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ABSTRACT

This study investigated the relationship of two anxiety measures (the State-Trait Anxiety Inventory-Trait Form and the S-R Inventory of Anxiousness-Exam Form) to performance on a visual concept-learning task with embedded criterial information. The effect on anxiety reduction of cueing criterial information was also examined, and two levels of embedment were investigated. Two treatment groups of 24 college students each located embedded figures, identified the concept criteria, and identified non-example concept set members, with one group using materials cued with red outlining. Significant main effects were found for trait anxiety with the lightly and heavily embedded figure scores, and for cueing with the heavily embedded figure scores. A significant interaction was indicated between trait anxiety and cueing for the heavily embedded figures. A non-significant interaction was found for the test anxiety measure with cueing, with the high-anxious, cued subjects scoring the highest and the high-anxious, non-cued subjects scoring the lowest. A high degree of both types of anxiety had a severe debilitating effect on non-cued task performance. Cueing greatly reduced the influence of both measures and was associated with superior performance by the high test-anxious, cued subgroup. This report includes 26 references and 13 data tables. The two anxiety measures are appended. (LMM)

# CUEING AND ANXIETY IN A VISUAL CONCEPT LEARNING TASK

BY

Philip M. Turner

# CUEING AND ANXIETY IN A VISUAL CONCEPT LEARNING TASK

## ABSTRACT

Cueing to increase the probability that the learner will receive the criterial information is an established procedure in the production of instructional visuals. Research suggests, however, that indiscriminate use of cues may actually be counterproductive.

Anxiety has been shown to affect the entire range of learning with a general cumulative negative effect. This is true particularly with difficult tasks and high states of anxiety. Of particular interest to this study was the position that anxiety can cause difficulty at the input stage of learning from a visual cue in two ways. These are (1) a narrowing of perception to include only the salient features and (2) a heightened distractibility.

Purpose

The first purpose of this study was to determine the relationship of two measures of anxiety, the State-Trait Anxiety Inventory-Trait Form and the S-R Inventory of Anxiousness-Exam Form, with performance on a visual concept learning task where the criterial information was embedded. The second purpose was to determine if cueing the criterial information reduces any negative effect found.

## Design

Two treatment groups were utilized consisting each of 24 randomly selected senior-level and graduate students. Treatment Group I located embedded figures, identified the concept criteria, and identified non-example concept set members. Treatment Group II performed the same task with the examples and non-examples cued by outlining in red. Degree of embedding was investigated by the use of two levels of embedment.

## Results and Analyses

Significant main effects were found for trait anxiety with the lightly and heavily embedded figure scores and for cueing with the heavily embedded figure scores. A significant interaction was indicated between the trait anxiety variable and cueing for the heavily embedded figures. This interaction was caused by the low scores for high anxious subjects utilizing the non-cued treatment. A non-significant interaction was found for the test anxiety measure with cueing. The high anxious cued subjects scored the highest and the high anxious non-cued subjects scored the lowest.

Utilizing a stepwise multiple regression, it was found that the combined variance accounted for by the two anxiety variables dropped from 34% for the lightly embedded non-cued figures to 4% for the lightly embedded cued figures. For the corresponding heavily embedded figure scores, this variance was reduced from 54% to 7%.

## Discussion

The presence of a high degree of both anxiety types seemed to have a severe debilitating effect on performance of the task without the aid

of cues. Cueing drastically reduced the influence of both measures and actually was associated with superior performance by the high test anxious cued subgroup.

Further study is recommended including manipulation of time variables and cueing types; a testing of actual instructional materials; and a further refinement of techniques to isolate the effects of anxiety on the input stage of learning. The addition of cues, especially where embedded criterial information is presented to highly anxious learners is recommended.

# Cueing and Anxiety in A Visual Concept Learning Task

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## Cueing and Anxiety in a Visual Concept Learning Task

Many instructional materials utilize complex visuals in which the criterial information is not salient. In order to assist the learner, the addition of cues is an accepted practice of the instructional visual designer who decides which attributes are criterial and makes them salient. This is done in a number of ways including underlining, outlining, and the addition of superscripts or pointers. A rationale for this practice is that if the learner is directed to the important parts of a visual, there will be a greater chance that the "correct" information will be received and processed and that learning will be enhanced (Bruner, Goodnow, and Austin, 1956).

