

Uncertainty and the Environment: An Analysis of
Stress-coping Behaviours at the University Examination

by

David Robert Forde

A thesis
presented to the University of Manitoba
in partial fulfillment of the
requirements for the degree of
Master of Arts
in
Department of Sociology

Winnipeg, Manitoba

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DAVID ROBERT FORDE

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ABSTRACT

This study was undertaken to complement the essentially ethnographic reports by Albas and Albas (1984) on stress-coping behaviours of students at the University Examination. Quantitative methods were used to attempt a triangulation of methods for the study of the examination as a social event. The theoretical framework utilized the Symbolic Interactionist perspective and, a Theory of the Definition of the Situation to describe how a behaviour could be called a 'stress-coping behaviour'. Finally, a control model based upon the work of Rothbaum, Weisz and Snyder (1982) was employed to predict variations in the prevalence and types of examination behaviours.

The participants were a random sample of 691 students at the University of Manitoba, Winnipeg, Manitoba, who completed a questionnaire on exams. The questionnaire was designed to examine the types of behaviours of students and their reasons for using the behaviours. The types of behaviours included: affiliating, not affiliating, and rituals. Frequency distributions were utilized to report descriptive results. Discriminant function analyses were undertaken to find which variables best predicted students' behaviours. Finally, multivariate crosstabulations were performed to test the model of control.

Overall, the results support the descriptions by Albas and Albas of the types of behaviours of students. However, this study found that the

prevalence of reasons was different than those reported by Albas and Albas. With a random sample of students this study makes inferences as to the reasons for changes in the types of reasons students gave for their behaviours over the time period of immediately before the exams to after the exams. The framework of Albas and Albas was retained to describe the changes in behaviours. The most prevalent changes were from 'self-enhancement' reasons to 'accuracy' reasons for those who affiliated before and after exams. Changes in the structure of the Discriminant Function Analyses also supported this interpretation of changes in students' behaviours. Finally, the use of the control model, a tool imposed upon the data by the investigator, was weakly supported. It was noted that none of the above methods alone were able to account for the behaviours of students. Yet, together the theories and the respective methodologies traditionally associated with each, may provide an explanation of the examination as a social event.

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Chapter I

THEORETICAL FRAMEWORK

1.1 INTRODUCTION

The objectives of this study are: 1) to provide descriptive information of the behaviour of students in an examination setting, and 2) to attempt to explain this behaviour by making use of a theory of control. Albas and Albas (1984), using an ethnographic approach, identify a variety of stress-coping behaviours used by students. They present the university exam as a highly stressful event for the student and interpret the behaviour as stress-coping strategies. This study will survey a random sample of students to describe the prevalence of examination behaviours, and attempt to corroborate the extent to which students also define their behaviours as stress-coping responses.

This study will also attempt to predict and explain expected variations in the prevalence and types of examination behaviours. Accordingly, it will be necessary to explain under what conditions stress-coping mechanisms are employed by students. To make these predictions and explanations, a "control model" will be employed in which the student's perceptions of the meanings of aversive stimuli and ultimately his/her degree of control over them will be used to predict his/her behaviour.

The contribution of this study to the understanding of the university examination is that a source of descriptive quantitative information about variations in the prevalence and types of exam behaviours provides a complement to the ethnographic research by Albas and Albas (1984), who have provided a basis for the interpretation of the stress-coping behaviours of students. The principal difference between this study and Albas and Albas is that all exam behaviour is not assumed to be stress-coping. While the concepts of Albas and Albas will be utilized as a part of the theoretical framework, this study will utilize quantitative methods to attempt a triangulation of methodologies. It is hoped that students preparing for exams and researchers may gain further understanding of the examination as a social event.

To follow, this chapter presents the theoretical framework for 1) an understanding of meaning in social interaction, 2) a model of control, and 3) the basis for the formulation of the proposed hypotheses.

1.2 MEANING IN SOCIAL INTERACTION

Understanding how people perceive and explain their own behaviour, and the relationship of their behaviour to others' behaviour in a particular environment is a problem for social psychology. It is through the understanding of how actions are perceived by a subject that a judgement can be made regarding the stressfulness of such actions for the subject. This study seeks to examine the meaning of examinations for students, and their influence on students' behaviour in a university environment.

Symbolic Interactionism, a branch of social psychology, deals directly with the problem of meaning. It assumes that actors behave on

the basis of meanings which arise symbolically out of their interactions, but which are nevertheless subjected to modification by the individual actors' perceptions and definitions of the situation (Blumer, 1969). These behaviours are assumed to evolve continually and the meanings and social interaction are therefore highly fluid.

As such, it is difficult to assume complete stability of social structure from one point in time to the next. Social structure simply refers to the relationships derived from how people interact with each other. Within the Symbolic Interactionist framework:

The nature of [the] environment is set by the meaning that the objects composing it have for those human beings. Individuals, also groups, occupying or living in the same spatial location may have, accordingly, different environments; as we say, people may be living in different worlds (Blumer, 1969:11).

Since the meaning of environmental stimuli may be different for every individual, it is dangerous to generalize on the structural meaning of any aspect of the environment. Consequently, while the meaning of the environment may be stressful at one point in time, the meaning of the environment is constantly changing and may not again be defined as stressful. Thus it would be unreasonable to define the meaning of the structural setting of the examination as stressful for students because stress has little permanence in the Symbolic Interactionist framework.

