

THE UNIVERSITY OF MANITOBA

SUBJECT BEHAVIOUR IN THE LABORATORY: OBJECTIVE
SELF-AWARENESS OR EVALUATION APPREHENSION?

by

BARRY SPINNER

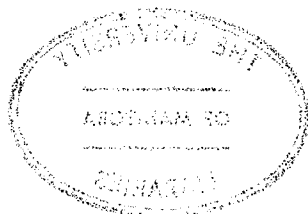
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the University of Manitoba in partial fulfillment of the requirements
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Abstract

Rosenberg (1965; 1969) has proposed that subjects in psychological experiments are motivated by evaluation apprehension, behaving so as to receive a positive evaluation from the experimenter. Although conceptual problems have been identified with the construct, numerous authors have argued that evaluation apprehension is the predominant motive in the laboratory. However, a literature review does not support the hypothesis that the behavioral effects of evaluation apprehension are mediated by the expectation of, and anxiety over the experimenter's evaluation. Examination of the methods used to manipulate evaluation apprehension suggests that the phenomenon may be reinterpreted within the framework of the theory of objective self-awareness. The purpose of the present research was to investigate this relationship by administering instructions typical of research on evaluation apprehension, and observing their effect on measures of objective self-awareness completed by 160 male and female subjects.

Results provided general support for the hypothesis that instructions designed to arouse evaluation apprehension produce a state of objective self-awareness accompanied by a negative discrepancy (i.e., the expectation of failure). It was suggested that the behavioural effects typically associated with evaluation apprehension may be attributed to the self-evaluation process accompanying states of objective self-awareness, rather than the expectation of and arousal over the experimenter's evaluation. The implications for improving the precision and accuracy of psychological data were discussed.

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TABLE OF CONTENTS

		PAGE
	ABSTRACT	i
	ACKNOWLEDGEMENTS	ii
	LIST OF TABLES	v
CHAPTER		
I	INTRODUCTION	1
	The Theory of Objective Self-Awareness	3
	Evaluation Apprehension or Objective Self-Awareness	4
II	METHOD	10
	Subjects and Experimenters	10
	Design and Experimental Setting	10
	Procedure	11
	Post-Experimental Questionnaire	14
III	RESULTS	16
	Effectiveness of the Manipulations	16
	Frequency of Personal Pronoun Use	18
	Speed of Performance	22
	Other Results	24
	Validity of the Personal Pronoun Measure	26
IV	DISCUSSION	28
	Evaluation Apprehension and Self-Awareness	28
	The Mirror Effect	30

TABLE OF CONTENTS (CONTINUED)

CHAPTER	PAGE
IV	
The Cueing Effect	32
Implications for Research	32
Summary and Conclusions	34
REFERENCES	36
FOOTNOTES	43
APPENDIX A: Literature Review	44
APPENDIX B: Instructions Major Study	77
APPENDIX C: Post-Experimental Questionnaire	81
APPENDIX D: Statistical Tables	86
APPENDIX E: Validation Study	112
APPENDIX F: Materials - Validation Study	116
APPENDIX G: Other Results	127

LIST OF TABLES

TABLE	PAGE
1 Hypothesized state of self-awareness, nature of discrepancy and frequency of personal pronoun use as a function of mirror presence, evaluation apprehension and cue presence ..	8
2 Mean Reported expected and achieved success as a function of presence of cues and sex of subject	17
3 Mean frequency of personal pronoun use and a priori contrasts as a function of mirror presence, evaluation apprehension, cue presence and sex of subject	19
4 Mean frequency of personal pronoun use per block of 20 trials as a function of evaluation apprehension and cue presence when the mirror was absent	22
5 Mean self-reported feelings of evaluation and concern over performance for the interaction of evaluation apprehension, cue presence and sex of subject	25
6 Summary table for analysis of variance on personal pronoun measure and for MANOVA on blocks of trials	87
7 Summary table for analysis of variance on speed of performance measure	88
8 Summary table for MANOVA on attributions to the self, experimenter, task and subject role and univariate significance for self-attributions	89
9 Summary table for MANOVA on measures of anxiety, apprehensiveness, concern over performance and feelings of evaluation	90