While the addition of various types of cues has been shown to be effective (Levin, J. R., Bender, B. G., and Lesgold, A. M., 1976; Smith, Farquhar and Thomas, 1965; Weiss and Margolius, 1954) caveats have emerged as to their usage. There is evidence that the addition of cues is task and learner specific, i.e. certain cues are effective for some instructional situations and learners and not for others (Jones, 1962; Dwyer, 1978; Smith and Farquhar, 1965; Bovey, 1981). Also, the additional cost usually involved in the insertion of cues must be considered. This study investigates the use of cues in a visual learning task utilizing embedded information and the interaction of this practice with anxiety, a learner personality characteristic.

Color Cues

While the random use of color cues has been found to decrease performance due to increased "signal-to-noise ratio" (Green and Anderson, 1956), color has been shown to be an ideal cueing technique in aiding the learner in locating embedded information (Jones, 1962; Smith, Farquhar, and Thomas, 1965). In a study done in 1963, Smith found that the addition of redundant color cues resulted in an average time to criterion reduction of 65% in a visual search task and 69% in a counting task with a 76% reduction in counting errors. By cueing certain items, search time is virtually directly related to the proportion of criterial items within cued items (Green and Anderson, 1956).

Anxiety

General effects of anxiety on learning. Anxiety, as used in this study, consists of the two conceptually distinct components of worry and arousal (Liepert and Morris, 1967; Eysenck, 1979). The worry component consists of the tendency for negative self-evaluation, a great deal of concern for level of performance, and negative task expectations. On the other hand, the arousal component involves changes in physiological functioning with resultant feelings of tension and nervousness.

Tobias (1979) advances a model for studying the general effects of anxiety on learning from instruction. In effect, he utilizes a classical information processing model including input, processing, and output and calls for the researcher to delineate which steps are to be investigated in a study in terms of the effects of anxiety.

While high levels of the worry component of anxiety would most likely have a negative effect on all the stages of learning by diverting attention

from the task at hand, such is not the case for the arousal component. Among the effects of higher arousal, according to Hockey (1979), is an increased rate of work or "throughput." For simple tasks, this can offset the reduction in primary memory capacity, increased selectivity of attention, and increased selectivity of response which are also the results of higher levels of arousal, as well as offset the negative effects of the worry component (see Figure 1). For more complex tasks, this throughput advantage is overcome by the negative aspects of higher arousal in conjunction with the worry components. The interactions tend to produce an inverted "U" shaped graph when performance is compared with anxiety.

Effect of anxiety on the input process. Beyond Hockey's prediction that higher arousal will affect the input process through the increased selectivity of attention, there is additional supporting evidence. Easterbrook (1959) posits that, whatever the task, arousal has the effect of reducing the use of cue information. Broadbent (1978), in research on arousal due to noise, has found that as a person becomes more aroused, there is a tendency to select information from a smaller area. Other studies where stressful situations have been linked to a narrowing of attention to include only salient cues include those of Agnew and Agnew (1963), Tecce and Happ (1964), Wachtell (1966, 1968), West, Lee, and Anderson (1969), Wine (1971), and Zaffy and Bruning (1966).

The effect of the worry component on the input mode would also be in the direction of narrowing the amount of information input. The greater the amount of task irrelevant activities, which might include concentration on failure consequences (Deffenbacher, 1978), the less

opportunity for peripheral cue utilization. This is due to the repeated necessity of "re-focusing" on the criterial information.

In terms of the input of information in a learning task, the consensus of the literature is that the anxious learner will tend to be limited to, and dominated by, the salient cues in an instructional visual. This study investigates the extent to which color cues, utilized in the input mode of a visual concept acquisition task, will ameliorate the negative effect of anxiety in a task where the criterial information is not salient. The effect of the degree of embedding is also investigated.

## METHOD

### Subjects

Subjects in the study were 48 senior-level and above students (four males and 44 females) enrolled in graduate courses. The proportion of males and females is standard for students in this division of the University and should allow for generalizability to the larger population of which these students were a sample. The subjects were drawn from introductory courses and participation was voluntary, with all but two students from those courses participating. The procedures used were approved by the Institutional Review Board for the Protection of Human Subjects. Subjects were assigned randomly to one of two treatment groups.