Stebbins' (1967, 1975) modification of the concept of the Definition of the Situation is useful for overcoming the lack of permanence of meaning within the Symbolic Interactionist framework. Meaning is not merely something that emerges on the spur of the interactional moment but rests upon retrospective, contemporary, and prospective assessment of:

... components of the objective situation which are seen by the actor to affect anyone of his action orientations and therefore must be given meaning before he can act (Stebbins, 1967:162).

Thus, there is a chain of continuity in the concept of meaning through time both for particular actions and between actions. This definition is critical for this study because changes in the environment will be examined at three different times: 1) immediately before an examination, 2) during an examination, and 3) following an examination.

The description of stages leaves no doubt that the study of the definition of the situation is a generalizing enterprise, and not an idiographic one, as suggested by earlier theorists, who tended to concentrate on case studies (Stebbins, 1986:139).

The theory of Definition of the Situation enables an explanation of both the dynamics of change, and the stability of meaning at each of the stages of the examination.

While the theory of Definition of the Situation provides a general framework for an overall definition of meaning, it does not give specific guidelines for the delineation of a conceptual framework for the analysis of any given social situation. This study will utilize a theory of control over environmental stress to explain students' behaviour before and after examinations. Essentially the theory of control is a specification of the theory of Definition of the Situation with the students' perception of control over the exam environment examined as an indicator of their overall definition of the situation. This conceptualization of control provides an explanatory framework for dealing with how students both define and cope with stressful aspects of their examinations.

1.3 A MODEL OF CONTROL FOR EXPLAINING STUDENTS' BEHAVIOURS IN EXAMS

The essential conditions for the development of a model of control are the definition of 1) meaning in social interaction, and 2) the definition of the boundaries of the environment. The theory of Symbolic Interactionism gives the basic definition of meaning, while the theory of Definition of the Situation provides the framework for a definitions of environmental boundaries. The following theory of control will provide the basis for the delineation of objects so that the interrelationships between objects, meaning, and environment may be specified so that behavioural outcomes may be predicted using a control model.

The social psychological literature dealing with theories of control is diverse both in its definitions of the concept of control and in its subjects of study. Much of the literature was spawned out of Seligman's clinical psychological studies of how people deal with the uncontrollable event of death (Seligman, 1975; Abramson, Seligman & Teasdale, 1978). Popular support for the clinical concept of control led to many studies of the reactions of man to the uncontrollability of aspects of events in natural field settings. Some examples include studies of mans' reactions to architecture, noise, and unsolvable learning tasks. (Baum, Aiello & Calesnick, 1978; Brehm, 1966; Dweck, 1975).

This study utilizes the recent work of Rothbaum, Weisz and Snyder (1982:1) who defined control over aversive stimuli in the environment as two types of processes:

1. People attempt to gain control by bringing the environment into line with their wishes (Primary control), and
2. by bringing themselves into line with environmental forces (Secondary control).

The degree to which the individual perceives primary control over the environment at any one point in time may be understood as the effectiveness of persistent effort by the individual in gaining control over and thereby changing aversive stimuli to bring the environment into line with the wishes of the individual. The individual may also have secondary control over stimuli when primary control is not possible,¹ thus enabling adaptive behaviour in a situation where actual control is not possible.² Thus psychological adjustment to aversive stimuli is possible in a social situation allowing for coping with stress in a manner other than absolute withdrawal from social interaction.

This study utilizes a modification of the above definition of control to examine students behaviours at the university examination. The particular definition of control is achieved by setting the boundaries of the examination environment. While researchers may have the same name for the situation, that is "examination", they may set different boundaries and be talking about different aspects of events. For example, the experimental social psychological definition of

¹ The student does not have primary control over the exam because ordinarily the student will not know the exact questions on the exam, nor the exact method which will be used to mark the exam.

² One example of secondary control is when the student aligns himself with luck. The student will actively participate in a chance situation, and in the skill situation (the exam) he will likely have high attributions to chance (Rothbaum, Weisz, & Snyder, 1982:12).

examination by Arkin, et al (1982) is very different than the ethnographic definition by Albas and Albas (1984). The social-psychological delineation of boundaries limits the possibilities for the perception of stimuli and thus for the conceptualization of stressors.

For this study the arena in which students encounter stimuli, define stressors, and cope depending upon whether they perceive themselves as having greater or less control, is temporally bounded as outlined by Albas and Albas (1984) to give particular attention to the time periods of immediate pre-exam, exam act proper, and post-exam. This study will examine the control that students perceive themselves to have over aspects of their environment at each of the phases of the examination. Given a description of how and why students act at each phase, one may then apply the control model to examine how the examination itself acts as an aversive stimulus for some students necessitating changes in their stress-coping behaviours.

How is it that examination behaviours may be analysed as the outcome of perceived control over stressful events? The answer lies in how the perception of the stressfulness of the examination is defined by the students' interactions with their environment and ultimately in their "coordination of primary and secondary control" (Rothbaum, Weisz & Snyder, 1980:8). "Attributions enable the self to derive meaning from otherwise uncontrollable experiences" (Rothbaum, Weisz & Snyder, 1980:11). When the students' attributions for their behaviour are known to an observer, it is possible to identify the meaning of the examination environment for them. It is through the analysis of the

students' attributions that the primary control behaviours, as opposed to secondary control behaviours, may be identified.

At a single point in time it is not possible to predict the occurrence of any one particular stress-coping behaviour. However, the reoccurrence of stress-coping behaviours will be influenced by the meaning attributed to imputed stress in the environment. Where individuals learn that outcomes of their actions are independent of their responses to stressful stimuli they will exhibit what Seligman called deficits (Abramson, Garber, & Seligman, 1980). Deficits are the debilitating consequences for the individual of experience with uncontrollable events:

The motivational deficit consists of retarded initiation of voluntary responses and is seen as a consequence of the expectation that responding is futile. The cognitive deficit consists of difficulty in learning that responses produce outcomes. The affective deficit is a consequence of learning that outcomes are independent of responding (Abramson, Garber, & Seligman, 1980:4).