TABLE	PAGE
10	Summary table for MANOVA on measures of retrospective expected and achieved success 91
11	Summary table for analysis of variance on measure of self-consciousness 92
12	Summary table for MANOVA on measures of cooperation and defiance 93
13	Mean overall frequency of personal pronoun use 94
14	Mean frequency of personal pronouns for the first block of 20 trials 95
15	Mean frequency of personal pronoun use for the second block of 20 trials 96
16	Mean frequency of personal pronoun use for the third block of 20 trials 97
17	Mean speed of performance in minutes 98
18	Mean self-attributions 99
19	Mean attributions to the experimenter 100
20	Mean attributions to the task 101
21	Mean attributions to the subject role 102
22	Mean self-reported anxiety 103
23	Mean self-reported apprehensiveness 104
24	Mean self-reported concern over performance 105
25	Mean self-reported feelings of evaluation 106
26	Mean retrospective expected success 107
27	Mean perceived success 108

TABLE		PAGE
28	Mean self-reported self-consciousness	109
29	Mean self-reported cooperativeness	110
30	Mean self-reported defiance	111

CHAPTER I

INTRODUCTION

Rosenberg (1965; 1969) has proposed that subjects in psychological experiments often experience evaluation apprehension, "an anxiety-toned concern that . . . [the subject] win a positive evaluation from the experimenter . . . or at least provide no grounds for a negative one" (1965, p.18). In the past several years a great deal of research has been conducted on subject behaviour in the laboratory, much of it investigating Rosenberg's formulation. Conceptual problems, such as the inability to discriminate evaluation apprehension from other roles or motives hypothesized to operate in the laboratory have been identified by some (Adair & Schachter, 1970; Weber & Cook, 1972). In spite of these problems, numerous authors have claimed there is substantial support for Rosenberg's formulation, and that evaluation apprehension is the predominant role or motive in the psychological laboratory (Kingsbury, Stevens & Murray, 1975; Rosenberg, 1969; Rosnow, Goodstadt, Suls & Gitter, 1973; Sigall, Aronson & Van Hoose, 1972; Silverman & Shulman, 1970; Weber & Cook, 1972).

Christensen (1977) has identified three components of Rosenberg's model: (1) an expectancy component, (2) an arousal component, and (3) a cueing component. Thus, subjects presumably enter the experiment with the expectation that some aspect of their mental health or personality will be evaluated by the experimenter. This expectancy may or may not be modified during the course of the experiment depending upon the experimental instructions, nature of the task, and so on. As a

result of the expectancy, subjects presumably experience an anxiety-toned concern regarding the evaluation they will receive from the experimenter. In response to the expectancy of evaluation and resultant anxiety, subjects are hypothesized to modify their behaviour based upon cues in the experimental situation, so as to receive a positive evaluation from the experimenter. The greater the evaluation apprehension experienced, the more the subject is expected to base behaviour on cues that communicate a healthy, mature image. This latter "cueing effect" is the final behavioural outcome of the evaluation apprehension process, and it presumably introduces bias into dependent measures.

A review of studies on evaluation apprehension (Appendix A) indicates that only one component of Rosenberg's three-component model has been supported. The predicted behaviour (i.e, the cueing effect) occurs as a function of differential evaluation apprehension instructions (e.g., Blake & Heslin, 1971; Burkhart, 1976; Campbell & Hannah, 1976; Duncan, Rosenberg & Finklestein, 1969; Hannah & Campbell, 1976; Kingsbury et al., 1975; Minor, 1970; Rosenberg, 1969; Rosnow et al., 1973; Sigal et al., 1970; Turner & Simons, 1974). However, confirmation of Rosenberg's model requires evidence indicating (a) that manipulations of evaluation apprehension affect subjects' expectancies of evaluation, (b) that arousal occurs as a result of this expectancy, and (c) that the expectation of evaluation and resultant arousal are both necessary and sufficient for the occurrence of the cueing effect. Unfortunately, there is insufficient evidence available regarding the expectancy component. It has been assessed only incidentally by single-item manipulation checks that for the most part are only peripher-

ally related to it (e.g., concern over performance). The arousal component of evaluation apprehension has been somewhat more fully investigated, yet results are generally not supportive. Although three studies using self-report measures have found increased anxiety associated with high evaluation apprehension instructions (Hannah & Campbell, 1976; Henchy & Glass, 1968; Rosenberg, 1969, p.312) a number of other studies using self-report measures (Burkhart, 1976; Innes & Young, 1975; Minor, 1970; Turner & Simons, 1974) as well as physiological measures (Christensen, 1977; Henchy & Glass, 1968; Paulus, Annis & Reisner, in press) have found no association between evaluation apprehension manipulations and levels of anxiety and arousal. However, in each of the studies above that investigated the cueing component, behavioural effects were observed independent of reported or measured arousal.

