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Verbal Conditioning with Vicarious Reinforcement as Related to Peer Attitudes in Grade-School Children

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VERBAL CONDITIONING WITH VICARIOUS REINFORCEMENT AS RELATED
TO PEER ATTITUDES IN GRADE-SCHOOL CHILDREN

A Thesis

Presented to

the Graduate Faculty

Central Washington State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Margaret McCutcheon Lauterbach

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APPROVED FOR THE GRADUATE FACULTY

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ABSTRACT

The purpose of the present study was to determine the effects of peer attitudes toward performers in a verbal conditioning experiment using vicarious reinforcement, and to determine whether birth order or need for social approval had any effect on conditioning. Fifth grade and sixth grade students served as subjects, with performers (those to be directly reinforced) from the same grades as the observers.

For conditioning, the Taffel technique was used. Performers were found not to evince conditioning effects, but observers of negatively-regarded performers apparently did "learn" significantly more by observing conditioning (and being vicariously reinforced) than observers of positively-regarded performers.

No significant relationships were found in need for social approval (measured by a simplified Crowne-Marlowe Social Desirability Test) and age or sex, although contrary to the hypothesis, first-borns seemed to be more conditionable by an adult conditioner than last-borns. Some significance was detected in that area.

Sixth grade females (particularly last-borns) evidenced a generally higher need for social approval than females of the fifth grade, although only the differences between the last-borns of both grades in social desirability test scores reached a level of significance.

The performers in the conditioning sequence were generally not "conditioned"; i.e., the mean change of counted pronouns did not reach significance in comparing the first trials (operant levels) with the post-conditioning sequences.

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CHAPTER I

INTRODUCTION

Man's behavior sometimes changes on a mass scale. Large groups of people may, within a relatively short period of time, significantly change their mode of attire, their manner and the substance of ingestion, their recreational and occupational forms, their preferred tools and weapons, or their relationships toward societal institutions.

Why do these changes occur? Can such changes be manipulated?

Psychologists who have experimentally manipulated behavior have usually followed similar courses: in a given situation, a subject is reinforced for a certain response. When those responses become regular and predictable rather than random and unpredictable, the subject is deemed to have "learned" (Lawson, 1960).

In those experiments, the reinforcement, whether it is given for each occurrence of the specified response or for only some of the responses, is given directly to the subject. However, direct reinforcement may not be necessary to learning, and if many people "learn" or change their behavior in a similar direction almost at once, reinforcement often seems to be absent.

That humans do not always learn in the presence of distinguishable reinforcement is rather well-known. Where we appear to have learned without distinguishable reinforcement, explanations include

"response generalization," "self-reinforcement," operation of a "covert mediational response," "imitation" learned by previous reinforcement, or "vicarious reinforcement." (Perhaps some of these terms mean the same thing.)

Much behavior, according to Skinner (1953), Miller and Dollard (1941), and others, is imitative. They also posited that imitation is learned. Skinner maintained that organisms (including humans) develop imitative repertoires via reinforced responses. In his discussion of imitative behavior, Skinner indicated organisms imitate one another only when "specific discriminative reinforcement has taken place" (120). In other words, imitative behavior is learned. For example, he pointed out that if a "pigeon is scratching in a leaf-strewn field, this is an occasion upon which another pigeon is likely to be reinforced for similar behavior" (120). On the human level, he suggested the use of a vocabulary similar to that used by one's peer group is more likely to be reinforced than if an unfamiliar vocabulary is used.

Miller and Dollard (1941) also followed the reinforcement theory of learning to imitate. They, however, distinguished between two types of imitation: matched-dependent behavior, in which the "leader is able to read the relevant environmental cues, but the follower is not; the latter must depend upon the leader for the signal as to what act is to be performed and where and when" (11), and copying, where the "copier must slowly bring his response to approximate that of a model and must know,

when he has done so, that his act is an acceptable reproduction of the model act" (11). In matched-dependent behavior, according to Miller and Dollard, the follower does not need to be aware that he is matching the act of the leader.

Miller and Dollard and Skinner used examples of how much greater group reinforcement can be (than individual reinforcement) by achievement analogies such as several people's pulling together on a rope, moving something at the other end which could not be moved by one along.

A number of alternative explanations have been proffered by investigators to explain group learning. Hull (1964) posited the "Law of Reciprocal Reinforcement" in his Theorem 133 (337), which stated that group members reinforce one another (or that individuals reinforce one another in all social transactions). Lewis and Duncan (1958) suggested self-reinforcement is accomplished via a mediational response mechanism. Social psychologists such as Goffman (1964) have suggested that conformity (of behavior) within a group is demanded by the group for continued membership; certain types of non-conformity can be cause for being ousted from the group, an event which would presumably be punishing to the individual.

Further evidence of direct but subtle reinforcement was supplied by Greenspoon's (1955) now-famous and rather controversial experiment which pointed to a significant social reinforcement--verbal approval.

In that experiment, he found that "mmm-hummm" in conjunction with a plural noun increased the frequency of articulated plural nouns. While his study is open to question on a number of counts, other experiments such as some conducted by Crowne and Marlowe (1964) and others have also obtained conditioning in humans, with verbal reinforcement of certain classes of words.

Hull (1964) also acknowledged the reinforcing effect of verbal approval: " . . . the passing of a favorable moral judgment (verbally) becomes a secondary positive reinforcing agent fostering desirable action" (337).

It is presumably these social reinforcers in addition to a delayed receipt of grades that are the "reinforcers" for educative learning. But it is obvious that an instructor can not and does not reinforce each person's overt or covert response each time that individual learns.

Investigators such as Berger (1959), Kanfer and Marston (1963), and Crowne and Marlow (1964) have suggested that vicarious reinforcements may be an explanation for some learning where reinforcement is not readily distinguishable.

Vicarious reinforcement is reinforcement that is not directly relevant to the observer, although the observer is aware that it has been administered to another of his species (and presumably the reinforcement was of a nature which would tend to be followed by an increased frequency of that response). Berger (1959) defined the effect of vicarious

reinforcement as "an increase in response strength for an observer, as a function of perceiving that a performer has been reinforced" (2409), where the reinforcement was irrelevant to the observer.