To the extent that any individual suffers these deficits, he or she may be said to be not having primary control. Students who interpret their examination environment as being beyond their control will be less likely to exhibit stress-coping behaviours. The mechanisms linking students, stressors, and the students' perceptions of their degree of control as they relate to observed examination behaviour will be spelled out in the hypotheses for this study.

In summary, the model of control I propose to use in this study may be stated as follows and will be referred to hereafter as the control model. Elements in the specification of the model are: 1) the examination situation as environment, 2) potentially stressful aspects

of the examination, 3) perceptions of these potential stressors by the students, and 4) students perceived control which would be a function of the extent to which they perceive the potential stressors as being actually stressful to themselves. In effect a high perception of stress would lead to a low degree of perceived control and vice versa.

1.4 HYPOTHESES TO BE TESTED

The basic hypothesis to be tested by the model may be stated as higher perceived control at time 2 than at time 1 ($Ct2 > Ct1$) will lead to a situation of increasing stress-coping actions. Where perceived control is lower at time 2 than at time 1 ($Ct2 < Ct1$) there will be a decline in stress-coping actions. Further intervening variables will be introduced to refine the model, such as attributions by the students to luck, ability, task difficulty, and mood.

1.4.1 Changes in Stress-Coping Actions

It was predicted that stress-coping (S-C) actions (i.e. affiliation,³ and exam rituals) would vary both in prevalence and meaning due to changes in perceived control from the pre-exam phase to the post-exam phase. The hypotheses are the same for each of the exam S-C actions.

Hypothesis 1: Changes in perceived control, the independent variable, will vary with the occurrence of stress-coping actions. The attributions of students will influence perceived control so that perceived control will be a combination of primary and secondary control. Where the students' primary control has decreased and secondary control has

³ Affiliating was defined as whether or not the student socially interacted with others at the university examination. This further tested the anxiety-affiliation hypothesis of Schachter (1959) who "merely asked his subjects if they would like to interact and with whom" (Albas & Albas, 1984:82).

increased, the S-C actions will be less frequently occurring at the post-exam phase than at the pre-exam phase.

The variable perceived control was operationalized at both the immediate pre-exam and post-exam phases by asking how students' efforts gave students' control over the things students' needed to perform well on the examination. The difference in the pre-exam score (question 37) from the post-exam score (question 90) yielded possible values of -4 to +4. Negative numbers mean a perceived loss of control and positive numbers mean a perceived gain of control at the post-exam phase. Overall, this variable was considered as a measure of the adaptiveness of students where their persistent effort to do well on the exams may or may not enable them to gain perceived control over their examination environment.

To test the hypothesis, the independent variable of perceived control was crosstabulated against the dependent variable of students' behaviours while controlling for each of the attributional variables of luck, task difficulty, ability, and mood. These attributional variables enable the identification of primary and secondary perceived control. Since the operationalized construct of perceived control was specifically a measure of students' effort to change their environment (i.e. effort to do well on the exam) and not just to fit into the environment, it was unlikely that high levels of primary control would "accompany attributions to severely limited ability, to chance, or to powerful others and they are unlikely to accompany noninstrumental behaviours of a passive withdrawn, or submissive kind" (Rothbaum, Weisz & Snyder, 1980:12).

The following describes how it was possible to identify primary and secondary control through the meaning of each of the attributional variables. Note that the meaning of any given attribution was such that the opposite of a primary control attribution was a secondary control attribution. However, the students' having either primary or secondary control attributions did not mean that their coordination of primary and secondary control would lead to a high level of perceived control and adaptive behaviour.

For luck (Question 33 & Question 86), students were said to have primary control when their attributions to luck were of low importance to their performance on their examinations. The crosstabulation of changes in stress-coping behaviours by perceived control controlling for luck should yield results where fewer stress-coping behaviours would be found at the post-exam phase when students attributed a higher importance to luck for their performance on the exams. A reduction in adaptive behaviours where attributions to luck were high was hypothesised because this type of situation was one where students would be attributing the outcome of their actions to external and unstable forces. It was thought that students would only utilize stress-coping behaviours when they perceived that their actions had an influence on the exam environment.

For task difficulty (Question 18 & Question 80), students were said to have primary control when their attributions to task difficulty were of low importance to their performance on their examinations. The crosstabulation of changes in stress-coping behaviours by perceived control controlling for task difficulty should yield results where fewer

stress-coping behaviours would be found at the post-exam phase when students' attributed a higher importance to task difficulty for their performance on the exams. A reduction in adaptive behaviours was hypothesized where attributions to task difficulty were higher because students were attributing the outcome of their actions to external and unstable forces. Students' actions would have little influence on an exam with a higher degree of difficulty because they could not change the degree of difficulty of the exam, but they could change themselves. In this case the predicted strategy was for students to utilize secondary control and exhibit fewer behaviours.

For ability (Question 11 & Question 79), students were said to have primary control when their attributions to ability were of higher importance to their performance on their examinations. The crosstabulation of changes in stress-coping behaviours by perceived control controlling for ability should yield results where fewer stress-coping behaviours would be found at the post-exam phase when students' attributed a higher importance to ability for their performance on the exams. Fewer behaviours were predicted because the students' gained primary control through attributions to stable and internal types of factors so that there was no need to change the environment. Those who had low attributions to ability were unable to change themselves and would be predicted to change the environment through an increase in their behaviours.

