THE EFFECT OF A MONETARY INCENTIVE ON THE ACCURACY OF POST-TRAINING SELF-REINFORCEMENT BEHAVIOR

SUSAN KERWIN

The Effect of Monetary Incentive on the Accuracy of Post-Training Self-Reinforcement Behavior

Thesis submitted to the Department of Psychology, Memorial University of Newfoundland, in partial fulfillment of the requirements for the degree of Master of Science, August 31, 1973.

Acknowledgements

The author wishes to thank Al Kozma for his invaluable assistance and supervision during both the research and writing-up phases of this thesis and to the other members of my thesis committee, Ted Hannah and Navin Jain for their helpful comments and criticisms. Thanks also to Betty Roach for the several patient hours of typing and retyping the manuscript. And finally, a special thanks to my sister Dee Dee and to all the members of my family for their support and encouragement throughout all stages of my research.

Abstract

The present study investigated the effect of a monetary incentive on the accuracy of post-training self-reinforcement behavior, specifically upon the accuracy of the behavior of the high self-reinforcing subjects.

Subjects were classified as either low or high self-reinforcers on the basis of their performance on a pretraining task wherein performance accuracy was unknown. Following this, an equal number of subjects were trained to a criterion level of 40% or 80% correct choices on the last block of training trials. Subjects in the no incentive condition were then administered the test phase which assessed their self-reinforcing behavior, whereas subjects in the incentive condition were informed that they could earn up to an extra $5.00 for the accuracy during the test phase.

Results indicated both significant baseline and training main effects in relation to both change and accuracy of self-reinforcement behavior, but the absence of any incentive effect. In addition, confidence scores, as measured by a post-experimental questionnaire, were unrelated to initial baseline performance.

Table of Contents

List of Tables

List of Figures

The concept of self-reinforcement (SR) has been examined in recent years in relation to both the type of variable affecting its incidence (Kanfer and Marston, 1963a; Bartol and Duerfeldt, 1970), and to the nature (i.e. the frequency and accuracy) of the particular SR response which the subject emits (Kanfer and Marston, 1963a; Kozma and Easterbrook, 1973).

Marston (1964, p. 879) defines an SR simply as "... the delivery of a reinforcing stimulus by an organism to itself without direct and current external controls. The reinforcements, whether verbal or physical, are freely available but delivered under contingencies specified only by the organism that is both delivering and receiving them." Presumably then, the subject is placed in an achievement situation and is required to monitor his response in accordance with a certain established performance criterion. The subject administers SR upon either attaining or exceeding the particular criterion.

Thus Skinner (1953) views the concept of SR as an important means of self-control. Through it the child learns to regulate his behavior in accordance with social norms and in the absence of external control, in that he is able to administer self-rewards (which are at all times freely available to him) conditional upon the attainment of a preset criterion. The importance of developing these individual self-imposed standards can be seen particularly in the case of the new or ambiguous situation where the lack of external feedback causes the subject to rely heavily upon his previously-established self-regulating mechanism. More recent application of the concept of SR has been seen in the area of clinical psychology and self-monitoring research wherein the subject decides to either administer

or not to administer SR on the basis of feedback from self-observation (Kanfer, 1970).

The necessity of obtaining overt responses in the typically covert situation of SR has resulted in the use by most investigators of a similar experimental design known as the "directed-learning paradigm." The subject first undergoes a training phase during which time the experimenter provides reinforcement for task responses. This reinforcement can be either contingent (that is feedback provided after a correct response) or non-contingent (feedback accuracy provided after a series of trials without indicating the correctness of any particular response). In the subsequent phase, the subject continues to perform the same task and takes over the experimenter's task in that he is instructed to reinforce himself when he believes his response is correct. Thus, the subject is now required to either reward or not to reward his task behavior depending upon his particular criterion for adequacy. No further feedback concerning his performance accuracy is given.

A number of investigators have concluded that subjects will match their SR rate during the test phase with the amount of reinforcement or experimenter feedback received during the training phase. Marston and Kanfer (1963) trained three groups of subjects to the same level of criterion (6/10 correct trials in a block) on a verbal discrimination task with a light as the contingent reinforcer. Results indicated that the mean frequency of SR on the first block of the test phase was 6/10, leading the experimenters to conclude that ". . . the subjects administered SRs to a response with a probability quite close to that with which the response was reinforced at the end of acquisition" (Marston and Kanfer, 1963, p. 94). A second experiment by Kanfer and Duerfeldt

(1967), employing an ambiguous non-contingent task and negative reinforcement, nevertheless yielded much the same results. Three groups of subjects who had been negatively reinforced at the rate of 30% during training approximated this with rates of 24.3%, 28.8% and 25.3% SRs administered during the test phase. The control group, which had received no feedback during training, administered SRs at the rate of 9.5%. The results of these two studies seem to indicate that this is how the subject handles a relatively ambiguous task situation -- by reinforcing himself at a rate similar to the experimenter-administered-reinforcement, whether the task represents contingent or non-contingent reinforcement. However, another study by Kanfer and Marston (1963a) which employed three levels of discrimination learning (5/10, 7/10 and 9/10), indicated the relationship between the experimenter- and subsequent subject-administered reinforcement to be more complex than previously stated. Results showed that the SR test phase behavior of the subjects was systematically related to the level of original learning, in that with an increase in the level of pre-training there was a corresponding increase in SR rate; however in most cases the SR rate during the test phase was significantly above the training level rate (50% and 65%; 70% and 81%; and 90% and 93%).

The importance of accounting for baseline SR rate (rate of SR administered by the subject prior to receiving any feedback from the experimenter during the training phase) as an additional contributing factor in post-training SR behavior is illustrated in an experiment by Kanfer, Duerfeldt and LePage (1969). Results not only clearly dichotomized a randomly-selected population into high and low baseline self-reinforcers,

but also showed a consistency in the pattern of SR over two highly dissimilar tasks (a time-estimation and word-association task). A Newman-Keuls analysis indicated a significant difference between high and low baseline self-rewarders in their rates of administering positive SR during the test phase.

Perhaps this factor of baseline SR rate which had not been taken into account in the previously-cited experiment by Kanfer and Marston (1963a) may have accounted for a significant portion of the difference obtained between training level and SR test rate level.

A second experiment by Bartol and Duerfeldt (1970) indicated the importance of both baseline SR rate and amount of direct reinforcement received during training, with the two acting as joint determiners of post-training SR behavior. The subjects first received a series of one hundred trials on a word-association task which measured their base rate of SR and then were randomly assigned to either a high (60%) or a low (30%) direct reinforcement training group. Results indicated that: (1) base rate was highly correlated with test rate ($r = .61$), $p < .001$ and accounted for over 36% of the variance in SR test behavior, and (2) the amount of direct reinforcement administered during training exerted a significant main effect. Results also indicated a significant failure on the part of the 30% (low reinforcement) group to match their training level during the test phase (actual post-training SR rate = 46%), while the 60% (high reinforcement) group more closely approximated their level of training (actual post-training SR rate = 66%). Since both groups were operating at a mean SR base rate of 52%, this particular relationship raised the possibility, subsequently examined in the Kozma and Easterbrook (1973) study, that this

base rate SR behavior would increase only if the level of training exceeded it.