Vicarious reinforcement is distinguishable from vicarious experience; the recipient of the reinforcement is the most important factor in vicarious reinforcement experiments. Vicarious experience experiments may include direct or vicarious reinforcement. Lewis and Duncan's (1958) study is one example. In that experiment, direct reinforcement was sometimes given to the subjects who were having a "vicarious experience." The investigators used slot machines which dispensed discs to performers, and one pair of groups (out of five pairs) watched performers win, but never themselves received a "payoff." This group not only was having a "vicarious experience," but also was receiving vicarious reinforcement according to the above definition. Another pair of "vicarious experience" groups observed performers, and when the performers won, the observers were also given discs. In other words, they received direct reinforcement for the vicarious experiences. These latter groups proved to be as "effective as the actual playing" (324), and played somewhat longer than the control group, but insignificantly longer than the control group. The investigators explained the results in terms of operation of a mediational response. The experimenters also found that the "watch only" group against control and "explain only" group against control gave no significant main effects, but there was a

significant interaction at the .05 level, "due to the effect that percentage of reward had on the control group but not on the experimental groups" [sic] (324).

As previously noted, it is difficult to design a vicarious reinforcement experiment that does not also include vicarious experience for the subjects, since the subjects must have some perception that a performer has been reinforced for a response. Most of the following experiments necessarily include vicarious experience on the part of the subjects, but the crucial aspects are, in most of these experiments, the subject's relationship to reinforcement.

Kanfer and Marston's (1963) study, using verbal reinforcement contrasted vicarious reinforcement with direct reinforcement, with both and with neither. They found the control groups failed to learn (no reinforcement of either kind), and vicarious reinforcement "resulted in significantly more learning and significantly greater learning increments over blocks" (294). They also found that the addition of direct reinforcement did not improve performance significantly, nor was there a significant difference in performance between direct reinforcement and vicarious reinforcement.

Berger's (1959) study, involving incidental learning of nonsense syllables through vicarious reinforcement, actually involved three experiments, two of which are pertinent to this discussion. In the first, the

performer was verbally reinforced for certain nonsense syllables (while the performer thought he was a subject in an extrasensory perception experiment, trying to guess what numbers the experimenter was thinking of when the subject [performer] read the nonsense syllable). In that experiment, the observer evidenced the effects of vicarious reinforcement by remembering more "right" syllables than "wrong" ones; the performer, however, recalled an equal number of "right" and "wrong" syllables. (Here, however, the "observer" was reading the syllables to the "performer" during the experiment, and presumably had a chance to rehearse them.) In the other experiment, Berger reported the experiment was replicated with a "cover story change" and reinforcement effects were found in both the performer's and observer's recalling correct items.

In a study more similar to this experiment, Crowne and Marlowe (1964) used vicarious verbal reinforcement with the Taffel technique (where the subject is required to make up a sentence using one of six given pronouns and a given verb), in an effort to discover the relationship of the level of need for approval and conditionability. To determine the level of need for approval, they used their own social desirability test, and found that higher need for approval subjects were more conditionable, as evidenced by greater frequency of using previously reinforced (vicariously) pronouns ("I" and "we").

They found "only high need for approval subjects show a significant conditioning effect, and they do so only in those conditions where social reward is offered" (69). Of the subjects selected for vicarious reinforcement, six were apparently "aware" although the level of conditioning shown by these subjects did not differ "at all" (68) from that of the unaware subjects receiving the same reinforcement. They also found the act of listening to the confederate, who produced exactly the same responses, did not lead to any conditioning in the absence of vicarious reinforcement.

Contrary to Crowne and Marlowe's findings, Haimson (1962) found the more conditionable subjects were "oriented more towards independence and non-conformity than towards dependency and conformity" (4421). His study was a verbal conditioning experiment which used direct rather than vicarious reinforcement. He also found that later-borns were more responsive to conditioning than first-borns.

In summary, possible explanations for behavioral changes or learning exhibited by several people within a short period of time include imitation (the process of which is learned); reinforcement of the entire group by achievement of a goal; reciprocal reinforcement within the group; self-reinforcement via a mediational response; reinforcement by the group; verbal reinforcement; or the effects of vicarious reinforcement. In the review of experiments on conditioning, it was found there was some disagreement on the influence of need for approval and

conditionability, and some suggestion that birth order influences conditionability.

The present experiment is similar to the experiment conducted by Crowne and Marlowe (1964). The Taffel technique, in which a subject is required to make up sentences from a given verb and one of six given personal pronouns, was used for determining operant levels, conditioning, and post-conditioning sequences. Vicarious reinforcement was given in the form of verbal approval to one member of each group, in the presence of other members of the group, following certain responses. In addition, the Crowne-Marlowe Social Desirability Test was modified for comprehension by 5th and 6th grade students and administered to them to determine whether relationships exist between a need for social approval and conditioning effects.

In this study, however, the groups and performers were selected on a peer attitude basis, an aspect the Crowne and Marlowe study did not have. Groups were formed in this experiment on the basis of whether or not members of the group who were to observe administration of direct reinforcement liked or disliked the designated "performer" for each group. In this way it was thought to give some measure of whether group attitudes toward the performer would have an effect on their conditioning, and whether these attitudes would have any influence on the effectiveness of vicarious reinforcement. Data on birth order of the subjects

were also obtained to determine its influence, if any, on either conditioning or the need for social approval.

It was hypothesized that (a) if subjects are verbally reinforced for choosing particular pronouns in a sentence completion task, they will tend to select more often those pronouns for subsequent responses; (b) if well-liked subjects are verbally reinforced for making certain verbal responses in the presence of their friends, the friends will tend to increase their frequency of similar responses without direct reinforcement (i.e., they will be vicariously reinforced); (c) if subjects have high needs for approval, then verbal conditioning (by direct or vicarious reinforcement), will raise their frequencies of the conditioned response higher than subjects who have low needs for approval; and (d) if subjects who have older siblings are verbally conditioned (by direct or vicarious reinforcement), they will be more responsive to conditioning than first-born subjects.

CHAPTER II

METHOD

Subjects

The subjects were members of the 5th and 6th grade classes at Hebeler Elementary School in Ellensburg, Washington. Within each grade, two boys and two girls who were regarded by their teachers as being popular or unpopular with a number of peers were designated for conditioning via direct verbal reinforcement. Then, from among the lists of peers who regarded the selected "negative performers" unfavorably, four were chosen at random (although purposefully including both sexes in each group) for each group. A similar method of grouping was followed for formation of "positive groups," i.e., comprised of students who regarded the selected performer favorably. All subjects acted as their own control.