For mood (Question 38 & Question 91), students were said to have primary control when their attributions to mood were of higher importance to their performance on their examinations. The

crosstabulation of changes in stress-coping behaviours by perceived control controlling for mood should yield results where more stress-coping behaviours would be found at the post-exam phase when students' attributed a higher importance to mood for their performance on the exams. More behaviours were predicted because the students gained primary control through attributions to unstable and internal factors necessitating a need for them to change their environment for them to maintain primary control.

1.4.2 Importance of Accuracy, Avoidance, and Distraction to Students

The students' perceived control over the examination, considered as an independent variable for the following hypotheses, was predicted to have influenced students' attitudes towards affiliation so that the importance of accuracy, avoidance, and distraction, considered as dependent variables, would change. The following hypotheses state the direction of changes for each of the variables.

Hypothesis 2: Perceived control will vary directly with the importance for students to accurately know how well they would perform on their exams.

Students were asked how important it was for them to accurately know before their exams how well they were about to perform on their exams (Question 30), and after their exams how well they had performed on their exams (Question 84). Albas and Albas suggested that both before and after their exams that students who were most interested in accurate social comparison "tended to be those who felt most confident in their performance" (1984:83,121). It was felt that perceived control should correspond with confidence so that the students who had higher perceived control would place more importance on accuracy in social comparison.

Hypothesis 3: Perceived control will vary inversely with the importance

for students to avoid thoughts about the exam.

Students were asked how important it was for them to avoid thinking about their exams by talking about other things both before (Question 31) and after (Question 84) their exams. Albas and Albas (1984:84) described this situation as one where students would seek to "maintain their poise by 'totally' refusing to discuss course material or even the upcoming exam". Those students most in need of maintaining their poise would place a greater importance on avoidance of talking about the exam. Thus, students who had less perceived control would place a greater importance on avoidance.

Hypothesis 4: Perceived control will vary inversely with the importance for students to distract classmates from talking about the exam.

Students were asked how important it was for them to distract classmates from talking about their exams before (Question 32) and after (Question 85) their exams. Albas and Albas described this situation as one where "... students who feel secure in their performance will have more intensive and extensive interactions both with others similar to themselves as well as with those who are 'miserable'" (1984:134). Thus, those students who had higher perceived control would place less importance on distraction.

1.4.3 Reported and Preferred Types of Affiliation

The students' perceived control, the independent variable, was predicted to have influenced the types of interactions students had with their

⁴ Preferred type of affiliation was defined as the student's assessment of the actual or expected grade on the examination of the person with

classmates so that their preferred affiliation⁴ and actual affiliation⁵ would have differed. The kind of company that students who were anxious would talk with has been described as a situation where interaction occurs on the basis of social comparison so that "'misery loves miserable company' ... 'but not too miserable'" (Schachter, 1959; Rabbie, 1963).

Hypothesis 5: Perceived control will vary inversely with the difference between the students' preferred type and the students' actual type of affiliation.

Where perceived control was low, the preferred type and actual type of affiliation should have differed so that the students' actual type of affiliation was with a classmate who had a grade that was higher than the type of classmate with whom the students' would have preferred to have affiliated. It was expected that the students with lower perceived control would have had less influence on their actual type of affiliation (Question 28 & Question 71) and would have been unable to meet their preferences for type of affiliation (Question 25 & Question 81).

Where perceived control was higher, the preferred type and actual type of affiliation are predicted to be essentially of the same type. Yet, variations may occur where students with higher perceived control may face negative sanctions by affiliating with students who had not performed as well. Albas and Albas (1984:89) described this situation as one where "... the typical routine involves individuals dramatizing

whom the student would prefer to affiliate.

⁵ Reported type of affiliation was defined as the student's assessment of the actual or expected grade on the examination of the person with whom the student affiliated.

their weak points while at the same time stressing the strengths of others". Thus for students with higher perceived control, their preferred type of affiliation was predicted to be at a higher level than that of their actual type of affiliation.

Chapter II

METHODOLOGY

This chapter describes the sampling procedure, the construction of a questionnaire on university examinations, the coding of open-ended questions, and the statistical analyses.

2.1 THE SAMPLING PROCEDURE

To draw a sample from the student population, the following was done: students were selected from the Faculties of Arts, and Science; a time slot where students were in classroom lectures (Introductory Courses) was randomly selected; permission was sought from instructors to administer the questionnaire during their class-time; the Office of the Dean in each faculty was informed that contact was being made with instructors; and the questionnaire was administered during the month of March of 1986.

This sample was chosen because the primary method of evaluation in first year courses was an examination. The sampling procedure was designed to eliminate the possibility of multiple responses to the questionnaire by any one respondent as only one lecture time slot was chosen. Laboratory and tutorial sections were not considered because they are usually highly structured and it was felt that it would be too disruptive to administer a questionnaire in the time available.

When a lecture slot was selected the maximum possible sample size was approximately 2200 students. Given that class attendance would be less than maximum class size, that some instructors would not allow for the administration of the questionnaire, and that student participation was voluntary participation, the actual number of respondents was hoped to be about 65% of the number of students attending a class in a time-slot (i.e. 65% of 2200, or 1430).

The actual size of the selected student population was 1147 students. Generally, the instructors were very co-operative as 80% of them allowed for the administration of the questionnaire. Participants were 691 students which means there was a 60.2% response rate. The classes which I was not allowed to approach constituted 16.4% of the population. Actual refusals to participate were only 23 students, or 2.0% of the population. The remaining 21.4% of the population were students who were absent from class on the day the questionnaire was administered. The characteristics of the sample population are further described in the results section.