### Experimental Task

The experimental task for Treatment Group I (Non-Cued) consisted of a visual concept acquisition task in which the criterial information was not the salient portion of the visual. Each subject was required to

(a) locate five geometrical figures in the top half of a form which were embedded in a ground of overlapping larger figures, (b) to identify the criterial attributes that made each a member of the concept set, and (c) to delineate three examples from three non-examples on an answer sheet. On the bottom half of the form embedded in a similar background were five non-examples to assist in criteria identification. Twenty sets of figures were used. One half of the sets had backgrounds consisting of one-third fewer figures, along with bolder member set figure outlines, in order to investigate for degree of embedding (see Figure 2).

Treatment Group II (Cued) performed the same task varying only in that the examples and non-examples were outlined in red to make them the salient portion of the visual. Red was chosen since it tends to produce the quickest response time in location tasks (Reynolds, White, and Hilgendorf, 1972).

Procedure

The subjects were provided packets containing instruments and figure sets. At the outset they completed two anxiety inventories. The first, the A-Trait Scale of the State-Trait Anxiety Inventory (STAI), consisted of twenty statements which asked the subjects to describe how they generally felt. The STAI has been used in other learning task studies and has extensive reliability and validity data (Spielberger, Gorsuch, and Lushene, 1970). The second inventory used, the S-R Inventory of Anxiousness, Exam Form, is a test anxiety measure and has also been used in learning task studies (Ender, Hunt, and Rosenstein, 1962). The rational for utilizing these specific anxiety measures, aside from representing

general and exam specific measures, was that an examination of the test revealed that the majority of the items on the STAI seem to reflect the worry component, and the majority of the items on the exam scale seemed to reflect physiological symptoms of arousal. (See Appendix A for tests.)

Subjects were given fifteen seconds to locate each set of example and non-example figures, decide on the concept set criteria, and then given five seconds to circle the three examples on the answer sheet. Subjects were told to circle three and only three figures each time, even if this involved guessing. In explaining the task, ego-involving instructions were utilized in an attempt to provide an environment that was as close as possible to an actual classroom situation. The subjects were instructed to imagine that they were participating in an assignment that accounted for a major portion of a course grade. Time limits were indicated through the use of a buzzer.

Two practice problems were worked initially to insure that the subjects understood the directions. Following the instructions and practice, subjects completed the 20 problem sets and returned the material to their folder.

Two scores were generated for each subject. One score for the heavily and one score for the lightly embedded figures identified correctly with a possible range for each score of from zero to 30. Anxiety scores in both treatment groups were dichotomized about the median for each anxiety measure. A series of two-way analyses of variance were performed with treatment type paired with anxiety level as independent variables and subtest scores as dependent variables.

## RESULTS AND ANALYSES

### Trait Anxiety/Lightly Embedded Figures

The trait anxiety variable engendered significant main effects on the lightly embedded figure scores (see Table 1). While the mean score for the high anxious non-cued treatment subgroup ($\underline{X}$ = 22.17) was the lowest of the four subgroups (see Table 2), this interaction was not significant. Evidently, for this shallow level of embedding, the negative effects of trait anxiety were evenly dispersed across the stages of learning.

### Trait Anxiety/Heavily Embedded Figures

Both the trait anxiety variable and cueing treatment generated significant main effects for the heavily embedded figure score. A significant interaction was found between these variables as well (see Table 3). The significant main effects for both variables were generated almost entirely by the lower performance ($\underline{X}$ = 18.83) of the high trait anxiety, non-cued treatment subgroup. The other subgroup scores were similar to those obtained on the lightly embedded figures (see Table 4).

### Test Anxiety

The analyses of variance utilizing test anxiety and cueing as independent variables and lightly and deeply embedded figure scores as dependent variables yielded a main effect only for cueing in the heavily embedded figures (see Tables 5-6). While no significant interactive effects were found, a study of the results shows that for both the lightly and heavily embedded figure scores, the high anxious cued subjects scored the highest ($\underline{X}_l$ = 26.46, $\underline{X}_h$ = 26.15) and the high anxious non-cued subjects scored the lowest ($\underline{X}_l$ = 24.1, $\underline{X}_h$ = 20.9; see Tables 7-8).