Subjects in the Kozma and Easterbrook (1973) study were first classified as either high, medium, or low baseline self-reinforcers on the basis of their responses on a four choice discrimination learning task. Following this baseline phase, an equal number of subjects were trained to a criterion of either 40%, 60% or 80% correct choices on the last block of training trials. The subjects' SR rate was then measured in a post-training phase during which time SR scores, correct self-reinforcement (CSR) scores and incorrect self-reinforcement (ISR) scores were recorded. SR change from pre to post training by means of an analysis of variance design revealed significant baseline and training main effects as well as a significant baseline by training interaction. A Newman-Keuls analysis, carried out to clarify the locus of the interaction, revealed that low baseline subjects increased their mean SR baseline rate of 13% at all levels of training, medium baseline subjects increased their mean baseline rate of 63% only after 80% training, and that high baseline subjects did not modify their SR baseline rate of 98% at any level of training. These results are consistent with the hypothesis examined by Kozma & Easterbrook (1973), that an increase in baseline SR rate during the test phase would occur only if the subject's level of training exceeded this baseline rate.

The indiscriminate nature with which high baseline subjects reinforced themselves is worthy of further investigation. These subjects not only failed to modify their SR behavior with training, but reinforced themselves at <u>all</u> training levels after almost <u>every</u> response -- whether

correct or incorrect. Support for the fact that this particular behavior is due primarily to initial baseline SR rate and not to level of training comes from the following two sources. Firstly, subjects in the low and medium baseline groups in this study increased their SR rate and decreased their rate of omission errors (failure to self-reinforce when the response is correct) more, with training, than did the high baseline group. The former subjects thus appeared to be actually "learning the task" as a result of training. Secondly, the study by Kanfer and Marston (1963a) although not taking baseline SR rate into account, nevertheless revealed that the subjects who had received the greatest amount of training (9/10) gave fewest ISRs during the test phase.

It thus appears that the particular behavior of high baseline subjects is due to a high inherent tendency to self-reinforce regardless of an experimental condition such as level of training. This particular tendency to administer SR in a consistent way has been noted elsewhere in the literature. Kanfer (1966) reported significant correlations between children's rates of undeserved positive SRs in an individual verbal task and in a classroom game. Similarly, Kanfer, Duerfeldt and LePage (1969), concluded that " . . . SR frequency on ambiguous tasks may correlate with durable personality characteristics which describe a person's general self-attitudes" (Kanfer, Duerfeldt and LePage, 1969, p. 670).

Two possibilities thus exist to explain the high reinforcing behavior of the high baseline subjects. The first of these represents an inability on the part of the subjects to "learn," that is to match SRs with correct responses. This might seem to be the case when we

examine the fact that the subjects administered ISRs at the same rate that they administered CSRs, and appeared to be unable to discriminate between the two.

A second possibility, more in line with the thinking of Kanfer, Duerfeldt and LePage (1969), is that high baseline subjects are capable of discriminating between correct and incorrect responses, but are extremely confident people. This confidence appears to override everything else and is reflected in their characteristic rate of SR. Support for this latter hypothesis would seem to come from the Kozma and Easterbrook (1973) study in that high baseline subjects reinforced themselves on almost every trial during a baseline phase when they had no information at all about performance accuracy. Their strong tendency to gamble is contrasted with the behaviors of both low and medium baseline subjects who were presumably more cautious and thus reinforced themselves less often during the baseline phase. Low baseline subjects who appeared to be the least confident, increased their SR rate with an increase in training; they started out with very few commission errors (ISRs) which were not increased by training, but committed a substantial number of omission errors (failure to self-reinforce when they should). The medium base rate subjects who appeared to possess a "moderate" rate of confidence, increased their SR rate as training provided more information, and were not as reluctant to self-reinforce for correct responses as were the low baseline subjects, and thus committed fewer omission errors.

The present study will attempt to modify the tendency of high

baseline subjects to reinforce themselves indiscriminately for both correct and incorrect responses. A number of possibilities exist as to how such modification may be carried out. Since high baseline subjects have failed to "match" SRs with correct responses, perhaps a level of training which exceeds the mean high baseline SR score would improve the SR accuracy during the test phase. The highest level of training provided in the Kozma and Easterbrook (1973) study was 80%, even though the mean base rate score of 98% obtained by the high self-reinforcing subjects considerably exceeded this rate. It would thus be necessary to provide training to a criterion of 100% correct choices to determine whether or not the training level could in fact influence the post training SR accuracy of high base rate subjects.

A second possible means of modifying high baseline SR behavior is to vary the nature of the instructions supplied by the experimenter to the subject concerning the criteria for SR. Kanfer and Marston (1963a) encouraged one group to judge their responses as accurate and discouraged a second group from doing so. Results indicated that the SR 'encouraged' group gave a significantly greater number of SRs at end of training than did the SR 'discouraged' group (58% vs. .2%); however, the former group also gave the highest proportion of ISRs, while the latter group gave the lowest proportion. A second experiment by Kanfer and Marston (1963a) again indicated that facilitating instructions to administer SR resulted in the highest rate of SRs, while inhibiting instructions resulted in the lowest rate of SRs; however, facilitating instructions resulted in significantly less accuracy in administering SRs. If one is correct in assuming that high

baseline subjects possess a high degree of confidence in their self-reinforcing ability, then presumably the administering of facilitating instructions to one group of these subjects would encourage their self-reinforcing pattern (it could not be highly strengthened as their actual CSR and ISR rates approached one), while the administering of inhibiting instructions to a second group would presumably make these subjects more cautious, resulting in fewer SRs and fewer ISRs, thus improving final SR accuracy.

A final method of improving the SR accuracy of high baseline subjects, and one which the present study will investigate, involves the effect of a reward (i.e. a monetary incentive) on post-training SR behavior. Previous research by Marston and Kanfer (1963) has indicated the type of incentive used to be a significant condition affecting final SR accuracy. The subjects were all trained to a level of 6/10 correct responses while being reinforced with either a low, medium, or high incentive for each correct response. The low incentive consisted of a green light alone. Subjects in the medium incentive group were given white poker chips after each light flash. The high incentive subjects were allowed to exchange their poker chips for prizes which included items such as pens and pocket knives, as well as a chance to win $10.00 or a dinner for two. Results indicated that the level of incentive affected neither the frequency of correct responses, nor the frequency of total SRs, but affected the distribution of SRs to correct and incorrect responses in that the high incentive group gave the lowest number of ISRs. The authors thus conclude " . . . the

distribution of SRs can be manipulated by such external conditions as incentive, independently of the learned response for which SR is given" (p. 94).

Accordingly, the present study will investigate, with the use of a monetary incentive, whether or not high baseline subjects are able to discriminate between a correct and an incorrect choice after 80% training. If, according to the "inability to match" hypothesis, the subjects are unable to associate the SR with a correct response, then the addition of the monetary incentive condition should not alter final SR accuracy. If, on the other hand, the performance of high baseline subjects merely reflects a good deal of confidence in their response choices as well as a high tendency to gamble, then the addition of the monetary incentive (a gaining of 25¢ for every correct response) should, according to the Marston and Kanfer (1963) study, result in the same number of test phase SRs and CSRs, but a significantly smaller number of ISRs -- thus improving the final SR accuracy of high baseline subjects.

