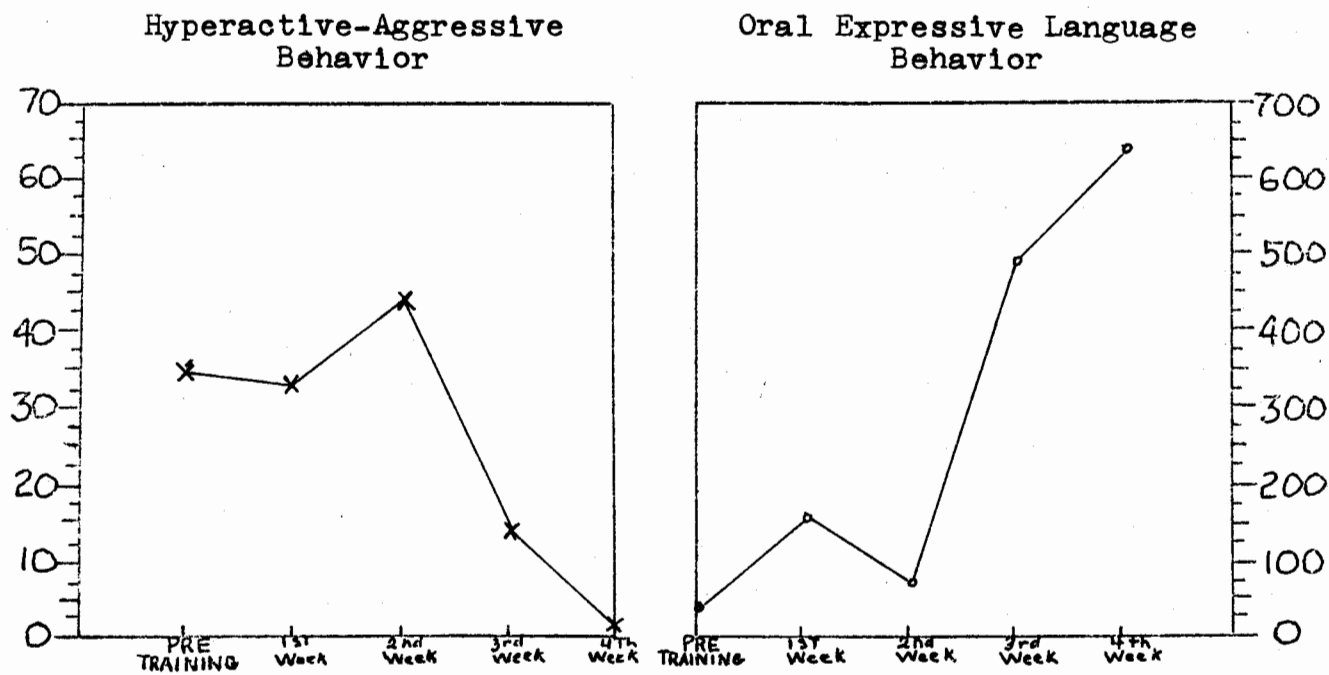


Figure 3. A Summary of the responses of Subject C for the four week training period, including the initial pretraining tabulations.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

It was the purpose of the study (1) to compare the amount of hyperactive-aggressive behavior displayed by the children before the experiment with the amount of hyperactive-aggressive behavior after the application of operant conditioning techniques and (2) to compare the amount of oral expressive language behavior displayed by the children before the experiment with the amount of oral expressive language behavior displayed after the application of operant conditioning techniques. The question the study sought to answer was: Will the affect of modification of hyperactive-aggressive behavior effect a change in the oral expressive language behavior of the children?

Baselines of hyperactive-aggressive behavior and oral expressive language behavior were obtained by the experimenter and two experimenter aides both before, during, and after conditioning.

Conclusions

There were marked differences demonstrated by each child when the pretraining baselines of hyperactive-aggressive behavior were compared with the baselines obtained after conditioning.

There were marked differences demonstrated by each child when the pretraining baselines of oral expressive language behavior were compared with the baselines obtained after conditioning.