Multiple Regression

Several factors evident at this stage of the study suggested the employment of a stepwise multiple regression procedure to investigate the cumulative effect of the anxiety variables on both lightly and heavily embedded figure scores. These factors were:

1) The direction of influence for both anxiety variables was as expected, i.e. the high anxiety non-cued treatment groups did less well.
2) This direction was also reflected in the significant correlation coefficients for non-cued figure scores and both measures of anxiety (see Table 9).
3) There was a non-significant correlation between the anxiety variables ($r$ = -.06).

Non-cued treatment group scores. The trait and test anxiety variables were entered into the equation as independent variables with lightly and heavily embedded figure scores as dependent variables for each of the two treatment groups. As can be seen in Table 10, for the lightly embedded figure scores in the non-cued group, the trait anxiety measure entered first and accounted for 22% of the variance. The test anxiety measure accounted for an additional 11.2% of the variance for a total explanation of 34%.

For the heavily embedded figure score, the variables entered in the same order with increased variance accounted for (see Table 11). The trait anxiety score accounted for 35% of the variance with the test anxiety measure increasing the total variance accounted for to 54%.

Cued treatment group scores. If anxiety was acting as an agent in interfering at the input stage by preventing the quick location of embedded information, a marked decrease in the influence of anxiety when the information was no longer embedded would be expected. As can be seen in Tables 12 and 13, this was the result.

For the lightly embedded figures, the total variance accounted for dropped from 34% (non-cued) to 4.5% when cues were added. For heavily embedded figures, the substantial influence of the anxiety variables in the non-cued treatment group declined from 54% to 7.4% in the cued treatment group.

## DISCUSSION AND CONCLUSIONS

This study was designed to investigate the effect of trait and test anxiety on the input process of a visual concept acquisition task where the criterial information was embedded. Furthermore, if such a negative relationship were found, could cueing to make the criterial information salient reduce the effect of these types of anxiety?

The construct measured by the trait anxiety instrument clearly had an influence on the performance of the task without the assistance of cues exhibiting a general debilitating influence. The test anxiety measure failed significantly to affect performance when forced into a dichotomization around the median. Perhaps this dichotomization resulted in an inordinate amount of variance lost, however, as significant negative correlation was obtained with performance on the non-cued figures. Furthermore, for this instructional task and population, the addition of redundant color cues reduced the effects of both anxiety variables to marginal influence. The degree of embedding of the figures seemed to reduce, but not change the direction of, the effect of both anxiety measures.

A surprising finding in this study was the virtually zero correlation between the anxiety measures where at least a low positive relationship would be expected. Perhaps the subjects tended to experience anxiety either as an intellectual or emotional response and that this response would be captured primarily by only one of the instruments. This low correlation, however, increased the power of the test anxiety measure in adding variance in the multiple regression procedure.

Since the manipulation of the treatment was limited to the input stage, a question arises as to why there was not a larger residual effect of anxiety for the cued treatment group resulting from the effect of anxiety on the processing and output stages. Possibly for the test anxiety variable, presumably more of a measure of the arousal component, the demands of the task were minor enough that the throughput advantage compensated for any deleterious effects. Additionally, the high test anxious cued treatment group should have had an advantage in the input stage where they would be dominated by the salient criterial information. This might be an explanation for the higher scores achieved by this group.

These compensations were evidently not present for the trait anxiety measure as the high trait anxiety group actually did worse on the cued figures than the low trait anxious subjects did on the non-cued figures. This would be expected as the worry component of anxiety supposedly engenders neither an increase in processing rate or a narrowing of perception. Since the negative effects are a result of increased distraction, cueing would reduce, but not reverse, the effect of the trait anxiety component.

## RECOMMENDATIONS

Clearly, more research in this area will generate an even clearer idea as to the interaction of the cueing and anxiety variables. Types of cues, the effect of scanning time, and population variables are but a few of the parameters that could be varied. A very important question that must be answered is the exact relationship of the anxiety measures to the components of anxiety referred to in this study. Crucial to useful research in this area are instruments that facilitate the reliable measurement of the chosen component.

With regard to the type of instructional task and presentation utilized, perhaps the research in this area should proceed in seemingly opposite directions. It should be determined what percentage of instructional materials used in actual classroom situations contain criterial information that is sufficiently embedded to cause input problems with high anxious learners. A second direction should be to develop research procedures that eliminate the processing and output stages in the learning sequence in order to isolate the effects of anxiety on the input stage.

