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AN EXPERIMENTAL ANALYSIS OF THE EFFECTS OF VERBAL PRAISE UPON PUPILS CLASSIFIED AS "MALADJUSTED"

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A THESIS

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CHAPTER I

INTRODUCTION

The teacher who understands the motives of children may exploit those motives as central factors of learning. But because motives are devious and obscure and their expression varied, the task of the teacher is a difficult one. In order to understand motives, observation and interpretation of the child's activities as he relates to his environment must be made. To make use of motives for purposes of learning requires not only that motives serve the purposes of learning, but that they be molded and guided in desirable directions. We must attempt to cultivate and direct these interests into desirable channels. It is with this general theme that this study is concerned.

There are a number of different approaches to the problem of handling children in the classroom situation. Specifically one approach would deal with the effect of reward and punishment upon academic endeavor. Another deals

with the effect of reward and punishment on the aspects of personality. Other approaches capitalizing on various methods of motivation, introduce additional variables in attempts to utilize incentives as reinforcements to learning and personality adjustment. These various approaches to working with children in the classroom have introduced certain potentials which appear in the following review of the literature.

Review of Related Research

One of the earliest attempts to understand the role of praise and reproof on performance was made by Hurlock in 1925 (20). She attempted to evaluate the effect of praise and reproof used continuously over a period of time on performance in arithmetic. One hundred and six fourth, fifth and sixth grade children were divided into groups designated as Control, Praise, Reproof and Ignored. Each group was given thirty arithmetic problems of six three-place numbers to add in fifteen minutes. The Control group was isolated and the Ignored group heard praise and reproof administered to the other two groups.

The results of these treatments revealed that (1) the greatest average improvement was shown by the Praised group. Less improvement was found in the Reproved group, still less in the Ignored group and none at all on the Control group. (2) Greatest improvement followed praise in the case of girls and reproof in the case of boys. In both cases, how-

ever, praise was decidedly more effective than reproof. (3) Grade comparisons showed that younger and older children were about equal in responsiveness to incentives of praise and reproof. (4) Praise proved to be decidedly the most effective incentive to use in the case of all children. Within the groups, the "inferior" were most responsive to praise, and the "superior" to reproof. Praise without some other form of incentive showed the "superior" children to do, on the average, worse work at the end of the series and the "inferior" children to do about one-third better. The average child did exactly the same as before. (5) Increased accuracy was found only in the work of the children who had been praised or blamed. (6) The results as a whole, showed conclusively that regardless of the factors of age, sex, initial ability or accuracy, praise was decidedly the most effective of the three incentives investigated. Reproof, when first used, seemed to be about equal in value to praise, but with continued use its effectiveness showed a decided decline. To ignore children in a group where the other members are receiving some incentive, seems to be psychologically unsound.

Thompson and Hunnicutt (40) also attempted to evaluate the effect of repeated praise and blame on the work achievement of introverts and extroverts. Fifth grade pupils, scoring above the median on the introversion-extroversion

section of the Pintner, et.al. Personality Test, were designated as "extroverts"; those falling below the median were designated "introverts". The task was a cancellation test in which the teacher graded the work as "good" or "poor". It was found that on repeated trials, praise significantly increased work output of introverts over work output of introverts who were blamed and extroverts who were praised, while blame increased output of extroverts more than did praise with extroverts or blame with introverts.

DeGroat and Thompson (8) attempted to determine the relationship between teacher approval-disapproval and the pupil's adjustment, as measured by achievement and personality tests. Results disclosed that the pupils in the high teacher-approval group showed significantly higher "adjustment" scores than the pupils in the high teacher-disapproval group. Another finding was that pupils experiencing a high degree of teacher approval were, as a group, the more intelligent pupils as well as the most productive in achievement. A further conclusion of the author was: "The child's evaluation of his own adjustment may be influenced by his level of achievement and/or the teachers' approval-disapproval attitudes toward him."

Laird (25) had high school students report in detail how they responded to various incentives used by their teachers in an effort to motivate them to do their best

classwork. Responses to a wide variety of incentives were secured. These incentives included reprimands, sarcasm, ridicule, low grades, teacher conferences with parents, teacher-pupil conferences, commendation of pupil, etc. The author concluded: (p. 365)

> Reprimands, ridicule, sarcasm, low grades, and additional assignments reduce the seriousness of the student's work, rather than increasing it. All other incentives reported on, as a rule, tend to result in an increased fervor of work.

Briggs (5), attempting to evaluate the relative efficiency of praise and censure as incentives, had a large number of graduate students report as to whether they had worked better, the same, or less effectively, in high school under twenty-one motivating situations. The results of this study were in high agreement with those reported by Laird. Briggs states: "Even the worst incentives have produced good results with certain students."

Gilchrist (18), using fifty members of a class in educational psychology, investigated the extent to which praise and reproof may affect a pupil's work. An English test was given to the entire class and the class was then divided into two groups without regard to the grades made on the test. The groups were isolated and given the same test again. Prior to the administration of the second test, Group A was reproved by being told that they "did not do as well on the test as the average twelve year old child

would do." Group B was praised prior to the second testing by being told, "members of this group did exceptionally well." The results of the second test revealed that the Group B improved seventy-five per cent as a group, while Group A's score was lower than that of the first test. In Group A, those who had done well on the first test, did not do as well on the second, whereas in Group B, those who did well on the first test, improved their scores on the second test. The percentage of loss and gain demonstrates, presumably, the effect of the expressions of praise and reproof.

Ryans (33), in a review of studies of motivation in learning, states that: (p. 289)

> It appears that motivation has (1) a directing effect and (2) a reinforcing effect on learning. When we say that motives direct learning, we are referring to the problem of preparatory set. The individual's organic needs, his attitudes, his interests all attribute to his readiness to particular sets of behavior and help to select and determine the choice of activity. Other things being equal, that activity which is compatible with a need, attitude, interest, or purpose will be engaged in and related activity will be facilitated. But the direction of the behavior is only half the picture. The attainment of an incentive and its quiesent effect upon drive, serve to reinforce the activity that was engaged in, so that the liklihood of the recurrence of that activity is increased. Motives then, set the stage for learning by facilitating certain activities, and on the other hand, activities which lead to satisfaction of motives tend to occur.

In his discussion of individual incentives, Ryans observed that reward and praise may act as effective incentives for some susceptible students in learning situations, but

that undeserved praise which is too frequently given may not have the desired effects.

One study was directly concerned with the problem investigated in the present study. Flory, Alden and Simmons (13) attempted to determine whether the classroom teacher could bring about improvement in the personal adjustment of her pupils when diagnosis was made by a standardized personality test. Twenty-six pupils, selected by the California Test of Personality, as low in total adjustment were turned over to their respective teachers who used their own devices to attempt to improve adjustment scores. The study lasted two years and the students were retested at the end of each year. The twenty-three pupils retained over the two year period improved twenty percentile points the first year and about ten points the second year. Thus, significant improvement in personality adjustment was produced through the efforts of the classroom teachers. Only five of the twenty-three pupils regressed or failed to gain. These results could have had significant implications for classroom teachers but for the fact that the teachers concerned in the experiement kept no records of how these changes were effected.

Warden and Cohen (44) investigated the effectiveness of certain incentives when applied by the classroom teacher under normal classroom conditions. Eighteen boys and twenty girls from a fourth grade class were drilled in addition,

using Thorndike's Addition sheets. The drill lasted for five minutes and was included as a part of the regular classroom procedure. No incentive was given the first week, in order that individual norms might be established for future comparison. In the ensuing eight weeks the following incentives were offered on certain days and at irregular intervals, stories on three occasions; game on three; play on seven occasions; and each of the following was used on one occasion; party, praise and reproof. The author found that the incentives were not especially effective insofar as speed was concerned but that they appeared to be effective in improving accuracy. Praise and reproof were most effective for improving accuracy, the implication being that there was little difference between the two.

Anderson (1) gave children two to eight years of age, three tests of strength at one week intervals to investigate the relative effectiveness of a number of external incentives of different types. He found that success-praise is a significantly greater incentive than failure-reproof and, that either success-praise or failure-reproof is a greater incentive than control motivation.

The foregoing studies, dealing with reward and punishment as incentives to learning and personality adjustment, have reported findings favorable to the thesis that such incentives produce differential results in a positive direc-

tion. Unfortunately, other studies do not report such favorable results.

Forlando and Axelrod (14) conducted a study which later served as a point of departure for the Thompson and Hunnicutt (40) investigation of the effect of repeated praise and blame upon the performance of introverts and extroverts. Using fifth grade pupils as subjects, "introverts" and "extroverts" were identified by a standardized personality test. These subjects were then given two cancellation tests with praise or blame being administered before the second test was given. The authors found (1) that blame was more effective than praise generally and that introverts were more responsive to blame than extroverts, (2) praise did not generally exercise any differentiating effect, (3) mere repetition of cancellation test under experimental conditions produces a marked improvement on second and third trials, and (4) trials were too few to test the full effects of the incentives. A caution was mentioned against too wide a generalization from these results since the number of trials or applications of praise were limited in number. These findings are at variance with the subsequent findings of Thompson and Hunnicutt (40).

Gates and Rissland (16) attempted to verify the findings of Gilchrist (18) using three groups of college students. The first group was encouraged on their performance on the

first of two trials of the Motor Coordination (three hole) Test and on the first of two performances of the Color Naming Test. The second group was discouraged between performances on the same tests and the third group received no comment on their performances between the tests. A comparison of performances on the alternate forms of the two tests, indicated that a "very slight difference in average improvement, or even in percentage of individuals who improve existed in the three groups. Such differences as appeared seem to be in favor of encouragement or discouragement, rather than in mere repetition." (p. 26)

In an experiment involving the effect of certain external incentives upon the performance of a task, Chase (7) selected seven external incentives, success, repetition, failure, praise, reproof, reward and punishment to determine their effect in combination upon performance. Four experimental groups consisting of two-hundred thirteen boys and girls, two to eight years of age were used as subjects. The groups were subjected to two tasks each week for three weeks. The first task involved a test of strength with the experimental groups receiving the incentives in a prescribed order between each of the seven trials. The second test was a perforation test, also one of motor ability, consisting of punching out the imprint of broken circles in paper with a blunt orange wood stick. Three trials were given on the

second task and the total holes punched were recorded. Each subject reversed the order in which the two tasks were undertaken each week. At the completion of both tasks, each subject was asked which of the two tasks he enjoyed the most. The conclusions were based on the replies of the subjects and from the recorded number of successful attempts with the orange stick. They are: (1) Some motivation is more effective than control motivation; (2) Some motivation in addition to success-repetition is more effective than success-repetition; (3) Success-reward tends to produce better performance than success-praise; and, (4) It seems probably that failure-repetition, failure-reproof and failure-punishment are more effective for performance than success-repetition, success-praise and success-reward.