Apparatus

Apparatus consisted of cardboard screens, to conceal experimenters (Es) from subjects' (Ss) views, to avoid Es' inadvertently reinforcing responses by gesture. These screens were constructed by cutting three sides from large cardboard boxes, which were placed on end, the bottoms of the boxes facing the Ss. Apertures in the bottoms of the boxes were sealed with masking tape, as were all printed words on the boxes.

A series of 20 cards were prepared, each with the past tense of a simple verb printed in the center of each card, and a list of six personal pronouns (I, we, you, they, he, and she) printed across the top of each card. The order of the personal pronouns was randomly changed from card to card, although a verb remained in the center of each card. On seven cards, the first pronoun was "I" or "we," approximately the correct frequency. In addition, for the post-conditioning sequence, a series of 20 cards was prepared which again contained a simple verb in the center and the same pronouns in random order across the top. For the conditioning sequence, a series of similar cards were prepared (20 in number), although here only one pronoun was listed at the top of the card. "I" and "we" occurred 12 times.

Score sheets were prepared for the operant level and post-conditioning sequences for all Ss, and score sheets were prepared for the conditioning sequences for all performers. In addition, standardized instruction sheets were prepared for experimenters, for experimenters to read to subjects prior to Series A (operant level sequence) and Series B (post-conditioning sequence) of the cards, and for the conditioner E to read to Ss who were to be directly reinforced and vicariously reinforced.

The Crowne-Marlowe Social Desirability Test was altered slightly (and one question omitted since it referred to voting habits) and prepared with a cover sheet of instruction, questions relating to siblings, and birth order of the test-taker.

Procedure

Ss were taken, five at a time (in groups), to different parts of the school auditorium, where tables had been placed for experimental apparatus. Five Es, working simultaneously at tables placed some distance apart to avoid Ss' overhearing other responses, asked Ss to make up simple sentences using the first 20 verb-pronoun cards (after reading standardized instructions to do so). Es were previously given an instruction sheet cautioning them against emitting any reinforcing response while the Ss were responding or afterward. While Es read the instruction to the Ss, they showed Ss a sample card (in which animal names were substituted for the pronouns), and E made up a sentence using those words. Es instructed Ss to first select a word from the top of the card, then to put that word with the word in the middle of the card to make up a sentence. Es informed Ss that the order of the words would change, but they would always be the same words. They were told they could use the same pronoun as many times as they wished, or they could change them from card to card. They were also told to make up short sentences if they liked, and to work as quickly as they could. If there were no questions, they were then asked, before they were shown any of the cards, to remain in their seats until someone came to get them. This obviated Es' having to communicate with the Ss following the sentence completions where they would be in danger of inadvertently reinforcing any responses on a delay basis. Es used a separate score sheet for

each S, on which they entered the name of each S, their own name, and the pronouns selected by the Ss. The verbs were printed on the score sheets in the same order they appeared on the cards to avoid error in scoring. The score sheet was hidden from Ss' views.

Following completion of the first series of 20 sentence completions (Series A), each E retained the score sheet for the post-conditioning sequence. The first sequence gave an operant level of pronoun usage for each S. Following the Series A sequence, another E led the Ss behind the stage curtain in the auditorium, where a table had been set up in the center of the stage, and approximately six feet away, four chairs were arranged for the observers.

This E "selected" a performer to go to the table in the center of the stage, and the other four members of the group were asked to sit in the other chairs. Another E (conditioner) was seated at the table, also with a screen-box concealing the scorecard. The conditionee was asked to make up short simple sentences using the words on each card to start each sentence. The performers were told, also, there would be only one word at the top of each card, and they were to use that word.

The observers were asked to sit quietly and watch the performer, although he or she was never designated as such to the other Ss. The E-conditioner used a score sheet listing both the pronouns and verbs in the order in which the S would see them, to alert her to the order of the pronouns. Each time the conditionee began a sentence using "I" or "we,"

E nodded and said "good," or "ummm-hmmm." Following this series of 20 sentence completions, Ss were taken back to the original Es for completion of the second series of sentence completions (Series B), with a new set of standardized instructions read to Ss, and scoring as in the first series of sentence completions.

The second series of standardized instructions read by each E verified the S's name, and E then told S to do the same thing as he did before, with new words (although only the verbs were changed). Again, Ss were asked to remain in their seats until all were finished. Instructions to Es also cautioned them against reinforcing any responses on the second series of pronouns-verbs, or to comment on their performances.

Students of the 6th grade were the Ss in the morning of May 4, 1966, and students in the 5th grade were the afternoon Ss on the same day. Although the bloc of four Es working with the Ss to obtain an operant level and a post-conditioning level of pronoun usage were different in the afternoon from those working in the morning, the E who performed the conditioning was the same for both classes, as was the E who routed the Ss from one part of the experiment to another.

Following completion of this part of the experiment by all members of each class, the social desirability test was administered to each class in its own classroom. There Ss were asked to write their names on the tests and Ss were assured that the information would be confidential and that the tests would not "count" in school. They were

asked to list how many brothers and sisters were older than they were and how many were younger. They were also asked, in printed instructions, to look at each sentence carefully, and "decide how each applies to you." "If you think a sentence does apply to you or the way you feel, circle T (true) with your pencil. If you think that it does not apply to you or the way you feel, circle F (false)." An example was given, and they were asked to answer all questions. They were told if they were not sure of an answer, they could guess. They were also told that if they could not read a question or did not understand the words, to raise their hands.

The test had been modified on the advice of the teachers, and there were few questions. Some of the 5th grade students, however, did question what "practice what you preach" meant (see Appendix).

The tests were later scored by counting the "misses" and subtracting from the number marked "correctly." Thus a person with a low score would have a relatively low need for social approval. A few questions were omitted by Ss, and in scoring for purposes of all data except in the Appendix, the omitted questions did not count for or against the Ss. For computation in the Appendix, omitted questions counted as "misses."

CHAPTER III

RESULTS

Statistics used to describe the data were one-tailed t tests.

All performer Ss directly reinforced for using "I" and "we" did not increase their usage of those pronouns following conditioning; rather use of those pronouns declined in three cases, stayed the same in two cases, and increased in only three cases. The increases represented only one added pronoun in each of the latter cases. The mean change was -6.25.

No significant differences were detected in comparing conditionability of positive performers of both grades with negative performers of both grades, negative with positive groups in the 6th grade, or negative with positive groups in the 5th grade. See Table 1. Thus hypothesis (a) [If subjects are verbally reinforced for choosing particular pronouns in a sentence completion task, they will tend to select more often that pronoun for subsequent responses] was not sustained by the data.