Implications for the message designer, based on this study, would suggest no radical change in behavior. The addition of cues is a standard practice. This study justifies this procedure in visuals containing heavily embedded criterial information, particularly when such visuals will be used with highly anxious learners.

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TABLES

Table 1

Analysis of Variance
Lightly Embedded Figure Scores with Trait Anxiety and Cueing

| Source | SS | df | MS | F |
|---|---|---|---|---|
| Trait Anxiety | 184.08 | 1 | 184.08 | 7.59* |
| Cueing | 12.0 | 1 | 12.0 | .49 |
| Interaction | 21.3 | 1 | 21.3 | .35 |

*$p < .01$

Table 2

Means and Standard Deviations for Lightly Embedded Figure Scores by Trait Anxiety Level and Treatment

| Treatment Groups | Trait Anxiety Levels: Low | Trait Anxiety Levels: High | Total |
|---|---|---|---|
| Cued | $\underline{X}$ = 27.0<br>SD = 5.07<br>N = 12 | $\underline{X}$ = 24.5<br>SD = 6.86<br>N = 12 | $\bar{X}$ = 25.8<br>SD = 6.02 |
| Non-cued | $\underline{X}$ = 27.4<br>SD = 3.42<br>N = 12 | $\underline{X}$ = 22.17<br>SD = 3.73<br>N = 12 | $\bar{X}$ = 24.8<br>SD = 4.4 |
| Total | $\bar{X}$ = 27.25<br>SD = 4.20 | $\bar{X}$ = 23.33<br>SD = 5.53 | |

Table 3

Analysis of Variance
Heavily Embedded Figure Scores with Trait Anxiety and Cueing

| Source | SS | df | MS | F |
|---|---|---|---|---|
| Trait Anxiety | 229.68 | 1 | 229.68 | 11.37** |
| Cueing | 143.5 | 1 | 143.5 | 7.1* |
| Interaction | 77.5 | 1 | 77.5 | 3.84* |

**$p < .005$

*$p < .05$

Table 4

Means and Standard Deviations for Heavily Embedded Figure Scores by Trait Anxiety and Treatment

| | | Trait Anxiety Levels: Low | Trait Anxiety Levels: High | Total |
|---|---|---|---|---|
| Treatment Groups | Cued | $\bar{X}$ = 26.67<br>SD = 4.2<br>N = 12 | $\bar{X}$ = 24.83<br>SD = 5.9<br>N = 12 | $\bar{X}$ = 25.8<br>SD = 5.11 |
| | Non-cued | $\bar{X}$ = 25.75<br>SD = 3.1<br>N = 12 | $\bar{X}$ = 18.83<br>SD = 4.28<br>N = 12 | $\bar{X}$ = 22.29<br>SD = 5.07 |
| | Total | $\bar{X}$ = 26.21<br>SD = 3.67 | $\bar{X}$ = 21.83<br>SD = 5.89 | |

Table 5

Analysis of Variance
Lightly Embedded Figure Scores with Test Anxiety and Cues

| Source | SS | df | MS | F |
|---|---|---|---|---|
| Test Anxiety | .122 | 1 | .122 | .004 |
| Cueing | 11.872 | 1 | 11.87 | .41 |
| Interaction | 21.9 | 1 | 21.9 | .76 |

Table 6

Analysis of Variance
Heavily Embedded Figure Scores with Test Anxiety and Cueing

| Source | SS | df | MS | F |
|---|---|---|---|---|
| Test Anxiety | 10.5 | 1 | 10.5 | .40 |
| Cueing | 146.5 | 1 | 146.5 | 5.62* |
| Interaction | 39.4 | 1 | 39.4 | 1.51 |

*$p < .05$

Table 7

Means and Standard Deviations for Lightly Embedded Figure Scores by Test Anxiety and Treatment

| Treatment Groups | Low | High | Total |
|---|---|---|---|
| Cued | $\bar{X}$ = 25.0<br>SD = 6.9<br>N = 12 | $\bar{X}$ = 26.46<br>SD = 5.3<br>N = 12 | $\bar{X}$ = 25.8<br>SD = 6.02 |
| Non-cued | $\bar{X}$ = 25.4<br>SD = 3.8<br>N = 12 | $\bar{X}$ = 24.1<br>SD = 4.9<br>N = 12 | $\bar{X}$ = 24.8<br>SD = 4.4 |
| Total | $\bar{X}$ = 25.21<br>SD = 5.4 | $\bar{X}$ = 25.36<br>SD = 5.19 | |