Anderson and Smith (2) repeated Chase's (7) study three years later, using one hundred two of the same subjects who participated in Chase's original study. They followed the same procedure and used the same apparatus. Results revealed that a comparison of the childrens performances in similar motivational situations showed that some motivation is more effective than control motivation; (2) that some motivation in addition to success tends to be more effective than success-repetition; (3) that some motivation in addition to failure tends to be more effective than telling a child to repeat a performance in which he has just failed. They

also reported that success-reward tends to be more effective than success-praise and, failure-repetition and failure-punishment continue to be about equal in effectiveness. Failure-repetition, which on the original tests was significantly more effective than success-repetition, approaches a significant difference on the retest and the performance of the subject's was significantly higher when they were reproved for failure than when they were praised for success. Failure-punishment had increased an original tendency towards significance to a significant difference over success-reward.

Kirkendall (24) investigated the influence of certain incentives on motivation of children in the fourth, fifth and sixth grades. He used the questionnaire method favored by Laird (25) and Briggs (5). Out of two hundred eighty-four subjects, he found that eighty-five percent of the subjects reported they studied harder when there was an examination pending than when the teacher simply used praise. Sixty-seven per cent of the pupils said they studied harder when the teacher scolds than when she praises them. While these data appear to conflict with the results found by Laird and Briggs, the studies are not comparable since Laird and Briggs used high school and graduate students respectively in their studies.

Wood (46) in another experiment to determine the

effect of approbation and reproof on the memorization of nonsense syllables, organized thirty college students into three equal groups. A series of six nonsense syllables was presented to each subject with each syllable being exposed for fifteen seconds as a preliminary test to establish norms. Prior to the administration of the second test, the control group was given the same instructions as before the first test. The Approbation group was told that their high scores on the first test indicated a superior intelligence and that the second test was to verify those findings. The Reproof group was told that their low scores indicated their degree of intelligence and the hope was expressed that the second test would produce better memory scores. From a comparison of the scores of the three groups, the author concluded that "approbation and reproof are of practically equal value as incentives to learning for college students".

Schmidt (35) working with age groups varying from the sixth grade through college, studied the effects of praise and blame on each subject's ability to learn a code substitution test. Six characters from Gates Test of Associative Learning were arranged along the top of a page as a key, with other characters, in lines, filling the page. Using the key, the subjects were to identify as many numbers, as possible in two minutes. This process was repeated five times with alternate forms of the code. The tester collected

the tests after each trial, examined them for one minute and said, "That was very good (poor)", or made no comment. "Let's try it again." A sphygmomanometer cuff was used to measure changes in blood pressure, pulse and breathing rate to detect the effect of the testers or of emotional factors. Schmidt found that "Neither praise or blame could be singled out as being more effective, the one over the other."

It would appear that the foregoing studies could serve as a tentative guide for teachers as they seek to apply, in their classrooms, sound psychological principles relative to pupil adjustment.

However, one cannot but notice that the literature on this subject is not conclusive; also that the various experiments taken together do not constitute a systematic attack on the problem of the effect of psychological needs on either classroom learning or pupil adjustment. While various individual studies in this area may be sound in themselves, they are, nevertheless, fragmentary. This criticism is probably as applicable to the present study as it is to those of its predecessors.

Furthermore, another criticism of many of the studies is that the experimental situation itself, while purporting to be applicable to the classroom, actually is artificial to some degree and the conclusions and generalizations are not always sound so far as classroom procedure is concerned.

It is hoped that the design of the present study avoids this weakness since the task in the experimental situation is actually a part of the regular fourth grade curriculum; and praise from a teacher is neither unrealistic nor undesirable.

One of the variables related to motivation in learning which has been seldom mentioned or entirely ignored in the foregoing studies is the effect of partial reinforcement. As Deese (10) points out when referring to one hundred per cent reinforcement experiments: "....this condition is seldom met in nature. More often an organism will be reinforced only occasionally for a particular response." In considering this evident truism, it would be appropriate to briefly examine the pertinence of partial reinforcement as it pertains to personality change.

Jenkins and Stanley (21), in a very thorough analysis of the effects of partial reinforcement, summarized their conclusions by stating that (1) a schedule of one hundred per cent reinforcement builds response strength somewhat more rapidly than reinforcement under a partial regime; (2) Post-acquisition performance is stable in the partial reinforcement situation but usually at a lower level than in the one hundred per cent instance; and (3) that partial reinforcement produces significant differences in resistance to extinction over the one hundred per cent regime. In

final conclusion, the authors state (p. 231):

> The practical implication of this principle for maintaining behavior is obvious: Administer the reinforcing stimulus in the conditioning according to a partial schedule, and the behavior will be maintained for long periods in the absence of external support from primary reward.

Studies by Skinner (37) suggest that partial reinforcement accumulates much greater response strength per reinforcement than does reinforcement. This conclusion, of course, is in complete agreement with the Jenkins and Stanley implication.

Munn (32) in reviewing studies of incentives-utilized in the classroom states that: (p. 259)

> Twelve classroom investigations involving children in the elementary grades have been reported. The incentives used in these were praise and blame, material rewards, such as candy and money, recognition in the form of stars and having one's name placed on the blackboard, knowledge of results, and individual and group rivalry. The curricular materials were arithmetic, grammar and spelling. Non-curricular materials such as cancellation and digit symbol substitution tasks were also used. In most instances both speed and accuracy of performance were measured. Emphasis was primarily upon immediate gains, not upon long-time retention. In none of these studies moreover was there an attempt to measure understanding.

Munn further adds: (p. 260)

> Thus classroom investigations in this field support the principle already enunciated upon the basis of laboratory investigations; namely, that motivation is a significant factor in learning wherever it occurs. However, they have so far provided little if any indication of the way in which the principle can be most effectively be utilized to control classroom learning.

In the light of the preceding observations and con-

clusions regarding partial reinforcement it appears to be desirable to use regular classroom procedure in which praise is utilized on a partial reinforcement basis in an effort to influence classroom performance and personality adjustment in a positive direction.

Purpose of the Study

The purpose of the study was to attempt to discover what effect systematic praise, as a partial reinforcement, given for an activity which was presented as a regular part of the classroom procedure, would have on:

1. The social and emotional adjustment of maladjusted children as measured by a psychometric instrument.

2. The accuracy and work output of maladjusted children in the task of arithmetical computation involved in the addition and subtraction of two column, two digit numbers.

CHAPTER II

METHOD

Introduction

In the present study four hundred and four fourth grade pupils were divided into three groups. Experimental Group I received verbal reinforcement 66 2/3 per cent of the time; Experimental Group II received verbal reinforcement 33 1/3 per cent of the time; Group III, the Control Group received no verbal reinforcement (zero per cent reinforcement).

The entire experiment was planned to be completed within a six-week period or approximately thirty school days.

The effects of these varying treatments were to be measured in terms (1) of the number of correct responses on the arithmetic tasks and (2) of any changes in the total adjustment scores which would be measured by a standardized type test of personality, namely, the California Test of Personality, Elementary Form AA and BB.

Subjects

Twelve elementary schools, nine in Oklahoma City and

three in Norman, Oklahoma, cooperated in the experiment. The Oklahoma City Schools were selected by the Director of Elementary Education, Mrs. Gladys MacDonald, of the Oklahoma City School System. Selection was made by choosing those schools in the south and western part of the city whose principals evinced an interest in the study. The same general locale of the schools provided a reasonably homogeneous population relative to socio-economic status, roughly lower middle class. The population of the Norman Schools was somewhat more heterogeneous though preponderately lower middle class also. The schools in the Norman system were selected by the Superintendent, Mr. Don Garrison.

The schools of Oklahoma City were randomly divided into three groups. One group was designated as Experimental Group I; another as Experimental Group II; and the third as the Control Group. The same random selection was applied to the Norman school population.

The three groups contained a total population of four hundred and four subjects. Experimental Group I contained 118 subjects; Experimental Group II, 154; and the Control Group numbered 132 subjects. Fourth grade students were used throughout the study because it was felt the pre-adolescent student would be more sensitive to adult influence than the adolescent, and because the elementary forms of the California Test of Personality, being designed for about the

third grade reading level, would reduce reading difficulty for the fourth grade student.

Though the limitations of the group personality tests were fully recognized, the accessibility of the subjects and the scope of the study precluded the use of individual diagnostic or sociometric instruments for personality measurement.

Description of Tests

California Test of Personality

The California Test of Personality, Elementary Forms AA and BB was used because (1) a group test was indicated by the number of subjects and their accessibility; (2) the Elementary forms are written at the third grade reading level; (3) of their wide use in public schools; (4) of equally reliable alternate forms; (5) and because of their facility in administration.

The California Test of Personality[1] is divided into two parts, a Personal Adjustment and a Social Adjustment. Each part is composed of six sections, each section containing twelve questions which may be answered either Yes or No. The Personal Adjustment section is designed to measure six components of personality, namely, self-reliance,

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[1]California Test Bureau Manual. California Test of Personality, 1953 Revision. Los Angeles, California.

sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies, and nervous symptoms. The items in the Social Adjustment half is intended to measure social standards, social skills, anti-social tendencies, family relations, occupation relations, and community relations. Scores from these two parts combine to produce Total Adjustment scores which are converted into percentile ranks based on national norms. The test purports to:

1. Provide a frame of reference regarding the nature of personality determinants and their relationships to each other and to the total functioning personality.
2. Provide information about individuals which is useful in understanding their problems and improving their adjustment.
3. Serve as an instrument of research for obtaining other types of information.

Arithmetic Task

Arithmetic Tasks were chosen to provide a routine classroom activity upon which the subjects might be praised. In order to coincide with the achievement level of the fourth grade these tasks consisted of seventy-two problems of simple addition and subtraction of two-digit numbers and were presented to the pupils as a regular part of the classroom activity. (See Appendix II)

Procedure and Schedules of Reinforcement

Procedure

The California Test of Personality, Elementary Form AA, was administered to 404 fourth grade pupils. Those pupils who scored at the thirtieth percentile or lower, were arbitrarily classified as "maladjusted". Experimental Group I contained forty-three pupils in this category, Experimental Group II sixty-six, and the Control Group fifty-nine. To numerically equate the groups, forty-three pupils were randomly selected from Experimental Group II and the Control Group. Individual teachers were asked to submit a list of ten pupils who, in their opinion, were "maladjusted" or who were "problem children". This selection was made before personality test scores were made known to the teachers. The criterion for selection however, was the personality test scores, though in passing it might be mentioned that seventy per cent of those pupils selected by the teachers as being in the low adjustment regions were likewise identified as "maladjusted" by the personality test.

Those pupils who were absent from school during the experiment were dropped from the study. However, they continued to receive the same treatment and their scores were recorded as though they were a part of the experiment. Teachers were not aware that they had been dropped. Experimental Group I lost fifteen cases through absences,

Experimental Group II lost eighteen cases and the Control Group lost seventeen cases. By random selection, twenty-five cases were chosen from Experimental Group I and from the Control Group to equalize the groups for statistical analysis.

Schedules of Reinforcement

Each individual teacher in the Experimental groups was to give verbal reinforcement under circumstances as nearly approaching normal classroom conditions as was possible. The ten different drill sheets were provided so that the pupil might have a different set of problems for ten continuous days before the same problems were repeated. The pupil was instructed to work as rapidly and as accurately as possible. The maximum time allowed was three minutes. Correct responses were recorded for each day. All teachers were given instructions (Appendix I) outlining the purposes of the study as well as procedures they were to follow in their classes. Teachers in Experimental Group I gave verbal reinforcement to "maladjusted" pupils for their performance on the arithmetic tasks on the average of two out of three days, or reinforcement on a 66 2/3 per cent basis. The "maladjusted" pupils of Experimental Group II received praise on the average of one of three days, or reinforcement on a 33 1/3 per cent basis. The Control Group received no reinforcement for performance in the arithmetic task at any time.