With regard to hypothesis (b) [if well-liked subjects are verbally reinforced for making certain verbal responses in the presence of their friends, the friends will tend to increase their frequency of similar responses without direct reinforcement (i.e., they will be vicariously reinforced)], data indicated an opposite hypothesis would have been

TABLE 1.

CHANGE IN COUNTED PRONOUN USAGE FOLLOWING CONDITIONING
ANALYZED BY PEER ATTITUDES TOWARD PERFORMERS

Groups	t	d.f.	P
Both grades: negative performers ($M = -1$) compared to positive performers ($M = -.250$)	.547	6	>.30
Both grades: negatively-led groups ($M = 1.4375$) compared to positively-led ($M = -1$)	1.965	30	<.05**
6th grade: negative groups ($M = .125$) compared to positive groups ($M = -1.25$)	1.011	14	>.15
5th grade: negative ($M = 2.75$) groups com- pared to positive groups ($M = 1.75$)	1.690	14	>.05
Both grades: <u>Ss</u> under male performers ($M = -.25$) compared to <u>Ss</u> under female performers ($M = .6875$)	.715	30	>.20
5th grade: <u>Ss</u> under male performers ($M = .5$) compared to <u>Ss</u> under female performers ($M = 1.5$)	.442	14	>.30
6th grade: <u>Ss</u> under male performers ($M = -1$) compared to <u>Ss</u> under female performers ($M = 1.125$)	.627	14	>.25
Both grades: <u>Ss</u> under male positive per- formers ($M = -1.25$) compared to <u>Ss</u> under male negative ($M = .75$)	.574	14	>.25
6th grade: <u>Ss</u> under male positive performers ($M = -2.25$) compared to <u>Ss</u> under male negative ($M = .25$)	1.420	6	>.10
5th grade: <u>Ss</u> under male positive performers ($M = -.25$) compared to <u>Ss</u> under male negative ($M = 1.25$)	.429	6	>.30
Both grades: <u>Ss</u> under female positive per- formers ($M = -.75$) compared to <u>Ss</u> under female negative ($M = 2.125$)	1.691	14	>.05

TABLE 1 (continued)

Groups	t	d.f.	P
6th grade: <u>Ss</u> under female positive performers ($M = -.25$) compared to <u>Ss</u> under female negative performers ($M = 0$)	.113	6	>.45
5th grade: <u>Ss</u> under female negative performers ($M = 4.25$) compared to <u>Ss</u> under female positive ($M = -1.25$)	2.226	6	<.05**
Both grades: males under male positive performers ($M = -.6$) compared to males under male negative performers ($M = 4.25$)	2.204	7	<.05**
Both grades: males under male negative performers ($M = 4.25$) compared to males under female negative performers ($M = 1.25$)	1.704	6	>.05
Males under female negative performers ($M = 1.25$) compared to males under female positive performers ($M = .5$)	.677	6	>.25
Males under male positive performers ($M = -6$) compared to males under female positive performers ($M = .5$)	.497	7	>.30
Females under female negative performers ($M = 3$) compared to females under female positive performers ($M = -2$)	1.948	6	<.05**
Females under male positive performers ($M = -2.333$) compared to females under female positive performers ($M = -2$)	.254	5	>.40
Females under female negative performers ($M = 3$) compared to females under male negative performers ($M = -2.75$)	1.860	6	>.05
Females under male positive performers ($M = -2.333$) compared to females under male negative performers ($M = -2.75$)	.311	5	>.35

**Indicates statistical significance of probability for a one-tailed t test.

sustained. Groups which had observed disliked performers had a significantly higher increment of usage of the counted pronouns ("I" and "we") following the conditioning sequence than those who had observed conditioning of "liked" performers. This statistic, calculated over both grades together, was significant beyond .05 P. Likewise, 5th grade females who had observed conditioning of "disliked" performers (of both sexes) also differed significantly from the 5th grade females who had observed conditioning of negatively-regarded peer males than if they had observed conditioning of positively-regarded peer males. Similarly, females under female negative performers increased their usage of counted pronouns significantly more than those females under positive female performers, who actually decreased their usage. These significant differences had a probability of occurring by chance less than 5 per cent of the time.

Regarding hypothesis (c) [if subjects have high needs for approval, then verbal conditioning (by direct or vicarious reinforcement) will raise their frequency of the conditioned response higher than subjects who have low needs for approval], analysis of the data indicated that those with high needs for approval did not reveal more susceptibility to conditioning than those with low needs for approval. Scores on the modified Crowne-Marlowe Social Desirability Test ranged from 6 to 29, with an overall mean of 15.625, and a median of 16. Comparing conditioning scores of those at the first quartile on the social desirability

test scores with those at the fourth quartile reveals an insignificant difference ($t = .738$, with 18 d.f., $P > .20$).

With regard to birth order and conditioning [hypothesis (d)], first-borns of both grades together used the counted pronouns significantly more than the last-borns of both grades together, with a probability of t less than .05. This statistic, and the following ones relating to birth order and conditioning, include the scores of the performers. See Table 2.

Significance was also found in frequency of usage of counted pronouns comparing the first-born and last-born 5th grade students, with a probability of this t less than .005, although no significant difference was found in the same comparison in the 6th grade. The first-born students of the 5th grade also increased their use of the counted pronoun significantly more than the middle-born students of that grade ($P < .025$). Significance was not found in comparing first-born children with middle siblings of the 6th grade or of both grades together.

In comparing the middle-born with the last-born in terms of conditioning effects, a significant difference was detected only within the 6th grade, where the probability was less than .05. The differences were insignificant in comparing middle with last borns in both grades together, and within the 5th grade.

Analysis of the social desirability scores alone revealed no significant differences between the 5th grade students and the 6th grade

TABLE 2.

PRONOUN USAGE CHANGES FOLLOWING CONDITIONING*
ANALYZED WITH REGARD TO BIRTH ORDER

Groups	t	d.f.	P
Both grades: first-borns (M = +1.6923) compared to last-borns (M = -1)	1.882	24	<.05**
5th grade: first-borns (M = +4.1666) compared to last-borns (M = -.4444)	3.602	13	<.005**
6th grade: first-borns (M = -.4285) compared to last-borns (M = -2.25)	1.029	9	>.15
Both grades: first-borns (M = 1.6923) compared to middle (M = -.5)	1.6119	25	>.05
5th grade: first-borns (M = 4.1666) compared to middle (M = -1.6)	2.453	9	<.025**
6th grade: first-borns (M = -.4285) compared to middle (M = .1111)	.513	13	>.30
Both grades: middle (M = -.5) compared to last-borns (M = -1)	.515	25	>.30
5th grade: middle (M = -1.6) compared to last-borns (M = -.4444)	.909	12	>.15
6th grade: middle (M = .1111) compared to last-borns (M = -2.25)	2.071	11	<.05**

*All data include scores of performers.