2.2 THE STUDENTS' EXAMINATIONS

The examinations which the students wrote and were to consider when they answered the questionnaire were their mid-term examinations for the class in which they received the questionnaire. The dates of their mid-term exams ranged from February 12, 1986 to March 24, 1986. The dates of administration of the questionnaires ranged from March 1, 1986 to March 26, 1986. For 9 of 12 classes, the students participated in the study shortly after their exams and before they had access to their

grades for their exams. The other three classes had written their exams before the mid-term study break of one week, participated in the study approximately two weeks after they had written their exams, and had opportunity to know their grades for their exams.

The percentaged weights of the examinations to the students' course grades ranged from 8.0% to 25.0%. The mean weight of the exams was 17.6% (standard deviation = 5.9).

2.3 THE EXAMINATION ROOMS

The students wrote their examinations in their regular classrooms. The number of students in each room ranged from 22 to 131. The mean number of students per classroom was 78 (standard deviation = 34.0). The number of desks and thus maximum number of students per classroom ranged from 45 to 270. The mean number of places per classroom was 118 (standard deviation = 67.5). Notably, only one class had far fewer students than places in the classroom. Overall, the typical classroom situation was one where approximately 80 students wrote their mid-terms in a room with approximately 100 seats.

2.4 CONSTRUCTION OF A QUESTIONNAIRE ON UNIVERSITY EXAMINATIONS

A review of the literature on university examinations found very little which could be utilized for a study of the university examination as a social situation. Many studies on test anxiety were found in the psychological literature, but few dealt with the examination in a natural setting. This was not totally unexpected, and has already been noted in the social psychological literature. Zavalloni & Louis-Guerin

(1979) described not only the lack of relevant quantitative research in natural field settings, but the extreme problems in adapting the research instruments of the experimental setting to the natural field setting.

The first task of this study was to provide a description of examination behaviours. Thus, the questionnaire had to deal with demographic, academic, spatial, behavioural, and cognitive variables. Given a quantitative description of examination behaviours the study could then move towards statistical testing of the proposed hypotheses.

The questionnaire was designed to restrict the boundaries of the environment to the most recent examination which the student had in the class where they received the questionnaire. The general hypothesis of the model of control was that perceived control of the event influenced the types and prevalence of behaviours. To test this hypothesis, the questions were developed to study behaviours and their meanings at the university examination. The exam behaviours⁶ were then to be analysed to determine their prevalence, their meaning, and their effectiveness as coping behaviours. A "Student Questionnaire" and a "Background Questionnaire" dealt with the above types of variables.

⁶ The basis for the selection of examination behaviours was adapted from the recent book of Albas and Albas (1984). The Albas' description of examination behaviour gives a colourful depiction of both physiological and psychological reactions. Their ethnographic approach to the study of the examination was carried out as an in-depth analysis of many students' behaviours over an extended period of time.

2.4.1 Student Questionnaire

The questionnaire was designed to be self-administered during 10 to 15 minutes of class-time. The optimal time of administration was one to three classes after the examination. This time was desired because the questions were designed to be answered before the students knew their grades for their exams. Also, the time period of one to three classes was chosen to give the instructors some flexibility in their choice for the time for the administration of the questionnaire. The instructors specified whether the questionnaire was to be given out at the beginning or the end of their class-time. The following is a brief description of the questions. The questionnaire is enclosed as Appendix A.

2.4.2 Demographic and Academic Classification Questions

Questions on demographic characteristics such as gender, age, marital status, ethnicity and birth order were developed. The questions were mainly closed-ended response type. Student classification categories were chosen to match the university guidelines for grading, year classification, and faculty membership.

2.4.3 Behavioural Questions

The behaviours to be studied were those of the immediate pre-exam, exam act proper, and post-exam stages. The time frame for the immediate pre-exam starts at approximately one-half hour before the exam and ends when the instructor calls the class to attention. The exam phase proper starts at the end of the immediate pre-exam and ends when the students hand in their exams. The post-exam starts at the end of the exam phase proper and for this study is considered to end one-half hour later.

These stages as outlined by Albas and Albas (1984) were typically depicted as focussing around social-interaction. Thus, the questions dealt with talking, affiliation, praying, and behaviour towards exam artifacts such as books, pens, and manner of dress. Prompts within the questionnaire were given to ensure the student was aware of the temporal aspects of the questions (e.g. The following questions deal with things you did BEFORE the exam.).

2.4.4 Attributional Questions

Questions on attributions to luck, task difficulty, ability and mood were constructed. The students were asked to rate the importance of luck, task difficulty, ability and mood to their performance on the exams.

2.4.5 Cognitive Questions

Cognitive questions having to do with students' interpretation of meaning of the environment were designed to ask why a behaviour does, or does not occur. The questions on types of thoughts during an examination were adapted from Sarason (1980). The remainder were developed to look at reasons why students behaved as they did for each of the questions on the prevalence of specific examination behaviours. The majority of these questions were closed-ended with 5 point bipolar scales (e.g. 1= very unimportant to 5= very important).

2.4.6 Background Questionnaire

The background questionnaire was composed of two parts: a few questions asked of the instructor (Appendix B), and information on the exam room (Appendix C). This information was matched to the student questionnaire through the course numbers.

The instructors were asked to provide information on the grading weight of the exams, size of class, room location(s) of the exams. The exam room variables included size of room, type of lighting, location of doors, location of windows, and type of desks.