In summary, while the predicted behaviours occur as a function of differential evaluation apprehension instructions, there is little evidence that they are due to the theoretical antecedents proposed by Rosenberg; subjects demonstrate the cueing effect but this effect does not appear to be mediated by their expectancies of evaluation and experience of arousal. From extensive research it may only be concluded that certain manipulations affect subjects' use of cues which indicate how to do well on the task. However, the process mediating this behaviour is as yet undetermined.

The Theory of Objective Self-Awareness

An alternative theoretical approach to this phenomenon may be found in Duval and Wicklund's (1972; Wicklund, 1975) theory of objective

self-awareness. Briefly, this theory proposes that conscious attention is dichotomous, being directed toward the self (the state of objective self-awareness) or toward the environment (the state of subjective self-awareness). Any stimulus which reminds a person of his or her status as an object (e.g., seeing one's reflection in a mirror) will encourage self-focussing and produce a state of objective self-awareness (Wicklund, 1975).

The onset of objective self-awareness initiates a self-evaluation process during which the actual self is compared to some ideal or standard on the dimension most salient at the time. If the comparison results in a negative discrepancy (i.e., actual performance falls short of the standard) then heightened negative affect is experienced (Scheier & Carver, 1977) and there are attempts to reduce the discrepancy and/or avoid stimuli that encourage self-focussing. If the standard is met, a positive discrepancy is experienced leading to heightened positive affect (Scheier & Carver, 1977) and the individual seeks out, or at least does not avoid, stimuli that encourage objective self-awareness (Davis & Brock, 1974; Wicklund, 1975).

Evaluation Apprehension or Self-Awareness

Examination of manipulations of evaluation apprehension suggests that high evaluation apprehension instructions encourage a state of objective self-awareness, whereas low evaluation apprehension instructions facilitate a state of subjective self-awareness. High evaluation apprehension instructions which state, for example, that the research is concerned with picking out emotionally maladjusted students (Rosenberg, 1969, pp.311-312) clearly indicate that observation and evaluation will

occur on an individual level, make salient the dimension upon which evaluation will occur, and introduce the possibility that the subject will do poorly (i.e., experience a negative discrepancy). In contrast, low evaluation apprehension instructions which indicate the purpose of the research is to develop a model of social perception processes, and explicitly state interest only in group results (Rosenberg, 1969, pp. 311-312) take the focus off the individual and do not indicate any dimension for evaluation, nor the possibility of a negative discrepancy.

From a theoretical perspective it is likely that these instructions would result in different states of self-awareness. Wicklund (1975) has noted that "the knowledge of being attended to by others should . . . create a set towards self-observation. . . the self readily comes to the fore when the person realizes that the attention of the audience is on some feature of the self." (p.234). In addition, Duval and Wicklund (1972) have noted that the experimenter's "control [and observation] of the subject's behaviour implies to the subject that he is an object in the world and is thus a strong stimulus to self-awareness" (p.29). These statements suggest that Rosenberg's method of arousing or decreasing evaluation apprehension affects levels of self-awareness as indicated above. Research conducted within the context of social facilitation theory has led to similar conjectures by others (Carver & Scheier, 1978; Liebling & Shaver, 1973). However, the hypothesis that evaluation apprehension instructions effect levels of self-awareness has not been empirically tested.

The present study was designed to address this question. It was expected that compared to subjects given low evaluation apprehension

instructions, those given high evaluation apprehension instructions would experience heightened self-awareness. It was also predicted that subjects administered high evaluation apprehension instructions would experience a negative discrepancy when not exposed to cues indicating how to do well on the task, and experience a positive discrepancy when provided with such cues. These issues were investigated by manipulating (a) whether subjects received instructions designed to produce high or low evaluation apprehension (after Rosenberg, 1969), (b) the presence or absence of cues indicating how to do well on the task, and (c) whether or not subjects were exposed to a mirror while completing the dependent measure.

Following the reasoning of Davis and Brock (1975) the major dependent measure permitted an assessment of the frequency of self-reference in a sentence construction task. It was assumed that in a task where subjects were required to start their sentence constructions with either personal (I or we) or impersonal (he, she, they, or you) pronouns, the choice of pronoun would reflect subjects' state of awareness and the nature of the discrepancy. Subjects whose attention was focussed inward and who were experiencing a positive discrepancy were expected to make greater use of personal pronouns than those who were in a state of self-awareness and experiencing a negative discrepancy (the latter subjects were expected to avoid personal pronouns as a means of minimizing self-awareness), or those subjects in a state of subjective self-awareness.

Based upon this analysis, seven hypotheses, each reflecting a one degree-of-freedom contrast, were generated:

(1) In general, subjects exposed to the mirror will produce more self-references than will subjects not exposed to the mirror.