Table 8

Means and Standard Deviations for Heavily Embedded Figure Scores by Test Anxiety and Treatment

| Treatment Groups | Test Anxiety Levels: Low | Test Anxiety Levels: High | Total |
|---|---|---|---|
| Cued | $\bar{X}$ = 25.2<br>SD = 5.2<br>N = 12 | $\bar{X}$ = 26.15<br>SD = 5.1<br>N = 12 | $\bar{X}$ = 25.75<br>SD = 5.11 |
| Non-cued | $\bar{X}$ = 23.6<br>SD = 5.1<br>N = 12 | $\bar{X}$ = 20.9<br>SD = 4.7<br>N = 12 | $\bar{X}$ = 22.29<br>SD = 5.07 |
| Total | $\bar{X}$ = 24.4<br>SD = 5.18 | $\bar{X}$ = 23.64<br>SD = 5.5 | |

Table 9

Correlation Coefficients of Anxiety Measures and Non-cued Figure Scores

| | Lightly Embedded Non-cued Figure Scores | Heavily Embedded Non-cued Figure Scores | Trait Anxiety Score | Test Anxiety Score |
|---|---|---|---|---|
| Test Anxiety Score | -.32 | -.47 | -.06 | - |
| Trait Anxiety Score | -.47 | -.59 | - | -.06 |

Table 10

Multiple Regression Summary Table for
the Lightly Embedded Figure Scores/Non-Cued Treatment Group

| Independent Variables | Multiple R | R Square | RSO Change | Simple R |
|---|---|---|---|---|
| Trait Anxiety Score | .4776 | .2281 | .2281 | -.4776 |
| Test Anxiety Score | .5832 | .3401 | .1120 | -.3275 |

Table 11

Multiple Regression Summary Table for
the Heavily Embedded Figure Scores/Non-Cued Treatment Group

| Independent Variables | Multiple R | R Square | RSO Change | Simple R |
|---|---|---|---|---|
| Trait Anxiety Score | .5934 | .3521 | .3521 | -.5934 |
| Test Anxiety Score | .7348 | .5400 | .1878 | -.4717 |

Table 12

Multiple Regression Summary Table for
the Lightly Embedded Figure Scores/Cued Treatment Group

| Independent Variables | Multiple R | R Square | RSO Change | Simple R |
|---|---|---|---|---|
| Trait Anxiety Score | .1727 | .0298 | .0298 | -.1727 |
| Text Anxiety Score | .2123 | .0450 | .0152 | -.1014 |

Table 13

Multiple Regression Summary Table for the
Heavily Embedded Figure Scores/Cued Treatment Group

| Independent Avriables | Multiple R | R Square | RSO Change | Simple R |
|---|---|---|---|---|
| Test Anxiety Score | .1868 | .0349 | .0349 | -.1868 |
| Trait Anxiety Score | .2733 | .0747 | .0398 | -.1753 |