2.5 CODING OF OPEN-ENDED QUESTIONS

Open-ended questions were coded by first recording very similar responses along with the questionnaire number(s) on sheets. For this first stage, a very large number of categories were kept. Second, all of the categories were entered into the computer without grouping of responses. Third, an initial frequency distribution was produced to find the major response types. At this time, categories were grouped with their most similar response type if they were of low frequency, and if the category had a similar response type.

Albas and Albas (1984) reported many different reasons for affiliating. The major response types they reported were: social comparison, accuracy, distraction and self-enhancement. The reasons students report for affiliating will be grouped into these categories. In cases where the responses were not clear the responses were called 'other reasons'. Table 1 presents the recode statements to group the reasons to affiliate. The numbers in the recode statements may be matched to the categories in the tables which will be presented for reasons for affiliating.

TABLE 1

Recode Statement to Group Reasons for Affiliating

```

/* SPSSX RECODE STATEMENTS ARE UTILIZED TO GROUP DATA */
V30 'PRIMARY REASON FOR AFFILIATION AT THE PRE-EXAM'

RECODE V30 (6,18,31,35=1) (5,7,15,37=2)
(1,4,8,10,11,14,16,17,19,20,21,23,25,28,29,30,32,33,34,36,38 THRU HI=0)
(2,3,22,24,26,36=3) (12,13,27=4)

VALUE LABELS
0'OTHER' 1'SOCIAL SUPPORT' 2'ACCURACY'
3'SELF-ENHANCEMENT' 4'DISTRACTION'/

VARIABLE LABELS
V51 'PRIMARY REASON FOR post-exam AFFILIATION OR NONAFFILIATION'

RECODE V51 (8,15,37,38,46=1) (1,5,6,13,14,20,49,50=2) (2,22=4)
(3,4,7,9 THRU 12,16,17,18,19,21,22 THRU 36,39 THRU 45,47,48,51,52=0)/

VALUE LABELS V51 1'SOCIAL SUPPORT' 2'ACCURACY' 3'SELF-ENHANCEMENT'
4'DISTRACTION' 0'OTHER'/

```

2.6 STATISTICAL ANALYSES

The results of this study are presented through the use of the following: simple frequency distributions where summary measures include appropriate measures of central tendency and of dispersion; bivariate tables where changes in pre-exam to post-exam perceived control are crosstabulated against each of the variables in the hypotheses; chi-square will be used to measure the significance of differences in the distribution of the variables; correlation coefficients are used as measures of association to make inferences as to the strength and direction of the relationships between variables; for multivariate tables, Chi-square, and correlation coefficients are used as summary statistics; finally, discriminant function analyses are used to assess what best predicted the students' affiliation and rituals.

Chapter III

RESULTS

The results are organized into seven sections: a description of the sample; a description of students' immediate pre-exam behaviours; a description of students' post-exam behaviours; an explanation of students' immediate pre-exam behaviours; an explanation of students' post-exam behaviours; a description of the changes in students' exam behaviours, perceived control, and attributions from the immediate pre-exam phase to the post-exam phase; and an explanation of the changes in exam behaviours from the immediate pre-exam phase to the post-exam phase.

3.1 A DESCRIPTION OF THE SAMPLE

The demographic and academic characteristics of the sample population are presented in the following sections. Whenever possible the characteristics of the sample were compared to the characteristics of the population from the Faculties of Arts and Science. Demographic variables included sex, age, marital status, ethnicity, and order of birth. Academic variables included faculty membership, year in program, average letter grade, importance of course, and expected letter grade in course

3.1.1 Demographic Variables

3.1.1.1 Sex of Students

For the overall sample there were 50.5% females and 49.5% males with over-representation by sex occurring in both faculties. More males than females were enrolled in Science, and more females than males were enrolled in Arts when the distributions were compared. The same type of over-representation existed for the overall faculty populations for the previous year (Institutional Statistics, 1984-85:22). Thus, this over-representation of sex within the sample reflected the overall trend for the population within each faculty.

3.1.1.2 Age of Students

The mean age of students was 20.6 years (standard deviation = 3.9). The median age was 19 years. When the distribution of age for the sample was compared to the distribution of age for students within Arts, and Science, the sample had slightly younger mean age compared with the population (Institutional Statistics, 1984-85:30). Since the classes which were sampled for this study were first-year classes and the comparison population included all undergraduate classes, the results were not surprising.

3.1.1.3 Marital Status of Students

The marital statuses of students were: single, 92.9%, married, 5.7%, separated, 0.8%, divorced, 0.5%, and common-law, 0.2%. Eight percent of students did not answer this question. The above percentages were calculated as percentages of those that responded to the question. Since there were so many single students this variable will not be considered in the analyses.

3.1.1.4 Ethnicity of Students

Table 2 presents the distribution of the students by ethnicity. The students were asked to describe their ethnic identity (nationality background). While there was a wide diversity of ethnic backgrounds of students, there was an under-representation of students from ethnic minority groups and particularly from Native-Canadian backgrounds when compared to the ethnic groups within the City of Winnipeg (Statistics Canada, 1982). Since there were few actual refusals to participate, this sampling bias is attributed to ethnic minority groups being actually under-represented in the population.