(2) In the absence of a mirror, there will be no difference in personal pronoun use between subjects given low evaluation apprehension instructions who are provided with cues unrelated to pronoun use, and those given low evaluation apprehension instructions without cues since both groups will be in a state of subjective self-awareness.

(3) In the presence of a mirror, a similar lack of difference between the low evaluation apprehension/cues present and low evaluation apprehension/cues absent conditions will be observed.

(4) In the absence of the mirror, the two low evaluation apprehension conditions referred to in Hypothesis 2 will not differ from a high evaluation apprehension/cues absent condition. Although subjects in the latter cell will be in a state of objective self-awareness, they will be experiencing a negative discrepancy.

(5) In the presence of a mirror, the two low evaluation apprehension conditions referred to in Hypothesis 3 will result in greater personal pronoun use than will the high evaluation apprehension/cues absent condition, since subjects in the latter condition will be experiencing a negative discrepancy while those in the former conditions will experience heightened self-awareness due to the mirror but no negative discrepancy.

(6) In the absence of the mirror, subjects in the high evaluation apprehension condition who are given cues unrelated to pronoun use will produce more self-references than subjects in the high evaluation apprehension/cues absent condition or subjects in the two low evaluation apprehension conditions.

(7) In the presence of the mirror, subjects in the high evaluation/cues present condition will utilize a greater number of personal pronouns than other subjects exposed to the mirror. These hypotheses are summarized and represented in Table 1.

Table 1

Hypothesized State of Self-Awareness, Nature of Discrepancy, and Frequency of Personal Pronoun Use as a Function of Mirror Presence, Evaluation Apprehension (EA) and cue presence.

	No Mirror				Mirror			
	High EA		Low EA		High EA		Low EA	
	Cues	None	Cues	None	Cues	None	Cues	None
Objective (OSA) or Subjective (SSA) Self-Awareness	OSA	OSA	SSA	SSA	OSA	OSA	OSA	OSA
Positive (P) or Negative (N) Discrepancy	P	N	-	-	P	N	P	P
Increase or Not in Personal Pronouns	Yes	No	No	No	Yes	No	Yes	Yes

In contrast to the predictions above, the evaluation apprehension model would hypothesize no differences between groups. Neither levels of evaluation apprehension, the presence or absence of cues (unrelated to personal pronouns) the presence or absence of the mirror, nor their

interactions should affect personal pronoun use, since there is nothing inherently good or healthy in more than a chance level of self-reference.

Secondary measures included an assessment of subjects' attributions for their experimental performance. Since a state of objective self-awareness has been related to an increase in self-attribution (Buss & Scheier, 1976; Duval & Wicklund, 1973) it was expected that both the presence of the mirror and high evaluation apprehension instructions would result in greater self-attribution. Once again, the evaluation apprehension model would make no predictions of group differences.

Another secondary measure, the time subjects require to complete the experimental task was expected to be affected by both the cues on how to do well (which told subjects that fast performance was desirable), and subjects' state of self-awareness. Thus, it was expected that subjects exposed to the cues in the high evaluation apprehension condition and/or in the mirror condition would require less time to complete the task than subjects exposed to the cues in the low evaluation apprehension/mirror absent condition. The latter group of subjects were expected to perform no faster than subjects in the no cues condition.

CHAPTER II

METHOD

Subjects and Experimenters

Subjects were 173 male and female introductory psychology students who participated in order to partially fulfill a course requirement. The data from 13 subjects were discarded prior to scoring due to either a failure to follow experimental instructions, or suspiciousness over some aspect of the experimental instructions as indicated on the post-experimental questionnaire. The remaining 80 subjects of each sex were randomly assigned to conditions within the constraint that there would be equal numbers within each cell of the design.

The experimenters were two male psychology students in their mid 20's. One was an honours student, the other a graduate student. The experimenters were blind to the purpose of the experiment, the hypotheses, and the exact nature of the major dependent variable.

Design and Experimental Setting

The experiment consisted of a 2^5 fully-crossed factorial design, with the independent variables being: (a) mirror presence or absence, (b) high or low evaluation apprehension instructions, (c) cue presence or absence, (d) sex of subject, and (e) experimenter. All factors were between-subjects.

The experimental room contained a large (1.93 m x 1.32 m) one-way mirror set permanently in the wall with the reflective side facing the experimental room. Directly against the base of the mirror

was a table at which the subject was seated facing the mirror. In front of the subject was a tape-recorder (used to deliver instructions), 61 index cards turned face-down, a pencil and several sheets of blank paper. To the right and slightly to the rear of the subject's seat were the experimenter's table and chair. The latter were out of the subject's view when the subject faced ahead, and were not visible in the mirror's reflection from the subject's position.