**Indicates statistically significant probabilities on a one-tailed t test.

students, between the 5th grade males and the 6th grade males, between the 5th grade females and the 6th grade females, between the 6th grade males and the 6th grade females, between the 5th grade males and the 5th grade females, or between the negative performers and the positive performers (see Table 3).

Although not a part of the original hypotheses, the possibility of a relationship's existing between social desirability test scores and birth order was explored. There were five significant comparisons (see Table 4, page 25).

The female last-borns of the 6th grade scored significantly higher (i.e., evinced a greater desire for social approval) than the last-born females of the 5th grade. There, the probability of t was less than .025.

Male middle siblings of the 5th grade scored significantly higher than the male middle siblings of the 6th grade, where the probability of that t was less than .05.

Within the 6th grade, female last-borns scored significantly higher than the female middle siblings ($P < .05$). Within the 5th grade, female last-borns scored significantly higher than male last-borns ($P < .05$). Also within the 5th grade, female last-borns scored significantly higher than female middle siblings ($P > .005$), echoing the significance found between these two groups in the 6th grade.

TABLE 3
SOCIAL DESIRABILITY TEST SCORES* ANALYZED
ACCORDING TO GRADE AND SEX

Group	t	d.f.	P
5th grade (M = 14.85) compared to 6th grade (M = 16.4)	.842	38	>.20
5th grade males (M = 14.91) compared to 6th grade males (M = 14.44)	.179	19	>.40
5th grade females (M = 14.75) compared to 6th grade females (M = 18)	1.226	17	>.10
6th grade males (M = 14.44) compared to 6th grade females (M = 18)	1.44	18	>.05
5th grade males (M = 14.91) compared to 5th grade females (M = 14.75)	.056	18	>.45
Both grades: negative performers (M = 16) compared to positive performers (M = 12.5)	.888	6	>.20

*All data include performers' scores.

TABLE 4

SOCIAL DESIRABILITY TEST SCORES ANALYZED
WITH REGARD TO BIRTH ORDER

Groups	t	d.f.	P
Both grades: first-borns (M = 15.3) compared to last-borns (M = 16.8)	.607	24	>.25
Both grades: first-borns (M = 15.3) compared to middle (M = 14.78)	.253	25	>.40
Both grades: middle (M = 14.78) compared to last-borns (M = 16.8)	.943	25	>.15
Female first-borns (5th grade) (M = 11.5) compared to female first-borns (6th grade) (M = 17.16)	1.152	6	>.10
Female middle (5th grade) (M = 10.5) compared to female middle (6th grade) (M = 14.66)	1.264	3	>.10
Female last-borns (5th grade) (M = 18.5) compared to female last-borns (6th grade) (M = 25.5)	2.793	4	<.01**
Male first-borns (5th grade) (M = 14.75) compared to male first-borns (6th grade) (M = 14)	.074	3	>.45
Male middle (5th grade) (M = 20) compared to male middle (6th grade) (M = 13.66)	1.968	7	<.05**
Male last-borns (5th grade) (M = 12.5) compared to male last (6th grade) (M = 17)	.863	4	>.20
6th grade: male first-borns (M = 14) com- pared to female first-borns (M = 17.16)	.523	5	>.30
6th grade: male middle (M = 13.66) compared to female middle (M = 14.66)	.336	7	>.35
6th grade: male last-borns (M = 17) com- pared to female last-borns (M = 25.5)	1.224	2	>.15

TABLE 4 (continued)

Groups	t	d.f.	P
6th grade: male first-borns (M = 14) compared to male last-borns (M = 17)	.288	1	>.40
6th grade: male first-borns (M = 14) compared to male middle (M = 13.66)	.074	5	>.45
6th grade: male middle (M = 13.66) compared to male last (M = 17)	.789	6	>.20
6th grade: female first-borns (M = 17.16) compared to female last-borns (M = 25.5)	1.86	6	>.05
6th grade: female first-borns (M = 17.16) compared to female middle (M = 14.66)	.677	7	>.25
6th grade: female middle (M = 14.66) compared to female last (M = 25.5)	2.676	3	<.05**
5th grade: male first-borns (M = 14.75) compared to female first (M = 11.5)	.431	4	>.30
5th grade: male middle (M = 20) compared to female middle (M = 10.5)	2.32	3	>.05
5th grade: male last (M = 12.5) compared to female last (M = 18.5)	2.29	6	<.05**
5th grade: male first (M = 14.75) compared to male last (M = 12.5)	.439	6	>.30
5th grade: male first (M = 14.75) compared to male middle (M = 20)	.889	5	>.20
5th grade: male middle (M = 20) compared to male last (M = 12.5)	1.937	5	>.05
5th grade: female first (M = 11.5) compared to female last (M = 18.5)	1.923	4	>.05

TABLE 4 (continued)

Groups	t	d.f.	P
5th grade: female first (M = 11.5) compared to female middle (M = 10.5)	.175	2	>.40
5th grade: female middle (M = 10.5) compared to female last (M = 18.5)	5.03	4	<.005**

**Indicates statistically significant probabilities on a one-tailed t test.

As is noted in the tables, significant differences were not detected in other comparisons.

CHAPTER IV

DISCUSSION

In terms of conditioning, these results seem to indicate that people observing a person they dislike being reinforced tend to learn while people observing a person they like being reinforced do not learn.

However, it must be pointed out that the overall increase over both classes in the use of the counted verbs was only +2 over both, with the total of Series A = 321, and Series B = 323. As a whole, the 5th grade usage of the two pronouns increased by 13, while the usage of the two pronouns in the 6th grade Ss actually decreased by 11. It should be noted again that the 6th grade experiment was conducted first, and experimental procedure was somewhat smoother (and apparently more effective) for the 5th grade session.

Within the statistic showing the increased effectiveness of observing a disliked performer's being rewarded, five Ss who watched reinforcement of such performers actually decreased counted pronoun use, while two of the 16 were apparently unaffected, since their post-conditioning frequencies were equal to their operant levels. The other nine observers, however, increased their usage of "I" and "we" in the post-conditioning sequence.