The twenty days on which praise was to be given in Experimental Group I were randomly selected as, days 3, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, and 25. The first day that the arithmetic task was given was designated as "Day 1" and each succeeding day of school was correspondingly designated throughout the thirty day period. In Experimental Group II, the random selection of days on which verbal reinforcement was to be given included days 3, 7, 8, 9, 14, 18, 20, and 25. No praise was to be given in the Control Group. On days when praise was not scheduled, the arithmetic papers were distributed and collected without comment on previous performance. The arithmetic tasks were initially presented to the pupils to "see if we can improve our ability to do addition and subtraction".

Teachers were asked to give verbal praise consistent with their usual procedure in the classroom but conforming to such remarks as, "You did well on the arithmetic drill yesterday," or "You are showing a lot of improvement in your arithmetic," or "I like the way you are working on your arithmetic problems." Teachers were asked to vary their praise so as to avoid stereotypy. It was also suggested that praise be given both publicly and privately, either (1) by a public acknowledgment in class, as a comment to an individual pupil as papers were being distributed or collect-

ed, or (2) by stopping the individual for a short conference, either immediately before or after the drill. Students who were in the class but who were not classified as "maladjusted", and who publicly asked for favorable comment on their performances on the arithmetic task, were evaded until private disposition could be made of the question. This procedure was designed to insure that no pupil other than those classified as "maladjusted" would publicly receive praise for performance on the arithmetic task.

At the end of the first fifteen days of the experiment, the alternate form of the California Test of Personality, Elementary Form BB, was administered to determine if any change had occurred in the "psychometric adjustment" of the groups. Cumulated scores for arithmetic were tabulated for comparison with the initial scores. Teachers were asked to keep written accounts of any behavioral change in those students who were receiving reinforcement.

The initial California Test of Personality, Elementary Form AA was again administered to all pupils at the end of the six week period and cumulated arithmetic scores were again recorded.

The effects of these different treatments were to be measured in terms of the changes in total adjustment scores and in the number of correct responses on the arithmetic tasks. To measure the effect of verbal reinforcement

on "maladjustment" at the end of the third week, raw scores from the California Test of Personality, Elementary Form BB were compared with total adjustment raw scores from the initial Elementary Form AA of the test to determine gains or losses in "adjustment." Arithmetic scores were recorded on Day 1 and Day 15 for comparison to determine the effects of verbal reinforcement on arithmetic performance, after an interval of three weeks. At the end of six weeks a second post-test, the California Test of Personality, Elementary Form AA, was administered and the total adjustment scores were compared against the total adjustment scores recorded on the initial test. Arithmetic scores were recorded on Day 30 for a similar comparison. These data, recorded from the initial test, the mid-test and the end-test, were subjected to statistical analysis to determine if verbal reinforcement effected significant changes in total adjustment scores, as measured by the California Test of Personality, or in the number of correct responses to a daily arithmetic task. Table A, provides an overall summary of the research plan.

TABLE A

SUMMARY OF THE EXPERIMENTAL PROCEDURES*

Group	Pre-test (X_1)	Days 1-15	Post-test 1 (y_1)	Days 16-30	Post-test 2 (y_2)
I	ALL S's	66 2/3% re-inforcement	ALL S's	66 2/3% Re-inforcement	ALL S's
II	receive California Test of	33 1/3% Re-inforcement	receive California Test of	33 1/3% Re-inforcement	receive California Test of
III	Personality Form AA	Control (No reinforce-ment)	Personality Form BB	Control (No reinforce-ment)	Personality Form AA

*Procedures follow a left-to-right sequential pattern.

CHAPTER III

ANALYSIS OF DATA

A Note Concerning Statistical Method

The primary statistical technique used to analyze the data was the analysis of covariance. Since it was not feasible to "equate" pupils at the outset of the experiment, a statistical device which would compensate or adjust for existing differences, on the basis of initial performances, was needed. Fortunately, the analysis of covariance adjustment "corrects" final mean scores for initial differences and in addition, allows for the degree of correlation between pre-test and post-test measures.

Edwards (12), for example, describes the covariance adjustment technique, as follows:

> The analysis of covariance is applicable to any experiment in which a source of variation, which it may not be possible to equalize between the various experimental groups prior to the experiment proper, can be measured. An adjustment is then made for this source of variation in the analysis of the outcomes of the experiment. A case in point would be where the levels of initial ability may condition the outcomes of the experiment, but where the subjects in the various groups have not been equated with respect to this variable prior to their assignment to the experimental conditions. (p. 335)

The computational model provided by Edwards was closely followed in all applications of the covariance technique to the present data.

Analysis of Three Weeks Total "Adjustment" Scores

Table 1 shows the raw scores and mean adjustment scores made by three groups of subjects on three successive testing occasions. It will be remembered that the testing sessions were grouped as follows: the pre-test (X), the initial post-test (Y_1) administered at the termination of the first three weeks, and the second post-test (Y_2) measure, obtained at the completion of a six week period. The position of the scores in the Pre-test groups corresponds directly to the position of the scores on the Post-test (Y_1) and the Post-test (Y_2) groups. For example, the score of the initial subject under Group I of the pre-test is followed by the initial score of that same subject in the first position under Group I of post-test (Y_1) and post-test (Y_2), so that the subject's scores are identified as 89, 106 and 104, in that order, on the three tests. All other scores were arranged in a similar manner.

One requisite assumption underlying the use of analysis of covariance is concerned with the homogeneity of variance. A test of homogeneity of variance was therefore applied to the initial adjustment scores of the three groups.

The three groups were taken two at a time and com-

TABLE 1

TOTAL ADJUSTMENT SCORES OF THE THREE GROUPS OF SUBJECTS FOR THREE SUCCESSIVE TESTING OCCASIONS

(Pre-Test) Groups			(Post-Test$_1$) Groups			(Post-Test$_2$) Groups		
1	2	3	1	2	3	1	2	3
89	99	79	106	86	78	104	79	65
91	91	65	104	89	79	105	99	64
82	101	85	92	89	56	79	89	72
86	83	71	111	82	54	117	108	81
75	101	89	107	112	104	114	121	108
73	97	50	97	106	38	77	125	67
92	96	71	105	108	88	107	122	106
57	92	101	68	89	114	61	114	119
61	84	96	78	86	97	64	70	109
63	91	93	77	84	96	71	111	126
78	58	95	75	73	89	93	62	90
79	76	98	92	56	102	114	68	121
88	75	97	96	96	100	116	114	91
90	71	96	107	78	108	132	54	103
81	72	97	82	71	119	65	66	124
84	95	100	78	76	114	79	77	128
99	101	101	123	110	87	138	109	107
72	97	84	68	74	75	78	92	85
89	92	77	87	112	55	70	107	60
101	81	74	71	69	76	104	66	74
95	88	80	74	99	85	85	111	115
88	94	68	85	102	82	77	117	67
91	97	73	89	89	75	89	107	71
87	70	100	76	80	106	99	82	98
77	81	94	73	94	80	79	88	74
Sum								
2068	2183	2134	2221	2210	2157	2317	2458	2325
Mean								
82.72	87.33	85.36	88.84	88.4	86.28	92.68	98.32	93.00

pared with respect to variation ratios. Since none of the resultant F values[1] emerged as being statistically significant from zero at the .05 level of confidence, the hypothesis of no differences among group variances could not be rejected.

A summary of the covariance analysis carried out to test for statistical differences in "adjustment" among the groups at the end of the first three weeks is given in Table 2.

TABLE 2

ANALYSIS OF COVARIANCE OF PRE-TEST (X) AND POST-TEST (Y_1) SCORES MADE BY THREE GROUPS OF FOURTH GRADE CHILDREN ON THE CALIFORNIA TEST OF PERSONALITY

(Group N = 25)

Source	df	SS_x	SS_y	SS_{xy}	$SS_{y.x}$	Adjusted Variances	F $_{y.x}$
Among	2	266.43	93.88	-38.56	460.64	230.32	
Within	72[2]	7229.24	21182.40	7664.16	13057.66	183.91	1.252
Total	74	7495.67	21276.08	7625.60	13518.30		

The F value of 1.252, for 2 and 72 degrees of freedom, was clearly not "significant" at any recognized level

[1]Groups 1 vs 2, F = 1.07; Groups 1 vs 3, F = 1.511; Groups 2 vs 3, F = 1.411.

[2]One degree of freedom lost in calculation of the regression coefficient.

of confidence. On the basis of this result, it was concluded that verbal reinforcement, as administered in either 66 2/3 per cent or 33 1/3 per cent "quanities", exerted no differential change in "adjustment" in pupils when compared with the zero per cent, or control group. The foregoing F value, of course, refers to the pupil adjustment scores for the first three weeks of the study.

Analysis of Six Weeks Total "Adjustment" Scores

The next operation was to analyze the pre-test total adjustment scores against the total adjustment scores at the termination of the six week period. Their particular covariance summary is in Table 3.

TABLE 3

ANALYSIS OF COVARIANCE OF PRE-TEST (X)
AND POST-TEST (Y_2) SCORES MADE BY
THREE GROUPS OF FOURTH GRADE CHILDREN
ON THE CALIFORNIA TEST OF PERSONALITY
(Group N = 25)

Source	df	SS_x	SS_y	SS_{xy}	$SS_{y.x}$	Adjusted Variances	$F_{y.x}$
Among	2	266.43	501.79	310.13	289.11	144.55	
Within	72[3]	7229.24	15404.88	2931.20	14216.39	200.23	.721
Total	74	7495.67	15906.67	3241.33	14505.50		

[3]One degree of freedom lost in calculation of the regression coefficient.

The value of .721 ($F < 1$), shown in Table 3, also failed to approach statistical significance. The indication, then, is quite clear at this point that no "adjustment" changes were generated in pupils belonging to any treatment group over the entire six week period.

Analysis of "Gains" Scores

An inspection of each group's raw scores and of the group mean scores of the initial and final "adjustment" appraisals revealed "differences" which appeared, at the outset to be highly suggestive. These differences suggested a tendency toward psychometric change in personality "adjustment" in a positive direction. To explore this possibility, the analysis of covariation was used as the statistical technique to investigate the possible significance of the "gains" between the pre-test and the final post-test adjustment scores. The data used for this analysis were the pre-test total adjustment scores and the difference between the pre-test and final post-test adjustment scores for each S in each group. Table 4 summarizes the data utilized in the "gains" analysis.

Table 5 summarizes the pertinent data concerning the question of whether significant "gains" in adjustment were made by anyone of the three groups over the six week period.