TABLE 2
Ethnicity of Students

	FREQUENCY	VALID PERCENT
CANADIAN	157	26.4
DUAL CANADIAN	99	16.7
OTHER SINGLE	277	46.6
OTHER DUAL	61	10.3
MISSING	97	
	-----	-----
	691	100.0

3.1.1.5 Order of Birth

The ordinal variable of order of birth was included primarily to enable a comparison to the work of Schachter (1959:42-89) where ordinal position was found to influence the relationship between anxiety and

affiliation. The distribution of valid responses by students was: 5.0% were an only child, 30.0% were an oldest child, 28.0% were a middle child, and 34.4% were a youngest child. Seven percent of students did not answer this question.

3.1.2 Academic Variables

3.1.2.1 Faculty Membership

Table 3 presents the frequencies for the students' faculty of membership. The percentages of each group were similar to the percentages of a comparison population from the university for first year courses (Institutional Statistics, 1984-85:40).

	FREQUENCY	VALID PERCENT
ARTS	347	50.2
SCIENCE	182	26.3
FINE ARTS	6	.9
PHYSICAL EDUCATION	7	1.0
AGRICULTURE/ENGINEERING	23	3.3
COMMERCE/ADMIN STUDIES	21	3.0
HUMAN ECOLOGY	31	4.5
EDUCATION	45	6.5
NURSING	29	4.2
MISSING	0	
TOTAL	691	100.0

An additional analysis for each of the classes, is to classify students as being in a class which is of the 'same type' as their faculty of membership or as a 'crossover'. An example of a 'same type' of class would be an Arts student in a class which is an Arts course such as Sociology. An example of a crossover is where a Science student is taking an class in the Faculty of Arts. The sample was examined to see how it reflected the population.

Sixty-one percent of the students taking an Arts course were students whose faculty of membership was Arts. Most of the students, 21.5%, who took an Arts course as an elective were students whose faculty of membership was Science. All other groups were of a much smaller percentage of the sample.

Only 36.3% of the students who were taking a Science course were members of the Faculty of Science. There were several large groups of students taking an elective Science course. These included: Arts, 27.4%, Nursing, 11.1%, Agriculture and Engineering, 8.4%, Human Ecology, 8.0%, and Education, 7.1%. While the average undergraduate crossover for Arts and Science were only 7.0% and 6.0% (Institutional Statistics, 1984-85:43), the crossover between faculties for the sample distribution reflected the greater heterogeneity of first-year classes.

3.1.2.2 Year in Program

Table 4 presents the frequencies for the students' year in their program. The mean response was 1.63 years (standard deviation = 0.89). The five students enrolled as "special students" were not considered in the computation of the statistics because their status does not have a year equivalent.

TABLE 4
Year in Program

	FREQUENCY	VALID PERCENT
FIRST YEAR	408	59.6
SECOND YEAR	150	21.9
THIRD YEAR	101	14.8
FOURTH YEAR	20	2.9
SPECIAL / OTHER	5	.7
MISSING	7	
	-----	-----
TOTAL	691	100.0

3.1.2.3 Average Letter Grade

Table 5 presents the distribution of average letter grade for the students. The median grade was B. The distribution had no significant differences from the distribution of actual grades of a comparison group of students who attended the previous year (Institutional Statistics, 1984-85:60-62).

3.1.2.4 Importance of Course

Table 6 presents the frequencies for the importance of the course to the student's program as reported by the student. The mean degree of importance was 3.2 (standard deviation 1.3). This showed that most students' felt the courses were somewhat neutral in degree of importance.

TABLE 5
Average Letter Grade

	FREQUENCY	VALID PERCENT
A+	2	.3
A	44	6.5
B+	116	17.0
B	203	29.8
C+	204	30.0
C	104	15.3
D	8	1.2
MISSING	10	
	-----	-----
TOTAL	691	100.0

TABLE 6
Importance of Course

	FREQUENCY	VALID PERCENT
VERY UNIMPORTANT	97	14.0
SOMEWHAT UNIMPORTANT	96	13.9
NEUTRAL	215	31.1
SOMEWHAT IMPORTANT	149	21.6
VERY IMPORTANT	134	19.4
	-----	-----
TOTAL	691	100.0

3.1.2.5 Expected Letter Grade in Course

Table 7 shows the frequencies for the students' expected letter grade in their course. The median category was B. The upper level grades are

probably overestimated, as approximately 45-55% of students in First year courses in Arts and Science would actually get a B or better (Institutional Statistics, 1984-85:60-62), but on the whole the distribution of students' expected grades was approximately the same as the distribution of students' actual grades.

TABLE 7
Expected Letter Grade in Course

	FREQUENCY	VALID PERCENT
A+	12	1.8
A	94	14.3
B+	129	19.6
B	160	24.3
C+	131	19.9
C	105	16.0
D	26	4.0
F	1	.2
MISSING	33	
TOTAL	----- 691	----- 100.0

3.1.3 Representativeness of the Sample Population

Given that the responses for the demographic variables (age and sex), and academic variables (average letter grade, year in program, and faculty membership) closely matched those of a comparison population, it seems that the sample is representative of the student population which took first year classes in the Faculties of Arts and Science. Thus, all other measures from the survey instrument were considered as generalizable to the student population.

3.2 STUDENTS' IMMEDIATE PRE-EXAMINATION BEHAVIOURS

The students' responses to the questionnaire items on time of arrival, affiliation, reasons for affiliation, reasons for not affiliating, wanting affiliation, reasons for wanting affiliation, reasons for not wanting affiliation, exam centrality, actual type of affiliation, preferred type of affiliation, rituals before exams, reasons for rituals, and types of rituals are presented to describe the prevalence of immediate pre-exam activities of students.