Observers who had witnessed positively-regarded performers showed similarly heterogeneous results. With these performers, three

observers increased their use of the counted pronouns, while three equaled their operant levels in the post-conditioning period, and the other 10 decreased their counted pronoun usage.

Observer Ss of one of the negatively-regarded performers (in the 5th grade) all increased their usage of the counted pronouns in the post-conditioning sequence.

No effort was made to determine the scholastic abilities of the performers, although it is possible that peers had been previously reinforced in the past for imitating or not imitating that performer's academic behavior. In other words, if a student knows that another is often right or is regarded as "smart," that student may pay more attention to his academic pronouncements, even though he dislikes the other, than he would to a student whom he likes but knows is a fair or indifferent model for a scholastic setting. In replications or similar experiments, this variable should be taken into account.

This was an attempt to use a model of the same age as a person expected to imitate. Miller and Dollard (1941) list four classes of people who are imitated by others: "1) superiors in an age-grade hierarchy, 2) superiors in a hierarchy of social status, 3) superiors in an intelligence ranking system, and 4) superior technicians in any field" (183). The latter three classes could have been overriding factors in the results rather than the social "like" or "dislike," provided the criteria for imitation are identical to those for the effects of

vicarious reinforcement. Class number 2 will be elaborated upon later in the discussion. Replications or similar experiments could, with profit, use age differences as keys to selecting performers, however.

It should also be noted that only three out of the eight performers actually increased their usage of "I" and "we" over the operant levels established by them. Berger (1959) found that an observer in a vicarious reinforcement experiment recalled more nonsense syllables than the performer who had been rewarded. Berger did point out that the observer may have covertly rehearsed the syllables; a similar variable could also have been operating in this experiment, as well. In another vicarious reinforcement experiment conducted by Kanfer and Marston (1963), direct reinforcement failed to produce learning in some groups, while those vicariously reinforced did exhibit learning. They pointed out that in that experiment, Ss had only 30 opportunities for direct reinforcement of their responses in acquisition, while those who were exposed to acquisition tapes and vicarious reinforcement were exposed to 270 taped responses. "Thus, the use of VR [vicarious reinforcement] and an 'acquisition' tape considerably lowers the number of [active] trials required for learning" (296). They explained the efficiency of vicarious reinforcement in terms of a mediational response, or as they wrote, the S may rehearse or respond "covertly as he listens to others" (296).

Crowne and Marlowe (1964), in criticizing another experiment, suggested the performer may not be conditioned because the subjects may believe the experimenter is trying to influence them and they resist the influence. "No one wants to be thought a conformer, whether he is in fact or not" (70). They added they failed to find evidence of learning where the subject had a low need for approval, since the subject thought the conditioner was condescending or patronizing.

However, in the course of the present experiment, it was found that the three performers who did increase their usage of the counted pronouns (i.e., evidenced conditioning effects, presumably), all had low social desirability scores (10, 12, and 11), exactly contrary to Crowne and Marlowe's findings.

The contrary result may be a function of the particular procedure used in this experiment, however. Since only one member of each group was selected to "perform" in front of the others, there was evidence of embarrassment and anxiety on the part of some of the performers. The E-conditioner noted on the conditioning sheets of those performers who later decreased their use of the counted pronouns that, for one, two observers had to be asked to be quiet seven times; for another, the performer frequently shrugged her shoulders and looked at the group, although the group was noted as being "very attentive"; and for the third, there was a great deal of squirming by three female observers in the group while the direct reinforcing sequence was being conducted.

Moreover, that latter session was prefaced by the question by one of the female observers, "Are we all going to do that or are we going to watch just her?" In that case, the performer was a disliked performer, as was one of the previously mentioned performers; however, the third was designated as a "liked" performer. All three were females.

Of those performers who experienced no change from operant level of usage to the post-conditioning series, there were no comments by the E-conditioner on unusual behavior on the part of either the performers or the observers.

Of those performers who did indicate that some conditioning had occurred (i.e., they increased their use of the counted pronouns), one rarely looked at the group (and the group was noted as exceptionally quiet), another did look at the group (which giggled in return), and the third apparently exhibited no unusual behavior, nor did the group observing him.

Thus it would seem that for the most part, when the performer was attentive and apparently self-confident (i.e., had a low need for approval, as measured by the social desirability test), and was apparently not embarrassed, he or she did evince conditioning effects. However, attentiveness of the group seemed unrelated, since the only group in which all observers increased their later use of "I" and "we," was the group in which two members had to be asked to be quiet seven

times (the performer decreased her use of the pronouns in the post-conditioning sequence).

Greenspoon (1955) found that there was **little** tendency for Ss to repeat a particular word that had been reinforced, and theorized that the E limits the extent of the class of responses **by** reinforcement, and that the extent of the class in turn may determine whether a stimulus has reinforcing effects. In this sense, the reinforced class used in this experiment was very limited ("I" and "we"). Crowne and Marlowe (1964) did not find that there was a tendency to **avoid** the reinforced words, and it was not found in this experiment, at least on an obvious level. Perhaps the lack of evidence of such **avoidance** is due to the S's idea of the purpose of the experiment (i.e., **he** may be trying to be "creative" in thinking up new words for Greenspoon, or in the Taffel technique, he may be trying to be "creative" in **the** formation of sentences, overlooking the significance of the pronouns). Moreover, since the performers had only constructed 40 sentences by the time they entered Series B, and since they were allowed to **use** their imaginations to complete the sentences, a boredom or reactive inhibition against the use of the counted pronouns probably did not **affect** conditioning.

With regard to the conditioning effects **on** the observers, note that on Table 1, all means under positive performers except one are in a negative direction. That is, all but the males **under** female positive performers decreased their use of the counted pronouns from their operant levels.

The same table contains the means (of difference) for all groups who observed negatively-regarded performers. There, all changes except two were in a positive direction. The exceptions were 6th grade Ss observing female negative performers ($M = 0$), and females observing male negative performers ($M = -2.75$).

Thus a trend toward efficacy of vicarious conditioning is seen in those groups who observe disliked performers. Also note that several comparisons approached significance on this basis of comparison: 6th grade and 5th grade negative groups compared to positive groups; in both grades, Ss observing female positive performers compared to Ss observing female negative performers; 6th grade Ss observing male positive performers compared to Ss observing male negative performers; males observing male negative performers compared to males observing female negative performers; and females observing female negative performers compared to females observing male negative performers.