A questionnaire, administered to all subjects immediately following the test phase, will measure the degree of confidence associated with each particular response. In addition, a supplementary questionnaire administered to all subjects in the monetary incentive condition, will examine the effects of the reward upon their SR behavior (see Appendix A, Figure 4).

Thus, it is specifically predicted that:

(1) Both high and low baseline subjects, in the no incentive condition, will exhibit the same behavior pattern as found in

the Kozma and Easterbrook (1973) study.

(2) Low baseline subjects in the monetary incentive condition will exhibit a behavior pattern similar to that noted in the Kozma and Easterbrook (1973) study, with perhaps a slight increase in rate of omission errors (failure to self-reinforce) due to an increased sense of caution as a result of the monetary incentive.

(3) High baseline subjects in the monetary incentive condition will exhibit the same high number of CSRs as noted in the Kozma and Easterbrook (1973) study; however their characteristic rate of reinforcing for incorrect responses will be reduced as in the Marston & Kanfer (1963) study as a result of the monetary incentive.

(4) High baseline subjects will exhibit the highest confidence ratings on the post-experimental questionnaire, in line with the interpretations of Kanfer et al., (1969) and Kozma and Easterbrook (1973).

Method

Subjects

Forty male and forty female first and second year psychology students attending Memorial University of Newfoundland served as the subjects in this experiment. Each subject was paid $1.00 per half hour of experimental participation. The subjects in the monetary incentive condition were also allowed to keep whatever additional money (up to a maximum of $5.00) they may have earned.

Design

This study involved the testing of both male and female low and high baseline self-reinforcers. An equal number of subjects from each sex and baseline grouping were randomly assigned to either a 40% or 80% level of training and to either a monetary incentive or a no-incentive condition. This procedure resulted in a 2(Sex) by 2(Baseline Grouping) by 2(Training Level) by 2(Incentive Condition) design, consisting of 16 treatment cells, with 5 subjects per cell.

Limits for the two baseline groups were defined according to results obtained by Kozma and Easterbrook (1973). The cut-off points differed according to sex with the low baseline male scores ranging from 0 through 7, low baseline female scores ranging from 0 through 5, and high baseline scores for both sexes ranging from 16 through 20 on a 20 trial task.

Measures taken during the baseline and test phases included (1) total number of SR responses; (2) number of CSR responses; and (3) number of ISR responses. During the training phase, the number of CSR responses alone was recorded.

A rear projection screen, the subject's response panel and the set of instructions for the experiment were mounted on the front of the subject's rack. A screen, visible to the experimenter alone, which registered the subject's responses, was located on the rear of the subject's rack.

A Kodak Carousel 800 slide projector was used to project an 88 x 125 mm. image onto the rear projection screen.

The subject's response panel was a 175 x 125 mm. plexiglass plate with five red push buttons (one of which was slightly larger than the rest) and a reinforcement light mounted on its face. The four smaller red push buttons were positioned to form a square and numbered one through four. Each push button corresponded to a different quadrant of the screen, and a diagram below each button indicated the quadrant to which it referred. The larger red push button, centered above these four smaller push buttons, was the subject's SR button. This button activated the orange reinforcement light (lamp size 1820) located at the top of the response panel.

A 175 x 150 mm. panel, with a screen measuring 63 x 50 mm. located in its centre, was visible to the experimenter alone and recorded all of the subject's responses. The four quadrants of this screen were wired to the four respective push buttons on the subject's response panel. The experimenter also had a hand-held button which activated the subject's orange reinforcement light. Both this hand-held button and the subject's red SR button were wired to a central light on the screen. Thus each time the subject pushed a particular

button, the respective corner of the screen would light up, and each time the subject reinforced himself, or was reinforced by the experimenter, the central area of the screen would light up. This enabled the experimenter to record both the subject's choice response and his SR (if administered) simultaneously.

The timing for the slide durations was controlled by setting the Kodak Carousel 800 slide projector at the five second interval. Each stimulus slide was presented for the same five second interval, during which time the subject made his response.

Five sample slides, interspersed with five blank slides, were located in one projector tray, while the seventy main stimulus slides and seventy blank slides were located in a second carousel. Each "block" of slides consisted of ten stimulus slides, interspersed with ten sample slides.

Apparatus and Materials

(i) Equipment

The main equipment consisted of two metal racks, one facing the subject which measured .5 x .55 x .3 m., the other facing the experimenter which measured .6 x .5 x .3 m.

The experimenter's rack contained the main power supply as well as the various connecting points for the units located on the subject's rack.

(ii) Stimuli

Seventy-five 24 x 36 mm. slides, each showing four nonsense syllables, were used as task stimuli. Five sample slides were used to demonstrate the experimental procedure to the subject. Seven copies of

a set of ten different slides were used during the baseline, training and test phases. All stimuli presented were consonant-vowel-consonant nonsense syllables with association value ranging from 48% to 52% (Archer, 1960). Combinations of syllables on each slide, their positions on each slide, and the position of the correct syllable on each slide were randomly chosen. The seven different orders for presenting the slides were also randomly determined.

(iii) Task

The task was similar to that used in earlier studies on SR (Marston and Kanfer, 1963; Kozma and Easterbrook, 1973). Each stimulus slide consisted of four nonsense syllables, one of which had previously been randomly chosen and labelled the "correct" nonsense syllable. Each time a stimulus slide was presented, the subject was required to identify one of the four syllables as "correct".

Procedure

The procedure was also similar to that used by Kozma and Easterbrook (1973). The subject entered a 2.1 x 3.3 m. room and sat facing the experimenter. The subject was asked to carefully read the set of experimental instructions which were taped to the front of his rack, and was given a few minutes to do so. Having read the instructions, the five sample slides were then shown to the subject. He was required to behave "as if" these were the actual experimental slides (that is to choose a "correct" nonsense syllable and to self-reinforce when he felt correct). These slides served to clarify any difficulties the subject may have had concerning the experimental procedure as well as to

ascertain that he understood the "mechanics" behind the task itself.

The baseline phase was then presented and continued for two blocks of trials. During the training phase which immediately followed, the subject was instructed to respond to task stimuli, but to refrain from pressing the SR button, as the light would go on automatically if he was correct. Training continued until the end of the block of trials on which the subject achieved either 4 or 8 correct responses (depending on his training criterion). Having reached their respective criterion levels, the subjects assigned to the incentive group, were administered the test phase, and asked to self-reinforce when they felt so inclined. The subjects assigned to the monetary incentive condition were told that they could earn up to an additional $5.00 (aside from the standard payment of $1.00 per half hour of experimental participation). Specifically, the subjects were told that they would receive 25¢ for each CSR but would lose 25¢ for (1) each correct response wherein he failed to self-reinforce or (2) each incorrect response which was self-reinforced. The test phase was administered for both incentive and noincentive groups for two blocks of trials.