FIGURES

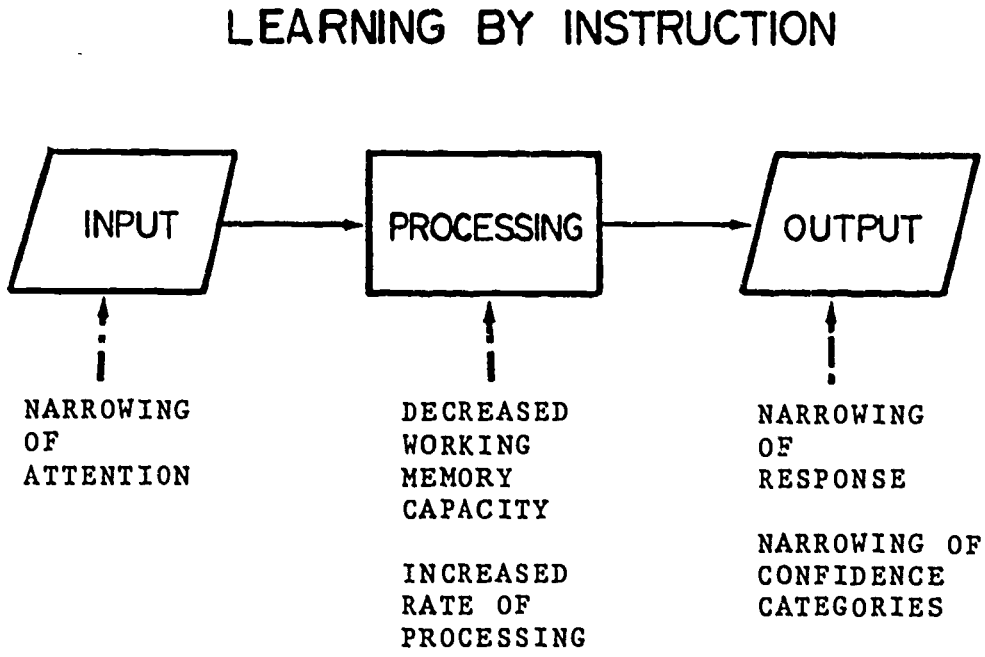


Figure 1: THE EFFECTS OF ANXIETY ON LEARNING FROM INSTRUCTION

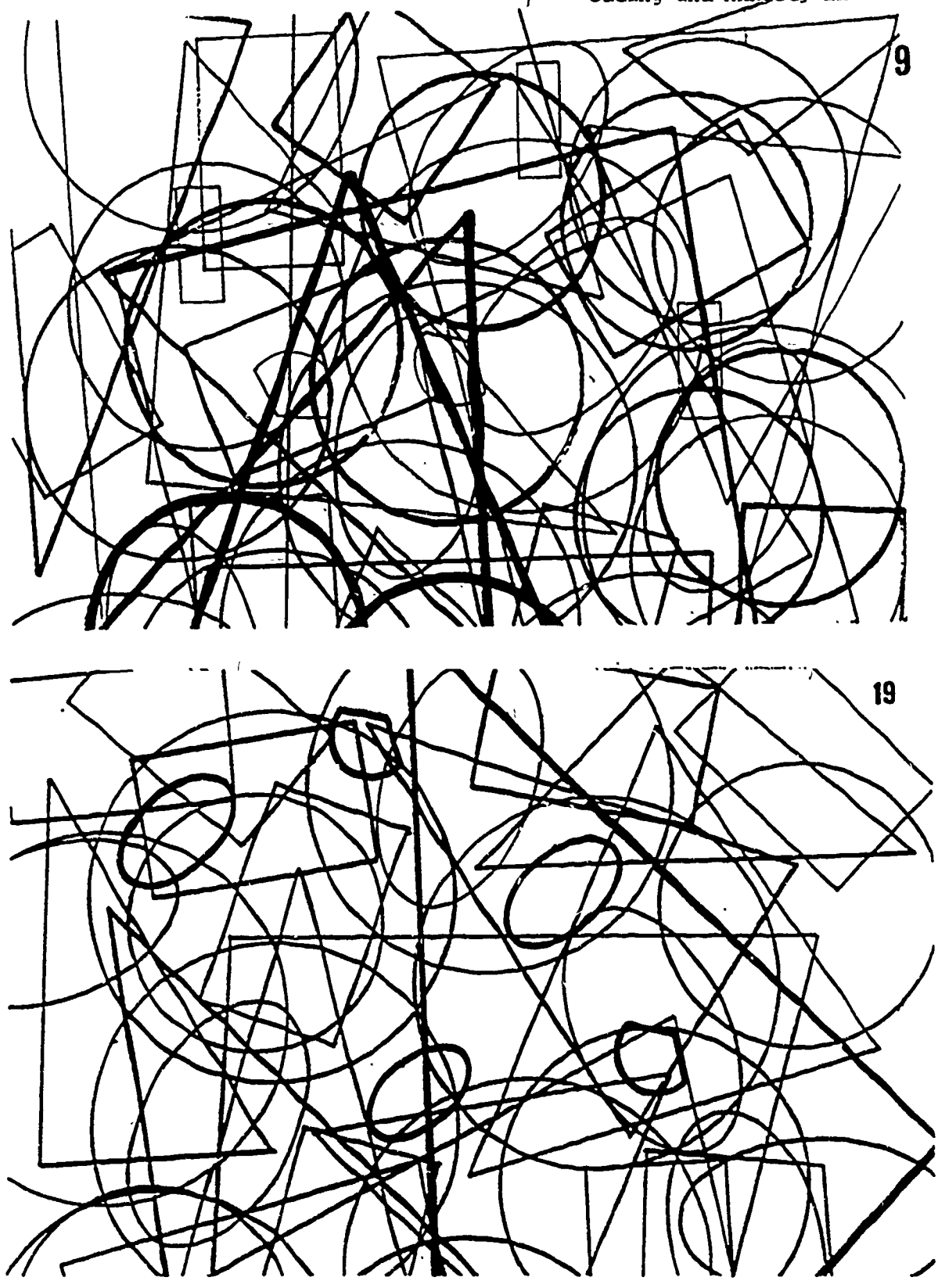


Figure 2: HEAVILY AND LIGHTLY EMBEDDED FIGURE SETS

# APPENDIX A

## Anxiety Measures

SELF PERCEPTION SCALE II

Please circle the number that most closely approximates your reactions to the following situation:

YOU ARE ABOUT TO TAKE A FINAL EXAM:

| | | |
|---|---|---|
| 1. | Heart beats faster | 1 2 3 4 5<br>not at all very much |
| 2. | Get an "uneasy feeling" | 1 2 3 4 5<br>not at all very much |
| 3. | Emotions disrupt action | 1 2 3 4 5<br>not at all very much |
| 4. | Feel exhilarated and thrilled | 1 2 3 4 5<br>not at all very much |
| 5. | Want to avoid situation | 1 2 3 4 5<br>not at all very much |
| 6. | Perspire | 1 2 3 4 5<br>not at all very much |
| 7. | Need to urinate frequently | 1 2 3 4 5<br>not at all very much |
| 8. | Enjoy the challenge | 1 2 3 4 5<br>not at all very much |
| 9. | Mouth gets dry | 1 2 3 4 5<br>not at all very much |
| 10. | Become immobilized | 1 2 3 4 5<br>not at all very much |
| 11. | Get full feeling in stomach | 1 2 3 4 5<br>not at all very much |
| 12. | Seek experiences like this | 1 2 3 4 5<br>not at all very much |
| 13. | Have loose bowels | 1 2 3 4 5<br>not at all very much |
| 14. | Experience nausea | 1 2 3 4 5<br>not at all very much |