The obtained F value of 2.94 for 2 and 71 degrees of freedom barely failed to reach the value of 3.13 required for

TABLE 4

RAW SCORES AND MEANS OF DIFFERENCES BETWEEN PRE-TEST (X) AND FINAL ADJUSTMENT SCORES (Y_2) FOR THREE GROUPS OF FOURTH GRADE SUBJECTS

(Pre-Test) Groups			($Post\text{-}Test_2$) Groups			(Difference) Groups		
1	2	3	1	2	3	1	2	3
89	99	79	104	79	65	15	-20	-14
91	91	65	105	99	64	14	8	- 1
82	101	85	79	89	72	- 3	-12	-13
86	83	71	111	108	81	31	25	10
75	101	89	114	121	108	39	20	19
73	97	50	77	125	67	4	28	17
92	96	71	107	122	106	15	26	35
57	92	101	61	114	119	4	22	18
61	84	96	64	70	109	3	14	13
63	91	93	77	84	96	8	20	33
78	58	95	93	62	90	15	4	- 5
79	76	98	114	68	121	35	- 8	23
88	75	97	116	114	91	28	39	- 6
90	71	96	132	54	103	42	-17	7
81	72	97	65	66	124	-16	- 6	27
84	95	100	79	77	128	- 5	-18	28
99	101	101	138	109	107	39	8	6
72	97	84	78	92	85	6	- 5	1
89	92	77	70	107	60	-19	15	-17
101	81	74	104	66	74	3	-15	0
95	88	80	85	111	115	-10	23	35
88	94	68	77	117	67	-11	23	- 1
91	97	73	89	107	71	- 2	10	- 2
87	70	100	99	82	98	12	12	- 2
77	81	94	79	88	74	2	7	-20
Sum								
2068	2183	2134	2317	2458	2325	249	175	191
Mean								
82.72	87.33	85.36	92.68	98.32	93.00	9.96	7.00	7.64

statistical significance at the .05 level.

TABLE 5

ANALYSIS OF COVARIANCE OF PRE-TEST (X)

AND POST-TEST (Y_2) "GAINS" SCORES

OF THREE GROUPS OF FOURTH GRADE CHILDREN

ON THE CALIFORNIA TEST OF PERSONALITY

Source	df	SS_x	SS_y	SS_{xy}	$SS_{y.x}$ Adjusted Variances		$F_{y.x}$
Among	2	266.43	121.28	-2334.26	1618.33	809.17	
Within	72	7229.24	21004.72	3516.96	19321.28	272.13	2.94
Total		7495.67	21126.00	1182.00	20939.61		

However, as Burke[4] points out:

> Frequently, the psychological experimenter expresses dissatisfaction with the ordinary table for interpreting F ratios. This table gives the values of the F ratio which are required for significance at the .01 and .05 levels, but, unlike the t and X^2 tables interpolations for values below the .05 level are not possible. Faced with a value of F which is not significant at the .05 level, the experimenter often wishes to estimate its actual significance. If it is significant at the 8 per cent level, for example, further experimentation may be indicated, but if it is barely significant at the 30 per cent level, the experimenter might discontinue working with the particular variables involved. (p. 392)

The foregoing situation described by Burke indeed appears to

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[4]Burke, C. J., "Computation of the Level of Significance in the F-Test", Psychol. Bull., 1951, 48, 392-397.

"fit" the current result. The obtained F-ratio of 2.94 for the "gains" over the entire six week period was not statistically significant from zero at the .05 level. However, from the tables of percentage points of the inverted Beta distribution by Merrington and Thompson[5] an F value of 2.39 is required for significance at the 10 per cent level. Hence the present F-ratio of 2.94 is "significant" somewhere between the 5 per cent and 10 per cent levels. Quite probably its actual significance level is close to the 7 per cent level. How then is the result to be interpreted? The group receiving 33 1/3 per cent "reinforcement" gained 275 total points over the six week period. The 66 2/3 per cent "reinforcement" group gained 249 total points, while the control or zero per cent group gained a total of 191 points.

It would appear then that the 33 1/3 per cent "reinforcement" group "gained" in adjustment scores when compared with the controls. This "gain" was probably significant in the neighborhood of the 7 per cent level. One interpretation attaching to this result would simply be that the variable of "verbal reinforcement" merits further attention in the area of pupil "adjustment" in the classroom. However, for purposes of the present study, statistical rigor shall be maintained, and the foregoing result will not be considered

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[5]Merrington, M. and Thompson, C. M., "Tables of Percentage Points of the Inverted Beta (F) Distribution", Biometrika, 1943, 33, 73-88.

as significant - merely highly suggestive that further manipulation of the variable indicated is indeed required.

Analysis of Arithmetic Performance

It will be remembered that all pupils were required to perform a routine arithmetical task each day for a thirty day period. It was decided to compute the analysis of covariance between the initial day (X) arithmetic scores[6] and the cumulated (Y) arithmetic scores at the termination of trial 30.

However, instead of analyzing the actual recorded values or "raw" scores, the analysis was applied to the square root transformed values obtained from both the X and Y measures. Table 6 shows the mean performance scores for each of the three groups each day for the thirty day period. The foregoing means were computed upon the transformed data.

Table 7 summarizes the results of the covariance analysis carried out between the transformed (Day 1) pre-test

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[6]Difficulties arose on two occasions. In one Control Group classroom the teacher misunderstood the verbal instructions and misread the written instructions for teachers. This resulted in the pupils being permitted to work for thirty minutes on the arithmetic task for the first day of the experiment instead of the prescribed three minutes. The majority of the pupils completed the arithmetic problems on both sides of the sheet so that it was impossible to compute or pro-rate the work output for the initial day. In order to obtain scores for that day, an average of the number of problems correctly solved on days two and three was substituted in day one. Eight cases were involved.

TABLE 6

MEAN TRANSFORMED SCORES MADE BY THREE GROUPS OF FOURTH GRADE PUPILS ON A ROUTINE ARITHMETIC TASK EACH DAY FOR THIRTY DAYS

Day	Group I (66 2/3%)	Group II (33 1/3%)	Group III (Zero %)
1	12.04	12.88	17.04
2	20.48	15.08	18.36
3	22.88	17.36	20.84
4	24.84	22.24	24.40
5	24.20	23.72	26.32
6	23.32	21.20	23.84
7	23.72	24.92	23.88
8	24.60	24.28	22.00
9	27.08	20.68	25.84
10	26.12	25.84	23.80
11	23.52	26.24	27.76
12	24.28	24.72	26.16
13	26.20	23.04	26.04
14	31.24	25.76	24.08
15	29.00	26.36	27.72
16	26.56	26.64	28.16
17	26.92	27.96	26.36
18	27.52	24.68	25.48
19	25.20	25.32	28.36
20	30.72	26.16	28.40
21	32.20	27.08	30.32
22	29.52	27.88	27.52
23	29.44	27.72	24.60
24	26.60	27.00	28.92
25	32.96	29.12	31.04
26	32.04	30.92	31.04
27	30.44	29.84	28.68
28	31.24	29.76	25.68
29	26.44	32.52	34.04
30	32.76	31.28	31.68

arithmetic scores and the transformed cumulated arithmetic scores at the end of Day 30 (Days 2-30). It should be pointed out that tests for homogeneity of variance were carried out for the pre-test arithmetic data prior to computing this covariance analysis. The results failed to reach statistical significance and it was concluded that the groups were "random" samples from a homogeneous population.

The covariance F value of .305, shown in Table 7, failed to exceed unity and was clearly not significant.

TABLE 7

ANALYSIS OF COVARIANCE OF TRANSFORMED PRE-TEST ($\sqrt{X}$) AND CUMULATED POST-TEST (Y) ARITHMETIC SCORES OF THREE GROUPS OF FOURTH GRADE SUBJECTS ON THE ARITHMETIC TASK

Source	df	SS_x	SS_y	SS_{xy}	$SS_{y.x}$	Adjusted Variances $F_{y.x}$	
Among	2	7.67	7.97	.25	15.22	7.61	
Within	72	121.81	1904.51	126.14	1773.89	24.98	.305
Total		129.48	1912.48	126.39	1789.11		

The foregoing analysis of both the adjustment and arithmetic data produced the following results:

1. When analyzing personality "adjustment" data as

presented, it was found that no significant psychometric change was produced during the first three weeks of the experiment that could be attributed to the independent variable of verbal "reinforcement" from the teacher.

2. When analyzing the personality "adjustment" data for the entire six weeks of the study, it was again evident that no significant psychometric change had been produced at least at the .05 level, in the adjustment scores of the subjects as a function of "reinforcement". However, a "trend" for significant gains was made by the 33 1/3% partial reinforcement group, at approximately the .07 level of confidence.

3. Analysis of the transformed cumulated arithmetic scores revealed that no statistically significant change in terms of correct response, was produced by verbal praise at the end of the six week period.

Teachers Judgments Concerning Pupil Behavior

The statistical analysis just presented failed to reveal any "differences" among groups for both response measures. However, "qualitative" data suggest that changes might well have occurred in some few individual cases. As we know the differences appearing between the initial adjustment scores and the adjustment scores recorded at the end of three and six weeks intervals are not greater than differences which might be attributable to chance. However,

these differences are in a positive direction and are greater than the differences extant between the initial and subsequent scores made by the control group. Table 8 presents a summary of these differences.

TABLE 8

RAW SCORE GAINS MADE BY THREE GROUPS OF FOURTH GRADE SUBJECTS IN SUBSEQUENT TESTS ON THE CALIFORNIA TEST OF PERSONALITY

Groups		$(Y_1)-(X)$ Gains	$(Y_2)-(X_1)$
I	(66 2/3%)	153	249
II	(33 1/3%)	38	275
III	(Zero %)	23	191

It will be noted that Group I, receiving reinforcement on a 66 2/3 per cent basis, gained a total of 153 points at the end of the first three weeks as compared to total gains of 38 and 23 for groups 2 and 3 respectively. At the end of six weeks, group 2 produced the largest total gain with 275 points, compared with gains of 249 and 191 for Group 1 and 3.

Arithmetic performance too "improved" over the six week period. Some improvement for all groups due to practice was of course not an unexpected result. Though the gains in performance were not statistically significant, the two

"treatments" groups showed greater improvement than did the control group. Table 9 illustrates these data by presenting the total gain scores.

TABLE 9

RAW SCORE GAINS MADE BY TWO GROUPS OF FOURTH GRADE SUBJECTS ON THE DAILY ARITHMETIC TASK

Groups	Gains $(Y_1)-(X_1)$	$(Y_2)-(X_1)$
I (66 2/3%)	422	518
II (33 1/3%)	337	460
III (Zero %)	267	266

Clearly, the two treatments groups made larger gains than did the control group. At the end of six weeks, Group I and Group II produced gains of 518 and 460 in correct responses respectively, as compared to a gain of 266 correct responses by the control group.

The raw score gains made in adjustment and arithmetic scores, when considered in terms of the statistical analysis, were clearly not "significant", and only one conclusion can be drawn. However, when the performance of each individual pupil is examined more closely and the comments of the classroom teacher are at least considered in relation to these individual performances, a blanket rejection of "reinforce-

ment" and its possibility with future research in the classroom might be unwise at this point.