Order of slide presentations remained constant throughout the experiment. Each subject was presented with the initial five sample slides. During the baseline phase, each subject received block orders one and two, and the subject's training phase began with block order three. Each subject, during the test phase, was then presented with the block order which immediately followed his last training criterion block. Each time the last of the seventy stimulus slides was shown, the

experimenter would again recycle these slides.

Upon completion of the experiment, each subject was asked to complete a short questionnaire (Appendix A, Figure 4). The questionnaire administered to the noincentive group listed the ten experimental slides and asked the subject to choose the correct syllable on each slide and indicate on a scale from 1 through 5 how certain he was that he had, in fact, chosen the correct syllable. The questionnaire administered to the incentive group contained the above information as well as additional questions concerning the extra money these subjects could earn.

Having completed the questionnaire, each subject was paid whatever money he had earned. The subject was also asked not to reveal anything about the experiment until the testing had been completed.

Results

The mean baseline scores for each Baseline (2) by Sex (2) condtion and the range of each baseline group are listed in Appendix B, Table A.

A 2 (Incentive Condition) by 2 (Training Level) by 2 (Baseline Group) by 2 (Sex) analysis of variance design on baseline scores yielded significant Baseline ($F = 1103.34$, $p < .01$) and Sex ($F = 4.419$, $p < .05$) main effects. An analysis of differences between mean baseline scores indicated that the base rate for low baseline males was significantly higher than the base rate for low baseline females ($t = 2.69$, $p < .05$).

A 2 by 2 by 2 x 2 analysis of variance on trials to criterion yielded a significant training main effect alone ($F = 82.114$, $p < .01$). The mean number of trials to criterion for subjects trained to a level of 40% was 3.55, while the mean number for subjects trained to a level of 80% was 13.4.

Thus, prior to the main analyses, the only source of subject variability lay in the higher mean baseline scores of the male low baseline self-reinforcers.

(a) SR Change.

The mean pre and post SR scores for all Incentive (2) by Training Level (2) by Baseline Group (2) by Sex (2) conditions are listed in Appendix B, Table B.

An analysis of variance on overall SR difference scores, (obtained by subtracting each pre SR score from its corresponding post SR score) yielded significant Baseline ($p < .01$), Training Level ($p < .05$)

and Sex ($p < .05$) main effects (see Table 1). The means for each of these Baseline by Training by Sex conditions are listed in Appendix B, Table C. SR difference scores for the low baseline subjects were higher than those for the high baseline subjects. SR change scores within this latter group failed to reach statistical significance ($t = .116$, $p > .05$). Training to a level of 80% reflected a greater overall SR difference than did training to a level of 40%. SR difference scores for the females were higher than those for the males.

In order to ascertain whether the factor of belief in the monetary incentive was necessary to produce any type of incentive effect, an analysis of variance on SR difference scores for the subjects who believed the monetary incentive manipulation was carried out. The subjects in the incentive condition were selected on the basis of their responses to questions one and five in Part B of the questionnaire. The analysis yielded significant Baseline ($F = 148.746$, $p < .01$) and Training ($F = 5.585$, $p < .01$) main effects (see Appendix B, Table D). Thus, the factor of believing in the incentive still failed to produce any significant main effect of this nature.

(b) SR Accuracy

The accuracy of SR/CR (the matching of self-reinforcements with correct responses) was assessed by analyses of post-training CSR and ISR scores.

An analysis of variance on post-training CSR scores yielded significant Training ($p < .01$) and Baseline ($p < .05$) main effects, as

well as a significant interaction between Incentive, Training, and Sex ($p < .05$) (See Table 2.). The means for the Training by Baseline conditions are listed in Appendix B, Table E. Training to a criterion of 80% yielded a higher mean CSR score than did training to a criterion of 40%. The mean CSR performance of the low baseline subjects was lower than that of the high baseline subjects.

An inspection of the treatment means contributing to the significant Incentive by Training by Sex interaction suggested similar behavior patterns for all of the subjects under 40% training, but some dissimilarity among the subjects trained to a criterion of 80% (See Figure 1).

A Newman-Keuls multiple comparison of the relevant treatment means was thus undertaken to assess the locus of the interaction (See Appendix B, Table F). Results of the comparison indicated that females under the incentive condition and 80% training had a significantly higher mean CSR score than females under the no incentive condition and 80% training, ($p < .05$).

Results of the analysis of variance on post ISR scores yielded significant Training ($p < .01$) and Baseline ($p < .01$) main effects (see Table 3). The mean scores for each of these Training by Baseline conditions are listed in Appendix B, Table G. The subjects trained to a criterion of 80% had a significantly smaller mean number of ISRs than the subjects trained to a criterion

Table 1

Analysis of Variance on SR Difference Scores

Source	Ss	df	MS	F
INCENTIVE (I)	16.200	1	16.200	1.174
TRAINING (T)	92.450	1	92.450	6.699*
BASELINE (B)	2904.05	1	2904.05	210.439**
SEX (X)	57.800	1	57.800	4.188*
I x T	9.800	1	9.800	0.711
I x B	12.800	1	12.800	0.928
I x X	6.050	1	6.050	0.438
T x B	11.250	1	11.250	0.815
T x X	45.000	1	45.000	3.261
B x X	20.000	1	20.000	1.450
I X T x B	1.800	1	1.800	0.130
I x T x X	26.450	1	26.450	1.917
I x B x X	8.449	1	8.449	0.612
T x B x X	0.197	1	0.197	0.014
I x T x B x X	2.450	1	2.449	0.177
S	883.198	64	13.800	

* $p < .05$

** $p < .01$

Table 2

Analysis of Variance on Post CSR Scores

Source	Ss	df	MS	F
INCENTIVE (I)	12.013	1	12.013	1.728
TRAINING (T)	904.510	1	904.510	130.148**
BASELINE (B)	43.512	1	43.512	6.261*
SEX (X)	1.512	1	1.512	0.218
I x T	4.513	1	4.513	0.649
I x B	9.113	1	9.113	1.311
I x X	17.112	1	17.112	2.462
T x B	2.113	1	2.113	0.304
T x X	0.313	1	0.313	0.045
B x X	0.613	1	0.613	0.088
I x T x B	2.112	1	2.112	0.304
I x T x X	35.113	1	35.113	5.052*
I x B x X	1.012	1	1.012	0.146
T x B x X	10.512	1	10.512	1.513
I x T x B x X	5.513	1	5.513	0.793
S	444.792	64	6.950	