## SELF-EVALUATION QUESTIONNAIRE

### STAI FORM X-2

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

| | ALMOST NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |
|---|---|---|---|---|
| 21. I feel pleasant | ① | ② | ③ | ④ |
| 22. I tire quickly | ① | ② | ③ | ④ |
| 23. I feel like crying | ① | ② | ③ | ④ |
| 24. I wish I could be as happy as others seem to be | ① | ② | ③ | ④ |
| 25. I am losing out on things because I can't make up my mind soon enough | ① | ② | ③ | ④ |
| 26. I feel rested | ① | ② | ③ | ④ |
| 27. I am "calm, cool, and collected" | ① | ② | ③ | ④ |
| 28. I feel that difficulties are piling up so that I cannot overcome them | ① | ② | ③ | ④ |
| 29. I worry too much over something that really doesn't matter | ① | ② | ③ | ④ |
| 30. I am happy | ① | ② | ③ | ④ |
| 31. I am inclined to take things hard | ① | ② | ③ | ④ |
| 32. I lack self-confidence | ① | ② | ③ | ④ |
| 33. I feel secure | ① | ② | ③ | ④ |
| 34. I try to avoid facing a crisis or difficulty | ① | ② | ③ | ④ |
| 35. I feel blue | ① | ② | ③ | ④ |
| 36. I am content | ① | ② | ③ | ④ |
| 37. Some unimportant thought runs through my mind and bothers me | ① | ② | ③ | ④ |
| 38. I take disappointments so keenly that I can't put them out of my mind | ① | ② | ③ | ④ |
| 39. I am a steady person | ① | ② | ③ | ④ |
| 40. I get in a state of tension or turmoil as I think over my recent concerns and interests | ① | ② | ③ | ④ |