This may indicate that sameness of sex between a disliked performer and an observer is somewhat facilitating in vicarious reinforcement.

No attempt was made in this experiment to determine Ss' "awareness" of the response which would be reinforced. Greenspoon (1955) eliminated "aware" subjects from his data, although Kanfer and Marston (1963) did not. Crowne and Marlowe (1964) found no difference

in conditioning between "aware" and "unaware" subjects, and retained the data in their statistics.

Due to the planning required for selecting the performers and designating each group of observers for this experiment, groups were actually selected by E the day before the experiment was conducted. The absence of two designated performers forced a last-minute change, in accord with the advice of the teachers, and the experiment proceeded. In the 5th grade, there were exactly 20 students present, and the groups worked out evenly. In the 6th grade, however, there were 23 students present; one of the chosen performers was a last-minute replacement, and there were to be only two observers (instead of the regular four) for this group. Since the observers' regard for that performer was not precisely known, data for this group was not retained in the statistics.

With that exclusion, there was an equal number of subjects for most comparisons except those regarding birth order and the number of each sex within groups (except that all groups did contain both male and female observers). With regard to birth order, it should be noted that there was only one male first-born in the 6th grade. For the other class designations, females and males numbered relatively evenly.

Haimson (1962), as previously noted, found verbal conditioning significantly related to birth order, later-borns being more responsive to conditioning than others. However, note (Table 2) the opposite result was seen in this experiment, with first-borns evincing the effects of

conditioning procedures significantly more than last-borns of both grades, and those of the 5th grade.

Haimson, however, was a college student working with other college students. In this experiment, the subjects (children) were conditioned by an adult E. It would seem reasonable to suggest that first-born children are more conditionable by adults than later-borns, who probably are more experienced in learning from older siblings and who may command less undivided attention from adults than the first-borns.

It is difficult to account for the significance of the difference between the middle and last-borns of the 6th grade, although note that the same comparison in the 5th grade yields a t with a low probability as well. Last-borns of both grades actually decreased their average usage of the counted pronouns in the post-conditioning sequence, perhaps a function of the lack of prestige of adult reinforcement.

With regard to the social desirability (S.D.) test scores alone, note on Table 3 that 6th grade Ss had a higher average score (16.4) (or need for social approval) than the 5th grade Ss (14.85), although the difference was not significant. Mean scores of the 5th grade males (14.91), 5th grade females (14.75) and 6th grade males (14.44) were noticeably close, although the 6th grade females scored somewhat higher ($M = 18$). As was noted, however, S.D. scores compared by the large groups evidenced no significant differences.

Note on the test as given (Appendix) that questions "missed" included all questions. At least one student "missed" each question, and one question was "missed" by 32 students. As was previously noted, students appeared to understand the questions (except for some members of the 5th grade who didn't understand what "practice what you preach" meant). There were several instances when students entered qualifying words such as "sometimes" on the tests when they were admitting to behavior that is not usually "socially acceptable."

With regard to S.D. scores and birth order, there was no overall trend apparent in comparing first with last-borns (see Table 4), first with middle, and middle with last-borns. However, since significance was found in other comparisons, they were examined more closely. The female last-borns of the 6th grade scored significantly higher ($<.025$ P) than the female last-borns of the 5th grade. Although comparisons by birth order between other females of the 5th and 6th grades were not significant, note that in each case, the probability of t was between .15 and .10. Also in each of the three birth orders used, the 6th grade females scored higher on the social desirability test than the 5th grade females.

This would seem to indicate the need for a test specifically to explore this finding. In other words, do girls, as they approach adolescence, begin to feel the need for social approval more strongly than they did when they were younger? If so, does this need reach a

peak and then decline as one becomes more comfortable with adolescence? Crowne and Marlowe (1963) found a mean score of 16.82 for college-age females tested at Ohio State University (introductory psychology students), while the mean obtained from the 6th grade girls in this study was 18.

It should also be noted that the 6th grade female last-borns scored very high ($M = 25.5$), accounting for most of the difference reflected by the female mean for the class. If a study is performed to investigate this finding further, birth order data should be collected and checked along with age and need for social approval.

It must be noted, too, that the Ss were all students at Hebel Elementary School, which is operated by Central Washington State College, and is located on the college campus. As a result, the students are used for experimental procedures by the Departments of Education and Psychology. Although the faculty of that school does regulate the amount (and content) of experimental work conducted there, the students, unless new to the school, were not naive subjects. Moreover, checking Ss' surnames against a faculty directory (and since the locus is a very small town and name duplications usually unlikely), there were a possible 10 faculty children out of the 20 5th grade students, and a possible 15 out of the 23 6th grade students who were faculty children. It would seem that this would not constitute a "normal population in terms of experience, if not in other aspects as well. Moreover,

three children, who were offspring of faculty members of the Department of Psychology, may or may not have been familiar with conditioning techniques. Two of the latter faculty children increased their counted pronoun use in the post-conditioning sequence by one pronoun each, while the other used the same number of counted pronouns as he did in establishment of his operant level.

With regard to Miller and Dollard's list of classes of persons who are imitated by others (see page 30), particularly regarding superiors in a hierarchy of social status, there was some evidence that social status on the basis of parents' faculty rank was a factor in "liking" or "disliking." For instance, three of the positively-regarded performers were offspring of associate or full professors, while two of the negatively-regarded performers were offspring of lower-ranking faculty members. The remaining performers were not children of faculty members.

Initially, administration of a sociometric test was planned to determine "liked" and "disliked" performers for this experiment, but the teachers and principal of the school did not want to excoriate problems which were being resolved among the students by asking them to voice their dislikes. Therefore, the teachers gave their opinions as to which students were liked by which students, and which were disliked by a specific group of students. This is not to imply that the teachers may have selected the performers on the basis of their own attitudes

toward parents of the performers; judging from the behaviors of the students toward the performers, the teachers' judgments were accurate. Also, these judgments would probably reveal a long-term basis of "like" or "dislike," whereas a sociometric test might reveal only how the students regarded their peers at the moment the test was administered.

In such a small-town atmosphere, it might be useful to determine whether, in an experiment, the status of the parents also determines the status of the children, where gross economic differences are not a factor.

Further, this experimenter believes a replication is in order where the academic performance record is taken into account, both on the part of the performers and on the part of the observers. Moreover, in similar experiments, some control should be exercised to prevent embarrassment or anxiety on the part of the performer, or if not, at least their post-conditioning scores should be discounted if such reactions are noted.