Although not central to the study being reported, a variety of teachers comments[7] emerged as a by-product. The following judgments of several teachers concerning the behavior of various pupils during the experiment were incorporated for the purpose of lending completeness to the report. It is unnecessary, no doubt, to urge the reader to exercise extreme caution when placing an interpretation upon the following comments from the teachers who participated in the study.

Comments of teacher in school I:

> Comment 1: "James' regular school work has improved one whole letter grade and his attitude is much better."

Scores recorded for this student show adjustment scores of 89, 106, and 104 for the pre-test, post-test$_1$ and post-test$_2$, in that order.

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[7]Another difficulty which was encountered involved the teachers' observations of behavioral changes in those students receiving reinforcement. Some teachers interpreted the request for their observations as pretaining to behavioral changes of the entire group rather than observations of individual changes in behavior. As a result only five teachers of the eight Experimental Groups I and II submitted reports which permitted individual changes noted by the teacher to be compared with total adjustment scores. Comments regarding changes in behavior were made on thirty-three of the fifty pupils in the two groups and the comparisons listed represent about 70 per cent of the pupils receiving reinforcement. Of these thirty-five estimations, nearly 75 per cent were in essential agreement with adjustment scores.

Comment 2: "Linda does not ask for approval all the time now. She has gained more confidence and is an excellent student."

Scores: 99, 128 and 132.

Comment 3: "Derrell expresses himself much more freely. He seems to enjoy discussing his problems with me now and appears to enjoy school more."

Scores: 73, 97 and 77.

Comment 4: "Nancy doesn't cry about everything now as she did the earlier part of the year and she has gained more confidence."

Scores: 55, 64 and 61.

Comment 5: "Ronnie's general attitude and conduct are better."

Scores: 57, 68 and 61.

Comment 6: "There has been much change in Patricia. She seems more confident and does her work on her own without constantly asking for someone's approval."

Scores: 86, 111 and 117.

Comment 7: "Jerry seems happier. He is more pleased when I compliment him in any way."

Scores: 91, 104 and 105.

Comment 8: "Most response came from Velda, Bobby, Shirley, Donna and James when I praise them."

Scores: Velda: 74, 121 and 129; Bobby: 71, 78 and 54; Shirley: 75, 96 and 114; Donna: 94, 106 and 121; James: 61, 85 and 75.

Comment 9: "Bobby has been a discipline problem, yet he has settled down and really tries. I might add that his little dog was killed by a car the day before he took the second personality test. He was quite despondent all day."

Comment 10: "Velda and Donna show the most adjustment in classroom attitudes. They were always tattling and

spatting at each other or at their neighbors. Now they are getting along with each other and their near neighbors."

Comments by teacher in school III:

Comment 11: "Dorothy has shown improvement in her attitude toward studies. She has improved in arithmetic."

Scores: 92, -- and 72.

Comment 12: "Gayela has not shown any noticeable improvement."

Scores: 99, 123, and 138.

Comment 13: "Dennis has not shown any noticeable improvement."

Scores: 97, 108 and 96.

Comment 14: "Murl has shown much improvement in attitude and desire to study."

Scores: 100, 79 and 102.

Comment 15: "Shirley has shown marked improvement in arithmetic. Her attitude seems to have improved."

Scores: 97, 90 and 80.

Comment 16: "James seems to have improved in reading and arithmetic. No other improvements are noticeable."

Scores: 89, 87 and 91.

Comment 17: "Barbara has shown some improvement in her attitude toward her studies.

Scores: 72, 68 and 78.

Comment 18: "Colleen has not shown any noticeable improvement."

Scores: 87, 72 and --.

Comments by teacher in school IV:

Comment 19: "Ellen is a nervous child -- has shown slight improvement."

Scores: 79, 92 and 114.

Comment 20: "Charles seems to have more confidence in himself."

Scores: 84, 78 and 79.

Comment 21: "Sammy takes more pride in doing a job well."

Scores: 88, 96 and 116.

Comment 22: "Bobby tries harder and does better work."

Scores: 61, 78 and 64.

Comment 23: "Darlene tries harder."

Scores: 76, 65 and 68.

Comment 24: "Tommy has shown considerable improvement in school work."

Scores: 85, 104 and 97.

Comment 25: "Carolyn does less "fussing" with other children - has a greater sense of fairness."

Scores: 78, 75 and 93.

Comment 26: "Louise seems to be happier - more acceptable."

Scores: 90, 107 and 132.

Comment 27: "Terry has more confidence in everything he does."

Scores: 63, 77 and 71.

Comment 28: "Alice seems to be more alert to fair play - wants to help others with their work."

Scores: 38, -- and 18.

Comments of teacher in school V:

Comment 29: "Ronald responded to the praise with enthusiasm. He improved on his arithmetic tests and kept saying how much better he intended doing each day."

Scores: 81, 94 and 88.

Comment 30: "Eileen always thanked me for the praise she received and seemed to wait for it each time. She was a little amazed at how well I said she was doing and did actually improve in our regular lessons very much."

Scores: 97, 79 and 96.

Comment 31: "Mike is smart but very slow about doing his work; he did not respond much to the praise. His emotions and attitudes change by the day."

Scores: 80, 100 and --.

Comment 32: "Donnie was very pleased with the praise and tried to do better on his three minute tests each time. On some of the non-praise days, he would ask if he was improving and say that he would try to do so many rows today. I noticed no particular change in other behavior. He never needs discipling."

Scores: 70, 80 and 82.

Comment 33: "Billy displayed no emotion during times of praise. It was as if he heard but didn't quite comprehend. His behavior in the classroom has not seemed to change except that he does not make senseless remarks anymore. He rarely ever needs discipling and once in a great while will contribute to a discussion."

Scores: 33, 33 and 33.

In summarizing the relationship between personality test results and teacher opinion of pupil behavior following verbal "reinforcement", it will be noted that thirty-three of a possible fifty teacher judgments were made. Of these thirty-three judgments, twenty-six were in "agreement" with

test scores at least in terms of "direction." It is not possible at this point to assess the value or accuracy of the judgments of pupil behavior expressed by the teachers. It will be noted that several of the teachers were quite emphatic in terms of describing positive "changes" for a few isolated pupils. The statistical analysis, however produced no differences of a significant "magnitude". Therefore keeping in mind the specific conditions under which the data were obtained it is herewith generally concluded that "reinforcement" exerted no real effects upon either pupil "adjustment" or upon performance in a repetitive arithmetic test over a six week period of time. This is to say that the group of pupils who did not receive reinforcement performed just as well as did the two treatment groups.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The express purposes of this study was to assess the effects of verbal praise, administered by the regular classroom teacher, for performance in an activity which was introduced as a part of the regular classroom routine and upon the following two factors:

1. The scores obtained from the California Test of Personality over the six week period were the criteria for total adjustment of the low "adjustment" pupils.

2. Work output, measured in terms of correct responses, of low adjustment pupils in a routine arithmetical task involving the addition and subtraction of two column two digit numbers, over a six week time period.

Three groups were used in this study: One group was exposed to verbal reinforcement by praise on performance on the arithmetic task on a 66 2/3 per cent basis; another group was given to verbal reinforcement on a 33 1/3 per cent basis for performance on the same arithmetic task; and a Control Group which received no reinforcement while performing the same arithmetic task. S's were seventy-five fourth

grade pupils selected from nine schools in Oklahoma City and three schools in Norman, Oklahoma. These pupils were classified as being low in adjustment on the basis of having scored at, or below, the thirtieth percentile on the California Test of Personality, Elementary Form AA. These "maladjusted" pupils were randomly assigned to each of three groups, prior to the initiation of the experiment. Each group was given a daily arithmetic assignment consisting of seventy-two addition and subtraction problems of two column, two digit numbers on which the pupils were to work for three minutes. Alternate forms of the California Test of Personality were given at the end of fifteen days and at the end of the experiment and arithmetic scores were recorded for each day.

The data discussed in the present investigation point to the following two salient conclusions:

1. Verbal reinforcement, under the operationally framed conditions as specified, did not exert any significant changes, at least at the .05 level of confidence, in pupils classified as being low in adjustment. This result is not too surprising, however, in view of the relatively short time period used, (six weeks). While no significant gains were registered by the experimental groups; the fact that the 33 1/3 per cent partial reinforcement group showed a gain significant at approximately the .07 level of confidence

would warrant the recommendation that similar experiments be executed over larger time intervals when studying adjustment changes in pupils.

2. Verbal reinforcement, under the operationally framed conditions specified did not exert any significant changes in the work output, measured in terms of correct responses, of "maladjusted" pupils in the task of arithmetical computation over the six week period covered by the experiment.

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APPENDICES

APPENDIX I

TO TEACHERS

This is a study to determine the value of systematic praise when given during normal classroom conditions to students who score low on a personality test.

Arithmetic problems will be supplied to provide an identical task for all students participating. It is asked that they be included as a part of the class routine and at the same time each day. These arithmetic drills might be best incorporated with the routine daily arithmetic assignment. An introduction such as: "We are going to try to improve our ability to do addition and subtraction by working for three minutes each day on written problems", might serve.

The experiment is to run for a total of 30 school days. Obviously the value of the study will be destroyed if the pupils become aware of the purpose and teachers are urged to use all precautions necessary to forestall such an occurrence.

TEACHERS OF EXPERIMENTAL GROUP #1:

Praise will be given on twenty of the thirty days. The days on which praise is to be given have been randomly selected. Numbering the first day of the experiment as #1, praise will be given on the following numbered days: 3, 5, 6, 7, 8, 10, 11, 13, 14, 15, and during the second fifteen days, 16, 17, 18, 19, 20, 21, 22, 23, 24, and 25. For example, the first praise will be given the third day after the beginning of the study, which will be Wednesday, April 6. The numbers refer to the number of the day the experiment has been operating.

Teachers will probably find the giving of praise a perplexing problem in that the same pupils are to be praised for the same task on twenty of the thirty days. Praise may be given in any of the following ways, depending on the classroom situation and daily circumstances:

1. Praise may be given by talking to pupils individually at their seats as the papers are being handed out.
2. Naming the pupils to be praised in class and commending them as a group.
3. A short individual conference.

Praise should be given immediately prior to the daily arithmetic drill and on the day scheduled.

Examples of ways in which praise might be given:

1. "I liked what you did on your arithmetic drill today."
2. "I was pleased with your work on your arithmetic drill yesterday."
3. "You are doing a good job and showing improvement."
4. "You are showing real interest."
5. "You are working more problems than you were at first and making fewer mistakes."
6. Any combination or variation of the above.

It is suggested that the use of superlatives such as "best" or "better than anyone in the room" be avoided unless the statement is true.

It is essential that the praise be given only on the specified days in order that identical procedures will be followed in all groups.

TEACHERS OF EXPERIMENTAL GROUP #2:

Praise will be given on the following days: 3, 7, 8, 9, and 14 during the first fifteen days and 18, 20, 21, 22, and 25 during the last fifteen days. Praise procedures are the same as for Experimental Group #1.

TEACHERS OF CONTROL GROUPS:

The arithmetic drills will be given out each day with NO praise being given at any time.