* $p < .05$

** $p < .01$

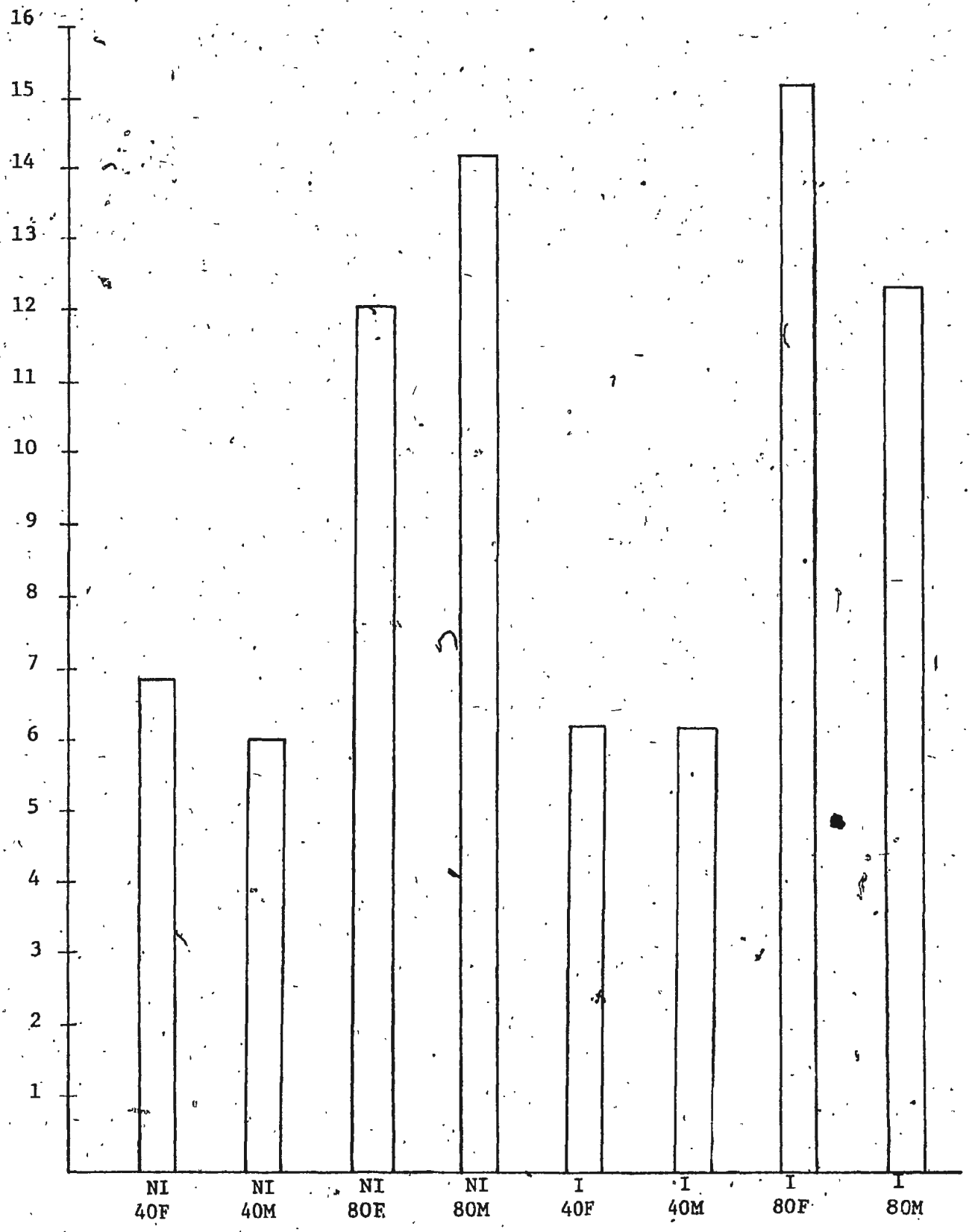

Figure 1. Incentive by Training Level by Sex Interaction

NI - NO INCENTIVE
I - INCENTIVE
F - FEMALE
M - MALE

Table 3

Analysis of Variance on Post ISR Scores

Source	Ss	df	MS	F
INCENTIVE (I)	0.312	1	0.312	0.043
TRAINING (T)	409.511	1	409.511	56.050**
BASELINE (B)	103.512	1	103.512	14.168**
SEX (X)	3.612	1	3.612	0.494
I x T	0.013	1	0.013	0.002
I x B	0.113	1	0.113	0.015
I x X	0.513	1	1.513	0.207
T x B	2.813	1	2.813	0.385
T x X	13.612	1	13.612	1.863
B x X	0.113	1	0.113	0.015
I x T x B	0.612	1	0.612	0.084
I x T x X	0.113	1	0.113	0.015
I x B x X	2.112	1	2.112	0.289
T x B x X	9.112	1	9.112	1.247
I x T x B x X	0.313	1	0.313	0.043
S	467.595	64	7.306	

** $p < .01$

of 40%. The low baseline subjects had a significantly smaller mean number of ISRs than did the high baseline subjects.

(c) Confidence Scores

The analysis of questionnaire confidence scores was undertaken by ranking the number of times the subject chose (a) confidence ratings of 1 or 2 and (b) confidence ratings of 4 or 5. An analysis of variance on the subject's choice of confidence scores 1 or 2 yielded a significant Training main effect alone ($F = 9.837$, $p < .01$) (See Appendix B, Table H). The subjects trained to a level of 40% ($\bar{X} = 2.8$) had more of a tendency to choose these lower confidence ratings than did the subjects trained to a level of 80%. ($\bar{X} = 1.425$).

The analysis of variance on the number of times the subject chose confidence ratings of 4 or 5 indicated a significant Training main effect ($F = 24,641$, $p < .01$), as well as a significant Incentive x Sex interaction ($F = 8.490$, $p < .01$) (See Appendix B, Table I). The subjects trained to a level of 80% ($\bar{X} = 6.675$) chose confidence ratings of 4 or 5 more often than did the subjects trained to a level of 40% ($\bar{X} = 4.375$).

An analysis of the significant interaction by means of the Newman-Keuls procedure indicated that males under the no incentive condition had more of a tendency to choose confidence ratings of 4 or 5 than did males under the incentive condition ($p < .05$) (See Appendix B, Table J).

A consistency score for each subject, defined in

terms of the number of times the subject's SR of a particular nonsense syllable during the test phase matched his choice of the "correct syllable" on the questionnaire, was analysed according to an analysis of variance design. The particular measure used was $SR_1 + SR_2$, that is, the matching of the particular nonsense syllable, presented twice during the test phase, with the same nonsense syllable presented on the questionnaire. Results of the analysis yielded significant Training ($F = 29.591$, $p < .01$) and Sex ($F = 4.765$, $p < .05$) main effects (See Appendix B, Table K). The means for the Training by Sex conditions are listed in Appendix B, Table L. The subjects trained to a criterion of 80% had a higher overall mean consistency score than the subjects trained to 40% only. In addition, the females, as opposed to the males, appeared to be more consistent.

A second analysis was carried out on SR inconsistency scores, that is, the number of time the subject's SR of a particular nonsense syllable during the test phase failed to match his choice of the correct syllable on the questionnaire. Results indicated both significant Training ($F = 6.166$, $p < .05$) and Baseline ($F = 17.756$, $p < .01$) main effects (See Appendix B, Table M). The means for these Training by Baseline conditions are listed in Appendix B, Table N. The subjects trained to a level of 40% were more inconsistent than the subjects trained to

a level of 80%. In addition, the high baseline subjects had a higher mean tendency toward inconsistency than did the low baseline subjects.

In summary the data of the current investigation show the following major findings:

(a) Higher baseline scores for low baseline males than for low baseline females.

(b) A greater SR change for low than for high baseline subjects.

(c) A greater SR change after 80% than after 40% training

(d) A greater increase in accuracy (as reflected by CSR scores) for the females under the incentive condition and 80% training than for the females under the no incentive condition and 80% training.