It might also be interesting to use the Taffel technique omitting formation of the rest of the sentences (asking the subjects to simply choose one of the pronouns to go with the given verb), to detect whether a reactive inhibition effect becomes evident. Further experimentation is also needed to determine whether first-born children are indeed more conditionable by adults, and if so, until what age?

As previously noted, this experimenter believes further experimentation is in order to determine optimum needs for social approval by age group, particularly with pre-adolescent and adolescent females.

Kanfer and Marston (1963) reported vicarious reinforcement has "great accelerating effects" (295). If this is true, and within limits it appears to be so in this study, it would seem that if all variables (careful selection of the performer seems to be one important variable) affecting vicarious reinforcement are known and controlled, it would add to the efficiency of learning (and teaching).

In a further investigation of aspects of vicarious reinforcement, corollary to their main experiment, Kanfer and Marston investigated whether vicarious reinforcement contributed to learning mainly because of its informational aspects. They concluded it **did not**, since they found that when informational input alone was given, S's use of "critical responses" did increase, but not significantly.

It seems to this experimenter that this touches on another rich source of hypotheses such as contrasting vicarious reinforcement with information only, and vicarious reinforcement "aware" with vicarious reinforcement "unaware," for example.

In sum, the examinations of the pale of vicarious reinforcement are too few for its potential importance. That which has been done in this area deals only with human subjects, although it would seem reasonable to perform experiments, too, with vicarious reinforcement of sub-human species.

B. F. Skinner's findings on the efficiency of variable reinforcement are extremely significant for efficiency of learning, especially by single organisms. Additional knowledge gleaned from experimentation with vicarious reinforcement might open the way for similar efficiency in manipulating the behavior of several organisms at once.

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APPENDIX A

MODIFIED CROWNE-MARLOWE SOCIAL DESIRABILITY TEST WITH
"CORRECT" CHOICES AND TABULATION OF "MISSES"

APPENDIX A

MODIFIED CROWNE-MARLOWE SOCIAL DESIRABILITY TEST WITH

"CORRECT" CHOICES AND TABULATION OF "MISSES"

- *1. Even if I have to go out of my way, I always help someone in trouble. (T)

6th grade: 7; 5th grade: 13 $\Sigma = 20$ missed

2. It is sometimes hard for me to go on with my work if I am not encouraged. (F)

6th grade: 12; 5th grade: 13 $\Sigma = 25$

- *3. I have never strongly disliked anyone. (T)

6th grade: 9; 5th grade: 11 $\Sigma = 20$

- *4. At times I have had doubts about my ability to succeed in life. (F)

6th grade: 11; 5th grade: 10 $\Sigma = 21$

- *5. I sometimes get mad when I don't get my way. (F)

6th grade: 14; 5th grade: 15 $\Sigma = 29$

- *6. I am always careful about the way I dress. (T)

6th grade: 8; 5th grade: 7 $\Sigma = 15$

7. My table manners at home are as good as when I eat out in a restaurant. (T)

6th grade: 8; 5th grade: 5 $\Sigma = 13$

8. If I could get into a movie without paying and be sure I was not seen, I would probably do it. (F)

6th grade: 0; 5th grade: 1 $\Sigma = 1$

- *9. At times I have given up doing something because I didn't think I had the ability to do it. (F)

6th grade: 13; 5th grade: 12 $\Sigma = 25$

10. I like to gossip at times. (F)

6th grade: 18; 5th grade: 14 $\Sigma = 32$

- *11. At times I have felt like doing something my parents or teacher told me not to do, even though I knew they were right. (F)

6th grade: 17; 5th grade: 13 $\Sigma = 30$

12. No matter who I'm talking to, I'm always a good listener. (T)

6th grade: 9; 5th grade: 12 $\Sigma = 21$

13. I can remember "playing sick" to get out of something. (F)

6th grade: 8; 5th grade: 8 $\Sigma = 16$

- *14. There have been times when I took advantage of someone. (F)

6th grade: 15; 5th grade: 15 $\Sigma = 30$

15. I'm always willing to admit it when I make a mistake. (T)

6th grade: 9; 5th grade: 9 $\Sigma = 18$

16. I always try to practice what I preach. (T)

6th grade: 9; 5th grade: 6 $\Sigma = 15$

- *17. I don't find it hard to get along with loud-mouthed people. (T)

6th grade: 6; 5th grade: 12 $\Sigma = 18$

18. I sometimes try to get even, rather than forgive and forget. (F)

6th grade: 15; 5th grade: 16 $\Sigma = 31$

19. When I don't know something I don't at all mind admitting it. (T)

6th grade: 5; 5th grade: 4 $\Sigma = 9$

- *20. I am always courteous, even to people who are not pleasant. (T)

6th grade: 13; 5th grade: 15 $\Sigma = 28$

21. At times I have really insisted on having things my own way. (F)

6th grade: 16; 5th grade: 15 $\Sigma = 31$

- *22. There have been times when I felt like smashing things. (F)

6th grade: 15; 5th grade: 16 $\Sigma = 31$

- *23. I would never think of letting someone else be punished for something I did. (T)

6th grade: 2; 5th grade: 7 $\Sigma = 9$

- *24. I don't mind if someone asks me to return a favor. (T)

6th grade: 1; 5th grade: 1 $\Sigma = 2$

- *25. I have never gotten mad when people came up with ideas very different from my own. (T)

6th grade: 8; 5th grade: 9 $\Sigma = 17$

- *26. I wouldn't ride on my bike at night without a taillight and a reflector on it. (T)

6th grade: 7; 5th grade: 9 $\Sigma = 16$

- *27. There have been times when I was quite jealous of the good luck of others. (F)

6th grade: 14; 5th grade: 15 $\Sigma = 29$

28. I have almost never felt the urge to tell someone off. (T)

6th grade: 12; 5th grade: 15 $\Sigma = 27$

29. I am sometimes irritated by people who ask favors of me. (F)

6th grade: 7; 5th grade: 11 $\Sigma = 18$

30. I have never felt that I was punished without cause. (T)

6th grade: 8; 5th grade: 11 $\Sigma = 19$

*31. I sometimes think when people have bad luck, they only got what they deserved. (F)

6th grade: 13; 5th grade: 11 $\Sigma = 24$

*32. I have never said something on purpose that hurt someone's feelings. (T)

6th grade: 11; 5th grade: 12 $\Sigma = 23$

* Indicates test items which were changed.