APPENDIX II

I. 2

69 − 11	47 − 34	7 + 76	60 + 41	90 − 76	22 + 48	91 − 45	34 + 7
12 + 60	78 − 1	64 + 35	34 − 18	8 + 39	96 − 72	36 − 7	67 − 28
59 + 10	8 − 7	48 − 23	98 − 89	93 − 64	35 + 58	89 + 8	86 − 75
99 − 83	29 + 85	76 − 62	29 − 27	89 + 81	33 − 30	34 − 14	91 − 78
58 − 56	93 − 27	63 + 86	63 − 14	59 + 52	32 + 80	52 − 2	55 + 10
15 + 19	83 − 68	97 + 87	60 + 65	79 − 3	73 − 24	52 + 31	66 − 16
56 + 56	59 + 21	48 + 53	55 + 24	6 + 90	93 − 27	91 − 33	98 − 42
94 − 29	38 + 5	49 + 87	22 + 1	47 − 13	59 + 88	83 + 38	96 − 34
53 − 51	81 + 86	32 + 29	13 + 68	92 + 39	35 − 33	1 + 98	74 + 20

1. ___

71 - 66	99 + 34	62 - 40	33 - 14	74 - 71	82 + 94	58 + 14	53 - 45
73 + 94	19 + 19	9 + 38	81 + 3	56 - 14	54 - 44	29 + 99	81 + 56
93 - 7	35 + 37	91 + 71	70 - 67	29 + 95	13 + 13	80 - 20	3 - 2
54 + 44	7 + 95	27 + 94	96 - 64	94 - 85	78 - 4	32 - 5	72 + 66
50 - 1	95 - 32	52 + 90	76 + 74	33 - 14	13 + 53	89 + 80	55 + 74
62 - 60	54 - 41	93 - 2	96 + 66	13 - 8	83 - 45	27 + 65	92 - 13
79 - 5	82 + 64	64 - 41	72 + 84	93 + 28	54 - 7	96 - 54	53 + 72
84 - 59	48 - 21	45 + 14	52 + 57	98 - 9	94 - 77	56 - 19	48 + 7
93 - 56	89 - 27	30 + 44	84 + 49	83 - 60	43 + 71	62 + 48	35 + 46

II.2

13 + 6	66 - 29	24 + 54	19 + 12	27 + 28	54 + 34	54 + 85	27 + 16
24 + 84	87 + 15	51 + 61	54 - 48	64 + 44	82 - 56	26 + 26	90 + 62
61 - 18	65 - 48	4 + 13	69 - 26	38 - 37	70 + 18	65 - 15	18 + 42
97 - 57	85 - 65	72 - 65	80 + 13	49 - 39	21 - 7	3 + 62	95 + 92
18 + 30	27 + 27	46 + 59	57 - 37	99 - 75	41 + 16	96 - 66	56 - 48
30 + 86	97 + 33	72 + 80	85 - 61	45 + 22	84 + 23	64 - 53	38 - 4
56 - 1	98 - 63	99 - 45	1 + 76	30 - 8	98 - 64	64 - 27	8 - 7
45 - 8	93 - 55	15 + 18	40 + 22	60 - 45	21 + 44	75 + 75	46 - 13
91 - 90	98 - 24	77 + 94	96 + 27	85 - 61	42 - 2	28 + 57	88 - 55

II. ___

88 + 2	68 + 69	64 - 36	38 + 36	74 - 25	45 - 39	19 + 48	59 - 3
50 - 45	88 + 15	92 - 22	50 - 22	44 + 66	66 - 22	44 - 15	86 + 21
66 - 26	6 + 63	75 + 58	5 + 41	99 + 62	68 - 58	15 + 42	54 - 36
72 + 35	2 + 24	58 + 42	35 + 37	52 + 48	96 - 18	32 + 51	14 - 3
52 - 37	41 - 18	52 - 39	48 - 11	96 - 31	73 + 24	40 + 91	61 + 14
51 - 19	23 + 60	22 - 20	72 + 30	88 + 93	57 - 48	98 + 95	67 - 57
47 - 7	29 - 23	83 - 69	94 + 65	69 + 95	40 - 39	6 + 69	58 + 7
18 + 56	80 + 16	36 - 30	78 - 19	86 - 44	78 + 84	60 - 37	90 + 73
99 - 61	84 - 56	43 + 70	89 - 10	94 - 23	98 + 36	45 - 5	56 + 85

III.2

71 - 19	71 - 23	41 + 52	61 - 23	50 - 33	72 - 12	96 + 12	41 + 93
94 - 2	96 + 18	26 + 39	44 - 7	95 - 2	27 - 18	36 + 36	99 - 7
2 + 25	99 + 96	74 - 32	30 + 70	83 - 23	41 + 60	23 - 20	52 - 50
55 + 81	99 - 69	31 + 31	4 + 99	49 + 73	69 - 68	96 - 68	10 + 35
81 + 47	48 - 33	45 - 3	88 - 76	13 + 24	41 - 30	43 - 12	89 - 49
60 + 20	97 - 18	17 + 99	14 - 10	72 + 49	17 + 34	91 - 34	50 + 25
38 + 57	74 + 5	90 - 37	98 + 94	80 + 58	33 + 28	41 + 41	36 + 91
45 - 9	77 + 37	59 + 93	19 + 3	9 + 82	90 - 74	94 + 35	57 + 80
29 - 4	12 - 4	82 - 45	62 - 7	54 - 31	66 + 65	60 - 49	85 - 9

III. ___

22 + 79	13 + 4	39 + 77	43 - 38	73 + 73	81 + 82	97 + 53	94 - 22
79 - 21	33 - 5	62 - 3	46 - 27	86 - 24	28 + 83	72 + 8	89 - 31
54 - 44	46 - 5	31 + 60	53 - 35	94 - 80	39 + 13	38 + 94	88 + 47
88 + 90	96 + 75	80 - 23	18 + 70	60 - 14	39 + 22	95 + 98	75 - 3
42 - 6	90 - 49	39 + 55	85 + 32	82 - 78	22 + 38	49 - 36	94 + 2
48 - 37	30 - 7	70 - 69	37 - 32	16 + 90	89 + 4	61 + 67	76 + 67
87 - 33	53 + 63	74 - 38	23 - 6	99 - 86	67 - 54	99 + 61	39 + 32
65 - 28	69 - 26	94 + 84	94 - 2	62 + 82	90 + 67	86 - 23	24 - 7
98 - 79	33 + 62	67 + 41	19 + 80	95 - 60	75 + 47	91 - 53	53 - 12

IV. ___

87 - 34	75 + 86	82 + 66	81 - 53	41 + 91	98 + 40	1 + 52	74 - 43
91 - 48	85 + 62	48 - 27	51 + 55	84 - 26	89 + 8	32 + 62	66 - 14
90 - 67	84 + 40	67 - 45	14 - 11	64 + 75	73 + 5	71 + 88	95 - 5
90 + 86	11 + 52	27 + 5	65 - 41	9 + 14	86 + 68	76 - 22	83 + 98
20 - 12	37 - 22	90 - 8	57 - 7	52 + 16	53 + 74	95 + 11	80 - 66
68 - 20	5 + 46	78 + 51	18 + 73	90 + 46	33 + 97	96 - 51	40 + 2
75 - 14	19 - 2	7 - 4	60 - 2	62 - 33	93 - 31	55 - 8	59 - 39
33 + 54	82 - 16	49 + 43	90 - 36	49 - 47	37 + 95	93 + 38	44 - 13
59 - 30	64 - 5	19 + 26	93 + 58	97 - 70	79 - 60	15 + 22	35 + 6

36 − 3	10 + 29	96 − 10	46 − 45	92 − 65	42 − 4	45 − 26	97 − 11
60 − 4	96 + 49	4 + 67	91 − 24	29 − 16	94 − 90	82 + 98	94 − 66
59 + 24	68 + 83	62 + 49	69 − 64	10 + 11	82 − 12	67 + 53	75 − 19
91 − 5	93 − 71	30 + 74	60 + 34	25 + 47	21 + 20	57 − 29	27 + 68
40 − 2	48 − 2	73 − 37	51 − 3	92 − 31	35 + 11	27 + 24	94 − 10
75 − 16	6 + 20	33 + 6	9 + 32	51 + 19	74 − 26	66 − 38	2 + 79
94 − 78	45 + 37	34 − 4	2 + 91	76 − 16	92 + 70	90 − 53	56 + 30
86 − 16	38 − 2	45 + 75	94 − 50	95 + 30	38 + 98	31 + 38	96 + 23
16 + 25	91 + 86	38 + 47	96 + 42	38 + 44	97 − 33	49 + 1	50 − 13

V.___

10 + 45	55 - 10	93 + 23	64 + 72	5 + 88	5 + 71	23 + 52	42 - 36
40 - 28	64 - 19	95 + 74	82 - 50	97 - 92	77 - 26	77 + 11	81 + 97
7 + 10	45 + 56	76 + 32	31 + 14	8 + 38	32 + 80	98 + 22	94 - 2
53 + 7	72 - 53	93 + 86	85 + 60	79 - 42	10 - 4	75 + 53	37 + 70
85 - 29	94 - 17	35 - 12	13 + 12	83 - 40	39 - 33	50 - 20	38 + 8
30 - 26	42 - 13	34 + 89	51 - 7	96 - 3	88 + 74	54 - 17	42 + 76
6 + 37	87 + 13	98 - 4	35 - 7	74 + 85	29 - 21	48 - 19	39 - 30
99 + 56	62 - 49	57 + 18	37 - 22	35 + 77	96 + 88	83 - 42	50 + 95
87 - 45	75 - 72	97 - 16	64 + 12	36 + 25	93 - 16	47 - 20	70 - 4

34 + 1	30 + 91	30 + 64	84 - 63	42 - 1	63 + 17	78 + 53	59 - 31
57 - 16	24 + 95	55 + 55	67 + 6	88 - 19	98 + 77	4 + 10	74 - 50
71 + 47	67 + 75	21 - 12	86 - 76	73 + 33	50 + 58	25 - 7	83 - 44
92 - 39	52 + 12	6 + 38	76 + 79	33 + 57	60 + 21	86 - 12	34 - 32
29 + 44	78 - 9	64 - 47	56 - 27	96 + 7	82 - 54	52 - 49	42 - 17
46 - 7	44 - 9	62 + 38	90 - 15	52 + 51	84 + 12	77 + 13	42 - 27
99 - 8	66 - 2	79 - 43	54 - 28	73 - 2	26 + 18	18 + 62	7 + 38
92 + 97	46 + 75	44 + 84	17 - 16	16 - 7	58 - 44	99 + 9	79 + 83
83 - 11	86 - 46	32 + 19	62 - 46	6 + 20	76 - 14	85 - 50	88 + 3

APPENDIX III

Elementary • GRADES 4-5-6-7-8 • form AA

California Test of Personality

1953 Revision

Devised by

LOUIS P. THORPE, WILLIS W. CLARK, AND ERNEST W. TIEGS

Do not write or mark on this booklet unless told to do so by the examiner.

(CIRCLE ONE)

Name..... Last First Middle ..... Grade..... Boy Girl

School..... City..... Date of Test..... Month Day Year

Examiner..... (.....) Pupil's Age..... Date of Birth..... Month Day Year

INSTRUCTIONS TO PUPILS:

This booklet contains some questions which can be answered YES or NO. Your answers will show what you usually think, how you usually feel, or what you usually do about things. Work as fast as you can without making mistakes.

DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO.

PUBLISHED BY CALIFORNIA TEST BUREAU — 5916 HOLLYWOOD BOULEVARD — LOS ANGELES 28, CALIFORNIA
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9 8 7 6 5 4 3 2 1

INSTRUCTIONS TO PUPILS

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

You are to decide for each question whether the answer is YES or NO and mark it as you are told. The following are two sample questions:

SAMPLES

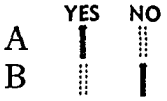
A. Do you have a dog at home? **YES NO**

B. Can you ride a bicycle? **YES NO**

DIRECTIONS FOR MARKING ANSWERS

ON ANSWER SHEETS

Make a heavy black mark under the word YES or NO to show your answer. If you have a dog at home, you would mark under the YES for question A as shown below. If you cannot ride a bicycle, you would mark under the NO for question B as shown below.



Remember, you mark under the word that shows your answer. Now find Samples A and B on your answer sheet and show your answer for each by marking YES or NO. Do it now. Find answer row number 1 on your answer sheet. Now wait until the examiner tells you to begin.

ON TEST BOOKLETS

Draw a circle around the word YES or NO, whichever shows your answer. If you have a dog at home, draw a circle around the word YES in Sample A above; if not, draw a circle around the word NO. Do it now.

If you can ride a bicycle, draw a circle around the word YES in Sample B above; if not, draw a circle around the word NO. Do it now.

Now wait until the examiner tells you to begin.

After the examiner tells you to begin, go right on from one page to another until you have finished the test or are told to stop. Work as fast as you can without making mistakes. Now look at item 1 on page 3. Ready, begin.

SECTION 1 A

1. Do you usually keep at your work until it is done? YES NO
2. Do you usually apologize when you are wrong? YES NO
3. Do you help other boys and girls have a good time at parties? YES NO
4. Do you usually believe what other boys or girls tell you? YES NO
5. Is it easy for you to recite or talk in class? YES NO
6. When you have some free time, do you usually ask your parents or teacher what to do? YES NO
7. Do you usually go to bed on time, even when you wish to stay up? YES NO
8. Is it hard to do your work when someone blames you for something? YES NO
9. Can you often get boys and girls to do what you want them to? YES NO
10. Do your parents or teachers usually need to tell you to do your work? YES NO
11. If you are a boy, do you talk to new girls? If you are a girl, do you talk to new boys ? YES NO
12. Would you rather plan your own work than to have someone else plan it for you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 A
(number right) .....

SECTION 1 B

13. Do your friends generally think that your ideas are good? YES NO
14. Do people often do nice things for you? YES NO
15. Do you wish that your father (or mother) had a better job? YES NO
16. Are your friends and classmates usually interested in the things you do? YES NO
17. Do your classmates seem to think that you are not a good friend? YES NO
18. Do your friends and classmates often want to help you? YES NO
19. Are you sometimes cheated when you trade things? YES NO
20. Do your classmates and friends usually feel that they know more than you do? YES NO
21. Do your folks seem to think that you are doing well? YES NO
22. Can you do most of the things you try? YES NO
23. Do people often think that you cannot do things very well? YES NO
24. Do most of your friends and classmates think you are bright? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 B
(number right) .....

SECTION 1 C

25. Do you feel that your folks boss you too much? YES NO

26. Are you allowed enough time to play? YES NO

27. May you usually bring your friends home when you want to? YES NO

28. Do others usually decide to which parties you may go? YES NO

29. May you usually do what you want to during your spare time? YES NO

30. Are you prevented from doing most of the things you want to? YES NO

31. Do your folks often stop you from going around with your friends? YES NO

32. Do you have a chance to see many new things? YES NO

33. Are you given some spending money? YES NO

34. Do your folks stop you from taking short walks with your friends? YES NO

35. Are you punished for lots of little things? YES NO

36. Do some people try to rule you so much that you don't like it? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 C
(number right) .....

SECTION 1 D

37. Do pets and animals make friends with you easily? YES NO

38. Are you proud of your school? YES NO

39. Do your classmates think you cannot do well in school? YES NO

40. Are you as well and strong as most boys and girls? YES NO

41. Are your cousins, aunts, uncles, or grandparents as nice as those of most of your friends? YES NO

42. Are the members of your family usually good to you? YES NO

43. Do you often think that nobody likes you? YES NO

44. Do you feel that most of your classmates are glad that you are a member of the class? YES NO

45. Do you have just a few friends? YES NO

46. Do you often wish you had some other parents? YES NO

47. Is it hard to find friends who will keep your secrets? YES NO

48. Do the boys and girls usually invite you to their parties? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 D
(number right) .....

SECTION 1 E

49. Have people often been so unfair that you gave up? YES NO

50. Would you rather stay away from most parties? YES NO

51. Does it make you shy to have everyone look at you when you enter a room? YES NO

52. Are you often greatly discouraged about many things that are important to you? YES NO

53. Do your friends or your work often make you worry? YES NO

54. Is your work often so hard that you stop trying? YES NO

55. Are people often so unkind or unfair that it makes you feel bad? YES NO

56. Do your friends or classmates often say or do things that hurt your feelings? YES NO

57. Do people often try to cheat you or do mean things to you? YES NO

58. Are you often with people who have so little interest in you that you feel lonesome? YES NO

59. Are your studies or your life so dull that you often think about many other things? YES NO

60. Are people often mean or unfair to you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 E
(number right) .....

SECTION 1 F

61. Do you often have dizzy spells? YES NO

62. Do you often have bad dreams? YES NO

63. Do you often bite your fingernails? YES NO

64. Do you seem to have more headaches than most children? YES NO

65. Is it hard for you to keep from being restless much of the time? YES NO

66. Do you often find you are not hungry at meal time? YES NO

67. Do you catch cold easily? YES NO

68. Do you often feel tired before noon? YES NO

69. Do you believe that you have more bad dreams than most of the boys and girls? YES NO

70. Do you often feel sick to your stomach? YES NO

71. Do you often have sneezing spells? YES NO

72. Do your eyes hurt often? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 F
(number right) .....

SECTION 2 A

73. Is it all right to cheat in a game when the umpire is not looking? YES NO

74. Is it all right to disobey teachers if you think they are not fair to you? YES NO

75. Should one return things to people who won't return things they borrow? YES NO

76. Is it all right to take things you need if you have no money? YES NO

77. Is it necessary to thank those who have helped you? YES NO

78. Do children need to obey their fathers or mothers even when their friends tell them not to? YES NO

79. If a person finds something, does he have a right to keep it or sell it? YES NO

80. Do boys and girls need to do what their teachers say is right? YES NO

81. Should boys and girls ask their parents for permission to do things? YES NO

82. Should children be nice to people they don't like? YES NO

83. Is it all right for children to cry or whine when their parents keep them home from a show? YES NO

84. When people get sick or are in trouble, is it usually their own fault? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 A
(number right) .....

SECTION 2 B

85. Do you let people know you are right no matter what they say? YES NO

86. Do you try games at parties even if you haven't played them before? YES NO

87. Do you help new pupils to talk to other children? YES NO

88. Does it make you feel angry when you lose in games at parties? YES NO

89. Do you usually help other boys and girls have a good time? YES NO

90. Is it hard for you to talk to people as soon as you meet them? YES NO

91. Do you usually act friendly to people you do not like? YES NO

92. Do you often change your plans in order to help people? YES NO

93. Do you usually forget the names of people you meet? YES NO

94. Do the boys and girls seem to think you are nice to them? YES NO

95. Do you usually keep from showing your temper when you are angry? YES NO

96. Do you talk to new children at school? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 2 B
(number right) .....

SECTION 2 C

97. Do you like to scare or push smaller boys and girls? YES NO

98. Have unfair people often said that you made trouble for them? YES NO

99. Do you often make friends or classmates do things they don't want to? YES NO

100. Is it hard to make people remember how well you can do things? YES NO

101. Do people often act so mean that you have to be nasty to them? YES NO

102. Do you often have to make a "fuss" or "act up" to get what you deserve? YES NO

103. Is anyone at school so mean that you tear, or cut, or break things? YES NO

104. Are people often so unfair that you lose your temper? YES NO

105. Is someone at home so mean that you often have to quarrel? YES NO

106. Do you sometimes need something so much that it is all right to take it? YES NO

107. Do classmates often quarrel with you? YES NO

108. Do people often ask you to do such hard or foolish things that you won't do them? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 C
(number right) .....

SECTION 2 D

109. Do your folks seem to think that you are just as good as they are? YES NO

110. Do you have a hard time because it seems that your folks hardly ever have enough money? YES NO

111. Are you unhappy because your folks do not care about the things you like? YES NO

112. When your folks make you mind are they usually nice to you about it? YES NO

113. Do your folks often claim that you are not as nice to them as you should be? YES NO

114. Do you like both of your parents about the same? YES NO

115. Do you feel that your folks fuss at you instead of helping you? YES NO

116. Do you sometimes feel like running away from home? YES NO

117. Do you try to keep boys and girls away from your home because it isn't as nice as theirs? YES NO

118. Does it seem to you that your folks at home often treat you mean? YES NO

119. Do you feel that no one at home loves you? YES NO

120. Do you feel that too many people at home try to boss you? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 2 D
(number right) .....

SECTION 2 E

121. Do you think that the boys and girls at school like you as well as they should? YES NO

122. Do you think that the children would be happier if the teacher were not so strict? YES NO

123. Is it fun to do nice things for some of the other boys or girls? YES NO

124. Is school work so hard that you are afraid you will fail? YES NO

125. Do your schoolmates seem to think that you are nice to them? YES NO

126. Does it seem to you that some of the teachers "have it in for" pupils? YES NO

127. Do many of the children get along with the teacher much better than you do? YES NO

128. Would you like to stay home from school a lot if it were right to do so? YES NO

129. Are most of the boys and girls at school so bad that you try to stay away from them? YES NO

130. Have you found that some of the teachers do not like to be with the boys and girls? YES NO

131. Do many of the other boys or girls claim that they play games more fairly than you do? YES NO

132. Are the boys and girls at school usually nice to you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 E
(number right) .....

SECTION 2 F

133. Do you visit many of the interesting places near where you live? YES NO

134. Do you think there are too few interesting places near your home? YES NO

135. Do you sometimes do things to make the place in which you live look nicer? YES NO

136. Do you ever help clean up things near your home? YES NO

137. Do you take good care of your own pets or help with other people's pets? YES NO

138. Do you sometimes help other people? YES NO

139. Do you try to get your friends to obey the laws? YES NO

140. Do you help children keep away from places where they might get sick? YES NO

141. Do you dislike many of the people who live near your home? YES NO

142. Is it all right to do what you please if the police are not around? YES NO

143. Does it make you glad to see the people living near you get along fine? YES NO

144. Would you like to have things look better around your home? YES NO

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Section 2 F
(number right) .....

Elementary • GRADES 4-5-6-7-8 • form BB

California Test of Personality

1953 Revision

Devised by

LOUIS P. THORPE, WILLIS W. CLARK, AND ERNEST W. TIEGS

Do not write or mark on this booklet unless told to do so by the examiner.