(e) Greater consistency between the SR of a response during the test phase and the choice of this particular response on the questionnaire after 80% than after 40% training.

(f) Greater inconsistency for the high baseline than for the low baseline subjects, and greater inconsistency after 40% than after 80% training.

DISCUSSION

The results of this particular study, in relation to both SR behavior change and SR accuracy, were consistent with results obtained earlier by Kozma and Easterbrook, (1973).

It is interesting to note that the lack of low baseline male self-reinforcers, as reported by Easterbrook (1973), was present also in these data. The particular distributions of baseline scores for the males and females appear to be somewhat fixed.

This study, unlike results obtained by Kozma and Easterbrook (1973), reported a significant change in the SR behavior of the female subjects. This significant effect, however, can be explained in terms of training. The female low baseline self-reinforcers began with very low rates of SR behavior and increased these rates as a result of exposure to training. The male low baseline self-reinforcers began with initially higher rates of SR behavior and these rates increased to a lesser degree as a result of training. The lack of any significant sex difference in the analysis of ISR scores is due to the fact that the high baseline subjects accounted for a considerable portion of the variance in this case.

The direction of the results obtained on the analyses of both CSR and ISR scores for the subjects under the no incentive condition was consistent with earlier findings (Kozma and Easterbrook, 1973).

While the incentive increased the SR accuracy of the female subjects after 80% training, no such increase was observed in the males.

Moreover, the effect was obtained through CSR increase, rather than the expected ISR decrease. These results are thus inconsistent with those reported by Marston and Kanfer (1963). There are two possible reasons for such a discrepancy in results. Firstly, 80% training leaves few ISR's to reduce, and secondly, subjects in the latter study were trained under incentive conditions and may thus have become more sensitized to nonreinforced responses than they were in the current investigation.

The expected higher confidence ratings on the part of the high baseline subjects did not occur. The reason for this may lie in the possible general high level of arousal, anxiety, need for approval, or fear of failure of the high baseline subjects. Increases in information, as reflected by a higher training level, led to greater consistency between the subjects' test phase SR responses and questionnaire SR responses than did baseline grouping. It is, however, noteworthy, that high baseline more so than low baseline subjects chose as "correct", responses for which they had not previously reinforced themselves. The relationship between a chosen response and reinforcement for high baseline subjects thus appears to be much more spurious than it seems to be for low baseline subjects. This lack of a connection between a response and SR for high baseline subjects may account for their relatively greater number of ISRs.

REFERENCES

Archer, C. J. "A Reevaluation of the Meaningfulness of all Possible Consonant Vowel Consonant Trigrams," Psychological Monographs, General and Applied, Vol. 74, whole #497, 1960.

Balanova 5, from York University Institute for Behavioral Research, Data Analysis Section, writeup date 28/10/68

Bartol, Geoffrey H., and Duerfeldt, Pryse, H. "Self-Reinforcing Behavior: The Effects of Base Rate and Dependency," The Journal of General Psychology, 1970, 83, 151-161.

Easterbrook, Pamela, "Self-Reinforcement as a Function of Baseline Score and Level of Training," Unpublished Master's Thesis, Memorial University of Newfoundland, 1973.

Kanfer, Frederick H. "Self Monitoring: Methodological Limitations and Clinical Applications," Journal of Consulting and Clinical Psychology, 1970, 35, 2, 148-152.

Kanfer, Frederick H., and Duerfeldt, Pryse, H. "Effects of Pretraining on Self-Evaluation and Self-Reinforcement," Journal of Personality and Social Psychology, 1967, 7, 2, 164-168.

Kanfer, Frederick, H., Duerfeldt, Pryse H., and LePage, Anthony L. "Stability of Patterns of Self-Reinforcement," Psychological Reports, 1969, 24, 663-670.

Kanfer, Frederick, H., and Marston, Albert R. "Determinants of Self-Reinforcement in Human Learning," Journal of Experimental Psychology, 1963, 66, 245-454 (a).

Kanfer, Frederick H., and Marston, Albert R. "Conditioning of Self-Reinforcing RDsponses: An Analogue to Self-Confidence Training," Psychological Reports, 1963, 13, 63-70 (b).

Kirk, Roger C. Experimental Design: Procedures for the Behavioral Sciences". California: Brooks Cole Publishing Company, 1968.

Kozma, Albert and Easterbrook, Pamela. "The Effects of Baseline Self-Reinforcement Behavior and Training Level on Post Training Self-Reinforcement Behavior," Journal of Experimental Psychology, 1973 (in press).

Marston, Albert R. "Variables Affecting Incidence on Self-Reinforcement," Psychological Reports, 1964, 879-884.

Marston, Albert R., and Kanfer, Frederick H. Human Reinforcement: Experimenter and Subject Controlled," Journal of Experimental Psychology, 1963, 66, 1, 91-94.

Skinner, B. F. Science and Human Behavior. New York: Macmillan, 1953.

Winer, B.J. Statistical Principles in Experimental Design. New York: McGraw Hill, 1962.

Appendix A

List and Titles of Figures

APPENDIX A

Figure 1

5 Sample Slides

FID (52)	*SEB (48)
PAJ (48)	JOQ (52)

*POH (52)	CEP (51)
JEY (52)	TAQ (51)

MUZ (49)	VID (50)
*NEF (49)	QAL (48)

LEH (52)	MEZ (52)
*VEP (48)	KYX (50)

*YUC (51)	NUW (52)
MIF (52)	PYR (50)

10 Stimulus Slides

SAH (50)	KES (50)
*GEY (52)	LEK (50)

CYS (48)	KYL (49)
VOD (50)	*QIK (50)

*BYR (52)	MYK (48)
DOH (51)	SYX (50)

CIF (48)	FOW (50)
BYG (49)	*VIZ (51)

DYR (48)	*POZ (50)
ROH (50)	KAC (48)

SOQ (49)	KIZ (48)
QAD (48)	BAQ (51)

*NOH (52)	HAX (48)
FOT (52)	FAW (52)

LAH (50)	NYR (52)
GUK (50)	*LOH (50)

DAK (52)	MUW (48)
WOH (50)	*YOM (51)

NOY (48)	BYC (51)
REW (48)	*HEJ (48)

Figure 2

5 Sample Slides

Slide 4	#3
Slide 1	#2
Slide 2	#1
Slide 5	#1
Slide 3	#3

10 Stimulus Slides

Block I		Block II	
slide 10	#2	slide 14	#4
slide 8	#1	slide 13	#4
slide 12	#1	slide 7	#4
slide 11	#3	slide 6	#3
slide 9	#4	slide 11	#3
slide 15	#4	slide 9	#4
slide 6	#3	slide 15	#4
slide 7	#4	slide 10	#2
slide 14	#4	slide 12	#1
slide 13	#4	slide 8	#1

Block III		Block IV	
slide 8	#1	slide 15	#4
slide 9	#4	slide 10	#2
slide 7	#4	slide 11	#3
slide 15	#4	slide 13	#4
slide 6	#3	slide 7	#4
slide 14	#4	slide 14	#4
slide 10	#2	slide 12	#1
slide 13	#4	slide 9	#4
slide 12	#1	slide 8	#1
slide 11	#3	slide 6	#3

Block V

slide 9	#4
slide 11	#3
Slide 8	#1
slide 12	#1
slide 6	#3
slide 13	#4
slide 14	#4
slide 10	#2
slide 7	#4
slide 15	#4

Block VI

slide 12	#1
slide 11	#3
slide 14	#4
slide 7	#4
slide 15	#4
slide 8	#1
slide 10	#2
slide 13	#4
slide 9	#4
slide 6	#3

Block VII

slide 11	#3
slide 6	#3
slide 13	#4
slide 15	#4
slide 7	#4
slide 10	#2
slide 8	#1
slide 12	#1
slide 9	#4
slide 14	#4

Figure 3

INSTRUCTIONS FOR THE EXPERIMENT: PLEASE READ CAREFULLY!