Procedure

Subjects were tested individually. In the mirror present condition the subject's attention was immediately directed toward the mirror. The subject was told that many people had been distracted by the mirror, wondering if anyone was watching them during the experiment. The subject was assured that no one would be watching, and this was supplemented by showing the subject that the observation room was empty, that the observation side of the mirror was covered with a screen, and by leaving the door to the observation room ajar. Post-experimental questioning confirmed that subjects did not think the mirror was connected with the research. In the Mirror absent condition nothing was said about the mirror since it was completely covered with blank white paper.

Upon being seated each subject was told that the instructions were on the tape-recorder (see Appendix B). The experimenter turned on the tape-recorder and withdrew to his seat. The subject was then told:

The study you are participating in today involves the collection of some survey data. Your task today is called a sentence construction

task. On the desk in front of you, you will find a pencil, some paper, and a stack of 61 cards turned face down. Once the experiment begins, the cards are to be turned over one at a time. On each card is a past-tense verb and six pronouns. Your task will be to construct and write down a sentence that begins with one of the pronouns, and uses the verb on the card. Do not think about the sentence for too long; just write down the first sentence that comes into your mind.

The order of the pronouns was randomized for each card. The top card was used to provide two sample sentences, the first starting with he, the second with we (see Appendix F for a listing of the verb-pronoun sets).

The subject in the high evaluation apprehension condition was told the sentence construction task was a recently developed test of general intelligence, and that research had indicated scores on it were related to other tests of general intelligence. The purpose of the current session, the subject was informed, was to further develop the sentence construction task as an instrument for picking out from the university population those individuals unsuitable for university training and degrees. This explanation was particularly credible for many students, since the introduction of English proficiency screening tests was being discussed on campus at the time. The taped instructions continued stating that in order to accomplish our purpose, the subject's score on the sentence construction task would be compared to marks in psychology and to overall GPA. Each was requested to put his/her full name and student I.D. number on all materials, and was assured that their grade in psychology and standing in university would not be

affected by their performance in the experiment.

The subject in the low evaluation apprehension condition was told that the task concerned integrating into a more simplified model, the various dimensions involved in temporal-linguistic expressive processes, and that this would be accomplished by a method statisticians call stochastic-inferential mathematical modelling. They were told that the purpose of the session was to develop mathematical formulae and sampling distributions to describe these processes. Subjects were asked not to put their name or other identification on any materials as interest was in group results. Both sets of evaluation apprehensions were based very closely upon Rosenberg (1969) modified so as to be consistent with the experimental task.

After having delivered the task instructions and one set of evaluation apprehension instructions, the tape-recording continued for the subject in the cues present condition by stating that there should be no trouble finishing the task within the time-limits of the one-hour experiment. The subject was informed that although people from the general population usually required as much as 40 to 50 minutes to complete the task, university students usually needed no more than 30 minutes, and that some were able to finish the task within as little as 15 minutes. Pretesting had indicated that virtually all subjects were able to finish within this time limit without difficulty. These latter instructions were omitted for the subject in the cues absent condition. In both conditions, a clock was visible to the subject.

Once the instructions were completed, the experimenter turned off the tape-recorder and ascertained that the subject had understood the

instructions. The experimenter then asked the subject to proceed with the remaining 60 cards and returned to his desk. The experimenter unobtrusively assessed the time until task completion by means of a stopwatch hidden in the desk. Following completion of the task, the subject was given a post-experimental questionnaire containing secondary measures, manipulation checks and suspiciousness assessments. Upon completion of the session, the subject was informed of the deceptions associated with the evaluation apprehension and cues instructions. The purpose of the study and the nature of the dependent measure were not disclosed immediately following the experiment in order to minimize the possibility that this information might be communicated to future subjects. The importance of not discussing the experiment with anyone else was also stressed. Following completion of the study a complete description of its purpose and results was mailed to each subject.

Post-Experimental Questionnaire

Aside from speed of performance, all secondary measures, manipulation checks and assessments of suspiciousness were obtained on the post-experimental questionnaire (see Appendix C). The questionnaire contained ten items, each presented on a separate sheet of paper so that items appearing later in the questionnaire could not influence responses to earlier questions. Secondary measures and manipulation checks constituted the first four items. The first item asked subjects to indicate (on seven-point scales) how they felt with regard to the following: (a) anxious, (b) self-conscious, (c) cooperative, (d) defiant, (e) apprehensive, (f) concerned over how I would do, (g) like I was being