(CIRCLE ONE)

Name..... Grade..... Boy Girl
Last First Middle

School..... City..... Date of Test.....
Month Day Year

Examiner..... ( ) Pupil's Age..... Date of Birth.....
Month Day Year

INSTRUCTIONS TO PUPILS:

This booklet contains some questions which can be answered YES or NO. Your answers will show what you usually think, how you usually feel, or what you usually do about things. Work as fast as you can without making mistakes.

DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO.

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9 8 7 6 5 4 3 2 1

INSTRUCTIONS TO PUPILS

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

You are to decide for each question whether the answer is YES or NO and mark it as you are told. The following are two sample questions:

SAMPLES

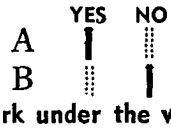
A. Do you have a dog at home? YES NO

B. Can you ride a bicycle? YES NO

DIRECTIONS FOR MARKING ANSWERS

ON ANSWER SHEETS

Make a heavy black mark under the word YES or NO to show your answer. If you have a dog at home, you would mark under the YES for question A as shown below. If you cannot ride a bicycle, you would mark under the NO for question B as shown below.



Remember, you mark under the word that shows your answer. Now find Samples A and B on your answer sheet and show your answer for each by marking YES or NO. Do it now. Find answer row number 1 on your answer sheet. Now wait until the examiner tells you to begin.

ON TEST BOOKLETS

Draw a circle around the word YES or NO, whichever shows your answer. If you have a dog at home, draw a circle around the word YES in Sample A above; if not, draw a circle around the word NO. Do it now.

If you can ride a bicycle, draw a circle around the word YES in Sample B above; if not, draw a circle around the word NO. Do it now.

Now wait until the examiner tells you to begin.

After the examiner tells you to begin, go right on from one page to another until you have finished the test or are told to stop. Work as fast as you can without making mistakes. Now look at item 1 on page 3. Ready, begin.

SECTION 1 A

1. Would you rather earn your own money than have your parents give it to you? YES NO

2. Do you feel that you can do well at school when things are not going right at home? YES NO

3. Do you like to meet new people or introduce them to others? YES NO

4. Do you usually do what is right even when you are angry? YES NO

5. Are you often the leader when playing with other children? YES NO

6. Are you afraid of some of the older boys and girls? YES NO

7. Do you usually keep at your work even when other children want you to stop? YES NO

8. Is it usually someone else's fault when things go wrong? YES NO

9. Can you play alone happily when there is no one else to play with? YES NO

10. Do you get excited when things go wrong? YES NO

11. Do you usually keep at your work until it is done? YES NO

12. Can you usually keep other children from being mean to you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 A
(number right) .....

SECTION 1 B

13. Are other boys or girls usually interested in what you are doing? YES NO

14. Do your friends seem to think that you do things well? YES NO

15. Do you feel bad because you don't have good times at parties? YES NO

16. Do people seem to think that you will do well in life? YES NO

17. Do you often feel bad because people do not notice your good points? YES NO

18. Do the boys and girls notice your ability as much as they should? YES NO

19. Do the other pupils often forget to ask you to help them? YES NO

20. Do you often feel that the other children are better than you are? YES NO

21. Are you invited to the parties that you would like to attend? YES NO

22. Do people seem to enjoy having you with them? YES NO

23. Do you feel that many of the boys and girls do not like you? YES NO

24. Do the other pupils do nice things for you as often as they should? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 B
(number right) .....

SECTION 1 C

25. Would you like to do things that older people think you should not? YES NO

26. Are you allowed to help plan your own affairs? YES NO

27. May you usually choose your own friends? YES NO

28. Are the rules in your grade better suited to younger children? YES NO

29. Are you allowed enough time for play? YES NO

30. Are you having a hard time because someone tries to boss you? YES NO

31. Are you troubled because you have to obey too many rules? YES NO

32. Do you have as many rights as most other boys and girls? YES NO

33. Are you allowed to do enough of the things you like? YES NO

34. Do you often have to stand up for your rights? YES NO

35. Are you kept away from too many interesting places? YES NO

36. Do people try to boss you too much? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 C
(number right) .....

SECTION 1 D

37. Do other children like to have you go around with them? YES NO

38. Do your friends usually help you when you are in trouble? YES NO

39. Do you feel that many children you go around with are not real friends? YES NO

40. Are you usually asked to the parties where children have the most fun? YES NO

41. Do the other children usually like the things you are doing? YES NO

42. Are you glad you live in the place you do? YES NO

43. Do you feel that many of the boys and girls do not pay enough attention to you? YES NO

44. Do many of the children at school seem to like you? YES NO

45. Do you feel bad because you have so few friends? YES NO

46. Are things at home often so bad that you would like to leave when you get a little older? YES NO

47. Do your friends have better times at home than you do? YES NO

48. Do the other children seem to like to talk to you? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 D
(number right) .....

SECTION 1 E

49. Is it hard for you to talk when you are with people? YES NO

50. Do you often feel like giving up when people think you are not doing well? YES NO

51. Do you often meet people who are so mean that you hate them? YES NO

52. Do people think you are too careful in choosing friends? YES NO

53. Does it usually hurt your feelings when people talk about you? YES NO

54. Do you usually feel shy when you are around people? YES NO

55. Do your friends seem to think that you say mean things about them? YES NO

56. Do your friends think that your feelings are too easily hurt? YES NO

57. Could you easily hate people you don't like? YES NO

58. Do you believe that you worry more than most children? YES NO

59. Is it hard for you to forget the mistakes you make? YES NO

60. Do you often think of many things that are dangerous? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 E
(number right) .....

SECTION 1 F

61. Do your eyes seem to hurt more than other children's eyes do? YES NO

62. Do you sometimes feel as if your muscles are jerking? YES NO

63. Do you sometimes feel as if you are going to faint? YES NO

64. Do you often have a headache? YES NO

65. Do you often feel tired soon after you get up? YES NO

66. Are you often afraid of things without knowing why? YES NO

67. Do some of your friends seem to think that you are too restless? YES NO

68. Do you seem to have more aches and pains than other children? YES NO

69. Do you often tap with your fingers on a table or desk? YES NO

70. Do you often find that you are not hungry at meal time? YES NO

71. Does it usually take you a long time to go to sleep at night? YES NO

72. Do you get too restless when you have to wait for someone? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 F
(number right) .....

SECTION 2 A

73. Is it all right to talk back to teachers who seem to have favorites? YES NO

74. Is it all right to look down on people who do not know very much? YES NO

75. Do boys and girls need to be careful of the property of rich people? YES NO

76. Should a person try to get even with someone who has been unfair? YES NO

77. Is it necessary to be nice to people who have a different religion? YES NO

78. Do people really need to know what is right and what is wrong? YES NO

79. Is it all right to break promises when you wish you had not made them? YES NO

80. Is it necessary to be fair to people one does not like? YES NO

81. Do children need to be nice to foreign people? YES NO

82. Should children live up to the school rules? YES NO

83. Should boys and girls who get low marks be kept out of the fun at school? YES NO

84. Should one be nicer to pupils who are rich than to others? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 A
(number right) .....

SECTION 2 B

85. Should one make a practice of telling others about the mistakes they make? YES NO

86. When people make you angry do you usually keep it to yourself? YES NO

87. Would you rather do nice things for your friends than have them do things for you? YES NO

88. Should one tell others about their bad points? YES NO

89. Do you like to notice the things your friends are doing? YES NO

90. Do you usually dislike doing the things your friends are doing? YES NO

91. Do you try to keep from bossing children who are smaller than you? YES NO

92. Is it easy for you to admit when you are wrong? YES NO

93. Do you usually argue with people who do not agree with you? YES NO

94. Do you often say nice things to people when they do well? YES NO

95. Do you get along well with the other children? YES NO

96. Do you like to speak or sing in front of other people? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 2 B
(number right) .....

SECTION 2 C

97. Are some people so mean that you have to be unfair to them? YES NO

98. Are the tests at school often so hard or unfair that it is all right to cheat? YES NO

99. Are many people so stubborn that they make you quarrel with them? YES NO

100. Are things sometimes so bad at school that you stay away? YES NO

101. Are some of the boys and girls so "stuck-up" that you have to get even with them? YES NO

102. Do you have to watch people much of the time so they won't take advantage of you? YES NO

103. Do you often have to get even with people who haven't treated you right? YES NO

104. Do people often treat you so mean that you have to use bad language? YES NO

105. Do many people make you feel like starting a fight with them? YES NO

106. Do you often have to get even with people who talk about you behind your back? YES NO

107. Do many people seem to hate you without good reason? YES NO

108. Are the younger children often so mean that you have to get tough to handle them? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 C
(number right) .....

SECTION 2 D

109. Are you made to feel that you are as good as anyone else in your family? YES NO

110. Do your folks go out so much that you do not have enough good times at home? YES NO

111. Do many of your friends stay away from your home? YES NO

112. Do you feel that your folks let you play enough? YES NO

113. Do people at home often say bad things about you? YES NO

114. Do the people at home usually talk things over with you? YES NO

115. Does someone in your family quarrel with you too much? YES NO

116. Does someone at home pick on you much of the time? YES NO

117. Have you often felt that your folks thought that you would not amount to much? YES NO

118. Would you prefer that school lasted longer, so you would not need to be home so much? YES NO

119. Is it hard to talk things over with your folks because they don't understand you? YES NO

120. Do most of your friends seem to have better times at home than you do? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 2 D
(number right) .....

SECTION 2 E

121. Do you like most of the things you have to do in school? YES NO

122. Do you like to stay away from pupils of the other sex at school? YES NO

123. Do you think that the teachers like you as well as they like other children? YES NO

124. Do you often feel bad because you get low marks in school? YES NO

125. Do your classmates choose you as often as they should when they play games? YES NO

126. Do the boys and girls at school often say things that make you feel bad? YES NO

127. Do you feel that any of the teachers are mean to children? YES NO

128. Would you like it better if you could stay at home instead of going to school? YES NO

129. Does someone at school make you feel that you are not very bright? YES NO

130. Does it bother you to have your teacher tell you what you should do? YES NO

131. Do many of the children at school try to keep away from you? YES NO

132. Do the boys and girls seem to think that you get along well with them at school? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 E
(number right) .....

SECTION 2 F

133. Do you try to get your friends to obey the laws? YES NO

134. Does it seem to you that your neighbors are not interesting people? YES NO

135. Do you usually try to be nice to people who are not the same color or race as you are? YES NO

136. Are there lots of friendly boys and girls for you to play with near your home? YES NO

137. Do you have enough time for games in your neighborhood? YES NO

138. Do you often play with both boys and girls who live near your home? YES NO

139. Do you have many good times near where you live? YES NO

140. Do you know some of the people near your home well enough to visit them often? YES NO

141. Are some of the people who live near you so unkind that you don't like them? YES NO

142. Do some of the people near your home look down on you because you haven't much money? YES NO

143. Do you feel that most of the people near your home are worth knowing? YES NO

144. Does it seem to you that the people near your home quarrel a great deal? YES NO

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Section 2 F
(number right) .....