WELCOME TO THIS EXPERIMENT!

FIRST OF ALL, TAKE A LOOK AT THE SMALL BLANK SCREEN TO THE LEFT OF THIS SHEET OF PAPER. SOON, 4 NONSENSE SYLLABLES WILL APPEAR ON THIS SCREEN. YOUR JOB WILL BE TO DECIDE WHICH OF THE 4 NONSENSE SYLLABLES IS CORRECT. THERE IS ONLY ONE CORRECT ANSWER EACH TIME THE 4 SYLLABLES ARE SHOWN.

NOW, TAKE A LOOK AT THE SCREEN AGAIN. THE 4 NONSENSE SYLLABLES WILL APPEAR IN THE 4 CORNERS OF THE SCREEN AS SUCH:

1	2
3	4

THESE SYLLABLES WILL APPEAR FOR ONLY 5 SECONDS.

NOW, LOOK AT THE PANEL LOCATED DIRECTLY BELOW THE SCREEN. IT HAS AN ORANGE LIGHT, A RED PUSH-BUTTON, AND 4 SMALLER RED PUSH-BUTTONS. EACH OF THESE SMALLER RED PUSH-BUTTONS CORRESPONDS TO THE NUMBERS IN THE ABOVE DIAGRAM:

1 2

3 4

YOU USE THESE PUSH-BUTTONS WHEN YOU HAVE DECIDED WHICH ONE OF THE SYLLABLES PRESENTED IS CORRECT. SO, IF WHEN YOU SEE THE 4 SYLLABLES YOU DECIDE THAT #4 IS CORRECT, YOU WOULD PUSH BUTTON #4 TO INDICATE THIS. THEN, IF YOU FEEL THAT YOU HAVE MADE THE RIGHT DECISION, YOU SHOULD PUSH THE LARGER RED PUSH-BUTTON THAT'S LOCATED ABOVE THE OTHER 4. WHEN YOU PUSH THIS BUTTON, THE ORANGE LIGHT WILL COME ON.

REMEMBER, THE SYLLABLES WILL BE SHOWN FOR ONLY 5 SECONDS, AND THEN YOU'LL HAVE ANOTHER 5 SECONDS TO DECIDE ON THE ANSWER, PUSH THE CORRECT BUTTON, AND PUSH THE LARGER RED BUTTON IF YOU FEEL YOU MADE THE CORRECT CHOICE. SO, REMEMBER TO ACT AS QUICKLY AS POSSIBLE. NOW, LET"S TRY PRACTISING WITH A FEW SAMPLE SLIDES.

Figure 4

Part A

FOR EACH OF THE FOLLOWING, CHOOSE THE CORRECT SYLLABLE FROM AMONG THE 4 PRESENTED AND THEN INDICATE HOW CERTAIN YOU ARE THAT YOUR CHOICE IS CORRECT BY CIRCLING THE APPROPRIATE NUMBER OF THE 5 POINT SCALE

_____

CYS KYL A. CORRECT SYLLABLE IS ___

_____ B. I AM

VOD QIK

_____ not at all certain very certain

1 2 3 4 5

_____

SOQ KIZ A. CORRECT SYLLABLE IS ___

_____ B. I AM

QAD BAQ

_____ not at all certain very certain

1 2 3 4 5

_____

DAK MUW A. CORRECT SYLLABLE IS ___

_____ B. I AM

very certain

WOH YOM

_____ not at all certain 2 3 4 5

_____

LAH NYK A. CORRECT SYLLABLE IS ___

_____ B. I AM

very certain

GUK LOH

_____ not at all certain 2 3 4 5

_____

SAH KES A. CORRECT SYLLABLE IS ___

_____ B. I AM

GEY LEK very certain

_____ not at all certain 2 3 4 5

_____

DYR , POZ A CORRECT SYLLABLE IS ____

_____ B. I AM

ROH KAC

_____ not at all certain very certain

1 2 3 4 5

_____

BYR MYK A. CORRECT SYLLABLE IS ____

_____ B. I AM

DOH SYX

_____ not at all certain very certain

1 2 3 4 5

_____

NOH HAX A. CORRECT SYLLABLE IS ____

_____ B. I AM

FOT FAW

_____ not at all certain very certain

1 2 3 4 5

_____

NOY BYC A. CORRECT SYLLABLE IS ____

_____ B. I AM

REW HEJ

_____ not at all certain very certain

1 2 3 4 5

_____

CIF FOW A. CORRECT SYLLABLE IS ____

_____ B. I AM

BYG VIZ

_____ not at all certain very certain

1 2 3 4 5

Part B

Answer the following questions with either a YES or a NO or with as few words as possible.

1. Did you believe that you would be paid at the rate of 25¢ for a correct response and lose 25¢ for an incorrect response? ____

2. Did the money influence your decision when you made your response? ____

3. Did the money make you more cautious when you made your response? ____

4. Did the money make you feel less cautious and feel more like gambling to try to win when you made your response? ____

5. Did you believe all along that you would be paid the total amount that you actually won at the end of the experiment? ____

6. Was the amount of money offered enough to make you want to work to respond correctly, ____

7. What do you think the purpose was of including this reward of 25¢? ____

APPENDIX B

List and Titles of Tables

Appendix B

Table A

Baseline by Sex Mean Baseline Scores and Ranges

	LOW	HIGH	
Female	Range 0-5	16-20	
	Mean .9	17.6	$\bar{X}$ = 9.25
Male	Range 0-7	16-20	
	Mean 2.8	17.7	$\bar{X}$ = 10.25
	$\bar{X}$ = 1.85	$\bar{X}$ = 17.65	

Table B

Mean Pre and Post SR Scores

		LOW				HIGH			
		Female		Male		Female		Male	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
No Incentive	40%	.8	11.8	3	9.4	17	17	17.6	14.6
	80%	1.2	11.6	2.8	14.8	17.8	16	17.8	17.4
Incentive	40%	.4	12.4	3.2	11.2	17.6	15.8	18.2	15.2
	80%	1.2	16.4	2.2	13.(	18	18	17.2	17.2

Table C

Training by Baseline by Sex Mean SR Difference Scores

	LOW		HIGH		
	Female	Male	Female	Male	
40%	11.5	7.2	-.899	-3	$\overline{X}$ = 3.7
80%	12.8	11.7	-.899	-.199	$\overline{X}$ = 5.85
	$\overline{X}$ = 5.625	$\overline{X}$ = 10.8	$\overline{X}$ = -1.25	$\overline{X}$ = 3.925	