In order to determine the effect of modification of hyperactive-aggressive behavior of each child, the pretraining baselines were compared to the baselines obtained after the completion of the study. Tables I and II present the numerical tabulations obtained for each child during the study; and Figures 1, 2, and 3 present charts of each child's initial and final behaviors. It appeared that the effect of modification of hyperactive-aggressive behavior did affect the oral expressive language behavior of each child in a positive direction.

TABLE I

A TABULATION OF HYPERACTIVE-AGGRESSIVE
BEHAVIORS FOR SUBJECTS A, B, AND C

Subject	Pre Training	1st Week	2nd Week	3rd Week	4th Week
A	31*	34	13	9	8
Subject B	41*	49	26	9	3
Subject C	34*	33	44	14	1

* Represents an average of five (5), thirty-minute periods of observation.

TABLE II

A TABULATION OF ORAL EXPRESSIVE LANGUAGE
BEHAVIORS FOR SUBJECTS A, B, AND C

Subject	Pre Training	1st Week	2nd Week	3rd Week	4th Week
A	41*	153	206	277	544
Subject B	70*	104	104	539	636
Subject C	32*	156	74	481	634

* Represents an average of five (5), thirty-minute periods of observation.

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APPENDIX A

Aides

Two experimenter aides were utilized during the entire study. Experimenter Aide 1 was a senior student in Speech Pathology; and Experimenter Aide 2 was a graduate student in Speech Pathology.

Training

The two experimenter aides were trained by the experimenter. The training consisted of the following:

1. A thorough understanding of the operational definition hyperactive-aggressive behavior and the emitted responses classified as such (hitting, pushing, pinching, shoving, kicking, squirming, and biting) was required by each aide.
2. A thorough understanding of the operational definition of oral expressive language behavior was required by each aide.

The experimenter utilized hand tally counters to tabulate the subjects' responses. A stop watch was used to time the five minute segments during the thirty-minute observation periods. The experimenter gave the aides instructions in the use of the above mentioned instruments.

Non-test subjects were used to coordinate the skills

of the experimenter and the two aides. Each aide was instructed to tally the number of hyperactive-aggressive behaviors displayed by the ten non-test subjects in 5, 10, 15, 20, 25, and 30 minute periods. The training period was two weeks in length. The results of the tally by Aide 1 correlated within three responses of the results obtained by the experimenter in the testing conducted through all time segments. The results of the tally by Aide 2 correlated within two responses of the results obtained by the experimenter in the testing conducted through all time segments. The possibility of tabulation error was minimized by using the technique presented by Ayllon and Michael (1965) and Patterson (1965). The tally figures used in the study were the averages obtained from the experimenter and the two experimenter aides in each five minute segment during the thirty minute observation periods.

The experimenter utilized the same procedure to train the aides in obtaining data on oral expressive language behavior. The results of the tally by Aide 1 correlated within three responses of the results obtained by the experimenter in the testing through all time segments. The results of the tally by Aide 2 correlated within one response of the results obtained by the experimenter in the testing through all time segments. The possibility of tabulation error was minimized by using the technique stated above.

APPENDIX B

The Head Start program attempts to bring the child into contact with many first hand experiences in arts and crafts, drama, stories, music, and personal interactions with peers and adults. In this way an attempt is made to enrich the child's environment and aid in his readiness for school. The tasks designated by the teacher for use in the study were randomly selected from the materials used in the Head Start program. The tasks utilized visual-motor, and tactile skill appropriate for the developmental level of this particular age group.

The following is a summary of the teacher designated tasks used for the subject's conditioning during the four week study.

First Week

colored snap-together blocks

Sifo puzzles

Second Week

drawing paper and crayons

construction paper, scissors, and paste to make kites

Sifo puzzles

Third Week

colored snap-together blocks

construction paper, scissors, and paste to make Indian hats

Sifo puzzles

Fourth Week

painting at the easel

Sifo puzzles

A form board with squares, circles, and triangles of red, orange, yellow, green, blue, and purple plastic pieces.