Table D

Analysis of Variance on SR Difference Scores (subjects who believed the incentive manipulation)

Source	Ss	df	MS	F
INCENTIVE (I)	4.418	1	4.418	0.293
TRAINING (T)	84.104	1	84.104	5.585*
BASELINE (B)	2240.01	1	2240.01	148.746**
SEX (X)	39.552	1	39.552	2.626
I x T	10.704	1	10.704	0.711
I x B	2.434	1	2.434	0.162
I x X	2.593	1	2.593	0.172
T x B	24.671	1	24.671	1.638
T x X	27.615	1	27.615	1.834
B x X	3.802	1	3.802	0.253
I x T x B	0.482	1	0.482	0.032
I x T x X	30.539	1	30.539	2.028
I x B x X	0.277	1	0.277	0.018
T x B x X	0.330	1	0.330	0.022
I x T x B x X	5.792	1	5.792	0.385
S	828.264	55	15.060	

* $p < .05$

** $p < .01$

Table E

Training by Baseline Mean CSR Scores

	LOW	HIGH	
40%	5.65	7.45	$\overline{X}$ = 6.55
80%	12.70	13.85	$\overline{X}$ = 13.275
	$\overline{X}$ = 9.175	$\overline{X}$ = 10.65	

Table F

Newman-Keuls Multiple Comparison

of Mean Post CSR Scores

	NI40M	I40F	I40M	NI40F	NI80F	I80M	NI80M	I80F
	-6	6.7	6.7	6.8	11.6	12.7	13.7	15.1
NI40M		.7	.7	.8	5.6**	6.7**	7.7**	9.1**
I40F			0	.1	4.9**	6**	7**	8.4**
I40M				.1	4.9**	6**	7**	8.4**
NI40F					4.8**	5.9**	6.9**	8.3**
NI80F						1.1	2.1	3.5*
I80M							1	2.4
NI80M								1.4

* p <.05
** p <.01

NI - NO INCENTIVE

I - INCENTIVE

F - FEMALE

M - MALE

Table G

Training by Baseline Mean ISR Scores

	LOW	HIGH	
40%	5.55	8.20	$\overline{X}$ = 6.875
80%	1.40	3.30	$\overline{X}$ = 2.350
	$\overline{X}$ = 3.475	$\overline{X}$ = 5.750	

Table H

Analysis of Variance on Confidence Ratings of 1 or 2

Source	Ss	df	MS	F
INCENTIVE (I)	.312	1	.312	0.081
TRAINING (T)	37.812	1	37.812	9.837**
BASELINE (B)	13.613	1	13.613	3.541
SEX (X)	0.013	1	0.013	0.003
I x T	.113	1	.113	0.030
I x B	.613	1	.613	0.159
I x X	10.513	1	10.513	2.735
T x B	1.512	1	1.512	0.393
T x X	13.612	1	13.612	3.541
B x X	1.013	1	1.013	0.263
I x T x B	1.513	1	1.513	0.394
I x T x X	2.113	1	2.113	0.550
I x B x X	1.012	1	1.012	0.263
T x B x X	0.113	1	0.113	0.030
I x T x B x X	0.112	1	0.112	0.030
S	245.998	64	3.844	

** $p < .01$

Table I

Analysis of Variance on Confidence Ratings of 4 or 5

Source	Ss	df	MS	F
INCENTIVE (I)	2.450	1	2.450	0.571
TRAINING (T)	105.800	1	105.800	24.641**
BASELINE (B)	0.800	1	0.800	0.186
SEX (X)	1.250	1	1.250	0.291
I x T	1.800	1	1.800	0.419
I X B	1.800	1	1.800	0.419
I x X	36.450	1	36.450	8.489**
T x B	1.250	1	1.250	0.291
T x X	0.200	1	0.200	0.047
B x X	5.000	1	5.000	1.165
I x T x B	0.450	1	0.450	0.105
I x T x X	7.200	1	7.200	1.677
I x B x X	0.200	1	0.200	0.047
T x B x X	1.250	1	1.250	0.291
I x T x B x X	1.250	1	1.250	0.291
S	274.795	64	4.294	

*

** $p < .01$

Table J

Newman-Keuls Multiple Comparison of

Confidence Ratings of 4 or 5.

	I M	NI F	I F	NI M
	4.55	5.15	6.15	6.25
I M		.60	1.60*	1.70**
NI F			1.00	1.10
I F				.10

* $p < .05$

** $p < .01$

I - INCENTIVE

NI - NO INCENTIVE

F - FEMALE

M - MALE

Table K

Analysis of Variance on $SR_1 + SR_2$ Consistency Scores

Source	Ss	df	MS	F
INCENTIVE (I)	10.513	1	10.513	1.010
TRAINING (T)	308.112	1	308.112	29.591**
BASELINE (B)	13.612	1	13.612	1.307
SEX (X)	49.612	1	49.612	4.765*
I x T	21.013	1	21.013	2.018
I x B	0.113	1	0.113	0.011
I x X	0.613	1	0.613	0.059
T x B	9.113	1	9.113	0.875
T x X	2.113	1	2.113	0.203
B x X	0.113	1	0.113	0.011
I x T x B	0.112	1	0.112	0.011
I x T x X	27.612	1	27.612	2.652
I x B x X	30.013	1	30.013	2.882
T x B x X	15.312	1	15.312	1.471
I x T x B x X	2.113	1	2.113	0.203
S	666.394	64	10.412	

* $p < .05$

** $p < .01$

Table L

Training by Sex Mean Consistency Scores

	Female	Male	
40%	9.75	7.85	$\bar{X} = 8.80$
80%	13.35	12.10	$\bar{X} = 12.725$
	$\bar{X} = 11.55$	$\bar{X} = 9.975$	

Table M

Analysis of Variance on $SR_1 + SR_2$ Inconsistency Scores

Source	Ss	df	MS	F
INCENTIVE (I)	3.200	1	3.200	0.362
TRAINING (T)	54.450	1	54.450	6.166*
BASELINE (B)	156.800	1	156.800	17.756**
SEX (X)	18.050	1	18.050	2.044
I x T	3.200	1	3.200	0.362
I x B	8.450	1	8.450	0.957
I x X	1.800	1	1.800	0.204
T x B	0.800	1	0.800	0.091
T x X	11.250	1	11.250	1.274
B x X	0.000	1	0.000	0.000
I x T x X	0.050	1	0.050	0.006
I x T x L	0.000	1	0.000	0.000
I x B x X	14.450	1	14.450	1.636
T x B x X	9.800	1	9.800	1.110
I x T x B x X	0.050	1	0.050	0.006
S	565.195	64	8.831	

* $p < .05$

** $p < .01$

Table N

Training by Baseline Mean Inconsistency Scores

	LOW	HIGH	
40%	3.15	6.15	$\overline{X}$ = 4.65
80%	1.70	4.30	$\overline{X}$ = 3.00
	$\overline{X}$ = 2.425	$\overline{X}$ = 5.225	