3.2.1 Time of Arrival Outside the Examination Room

The frequencies for times the students arrived outside an exam room are presented. The table was compacted to include only the reported times of arrival. That is, times which were not reported, such as six minutes, were not included in the table. in Table 8. The median time of arrival was 10 minutes before the start of the exam. The mean time of arrival was slightly lower at 9 minutes before the exam (standard deviation 6.7). This difference was due to the skewness of the distribution of times (Skewness=2.0). This meant that students tended to arrive close to the start of the exams.

The general setting for the gathering of students started with a few students arriving at 30 minutes before the exam, increasing to 21% at 10 minutes, 55% at 5 minutes, and finally undergoing rapid transition so that nearly 100% had arrived by the final few minutes. Few students arrived exactly at the beginning, or late, for the start of the exam. These results followed the reported pattern by Albas and Albas (1984:77).

TABLE 8
Time of Arrival at the Examination

	VALUE	FREQUENCY	VALID PERCENT
	0	22	3.2
T	1	21	3.1
I	2	36	5.3
M	3	15	2.2
E	4	5	.7
	5	207	30.4
I	7	7	1.0
N	8	6	.9
	10	220	32.3
M	12	2	.3
I	15	83	12.2
N	20	34	5.0
U	25	3	.4
T	30	17	2.5
E	40	2	.3
S	45	1	.1
	60	1	.1
	MISSING	9	
	TOTAL	691	100.0

3.2.2 Affiliating Before the Examination

Affiliating as an examination behaviour was defined as whether or not the students talked with classmates immediately before the examinations. Table 9 shows that 57% of the students actually did affiliate in the last half hour before their examination. Albas and Albas (1984:83) described affiliation as a stress-coping behaviour used by many students. They (1984:82) utilized the work of Schachter (1959) to predict high levels of affiliation, which they argue reached a peak in the last half hour or so before the examination. The results of this

study show that most students affiliated, but also it was evident that many students had not affiliated before the examination. The significant question goes beyond the identification of the rate of affiliation. Why would some students affiliate while others did not? This question is examined in the following presentation.

	FREQUENCY	VALID PERCENT
AFFILIATED	394	57.4
DID NOT AFFILIATE	292	42.6
MISSING	5	
TOTAL	----- 691	----- 100.0

3.2.3 Students' Reasons for Affiliating Before Their Exams

Table 10 presents the students' primary reason for affiliation at the immediate pre-examination. Note that some numbers are not present within the table because very similar response types were grouped together and only one number was retained. The modal response, 17.8%, was that students chose to affiliate to remain calm/relax before writing their examination. Social comparison for accuracy, and self-enhancement were the next most highly prevalent reasons for affiliation -- 12.7% of students wanted to find out how well others were prepared, and 13.0% of students had last minute questions.

While each of the types of responses may be analysed as an important reason for affiliation, the open-ended responses were grouped to allow for comparisons to Albas and Albas (1984:83-85). The types of categories they used were: 1) social support, 2) self-enhancement, 3) accuracy, and 4) distraction. In cases where the reasons of students were not clear the responses were called 'other' reasons. The recode statement for the grouping of variables is shown in Table 1.

The grouped results were social support, 12.4%, self-enhancement, 23.9%, accuracy, 22.8%, distraction, 2.3%, and other reasons 38.6%. These results are contrary to the anxiety-affiliation hypothesis (Albas & Albas, 1984:83), which predicts people are primarily motivated by need for accuracy. While need for accuracy in social comparison was high, 22.8%, the variety of types of responses showed a greater prevalence of self-enhancement reasons than for accuracy reasons when social comparison was the main reason for social affiliation. This result supported the findings by Albas and Albas which "clearly [indicated that students] concern is more with self-enhancement than accuracy" (1984:85). Also, as an additional note, some 2.3% of students reported their main reason for affiliation was to avoid an accurate social comparison.

This evidence is very supportive of the descriptions by Albas and Albas (1984:83-85). That is, the evidence demonstrated social-affiliation at the pre-examination occurred for a variety of reasons beyond accurate social comparison. A description of why the students chose not to affiliate before the examination follows.

TABLE 10

Students' Reasons For Affiliating

VALUE		FREQUENCY	VALID PERCENT
1	DIDN'T WANT TO BE CONFUSED	3	.9
2	GEAR UP / STUDY FOR TEST	4	1.2
3	TO REMAIN CALM	60	17.8
4	NOT INTERESTED IN TALKING	4	1.2
5	FIND HOW WELL OTHER PREPARED	43	12.7
6	WISH EACH OTHER GOOD LUCK	3	.9
7	LAST MINUTE QUESTIONS	44	13.0
8	DIDN'T WANT TO HEAR BRAGGERS	2	.6
11	DIDN'T WANT TO GET TOO NERVOUS	3	.9
12	LIKES TO KEEP TO ONESELF	2	.6
13	GET MIND ON SOMETHING ELSE	4	1.2
14	DIDN'T THINK IT WOULD HELP	1	.3
15	FIND OUT HOW ANXIOUS OTHER WAS	2	.6
16	PROXIMITY / THEY ASKED	27	8.0
17	CAME TO CLASS TOGETHER	3	.9
18	EMOTIONAL SUPPORT	11	3.3
21	TOO NERVOUS	3	.9
22	GET'S RID OF TENSION	16	4.7
23	DOESN'T KNOW ANYONE	6	1.8
24	FORM OF STUDYING	6	1.8
25	NO REASON	6	1.8
26	KEEP CONCENTRATION	8	2.4
27	DIDN'T WANT TO THINK ABOUT EXAM	3	.9
29	DIDN'T HAVE TIME / LATE	1	.3
31	REASSURANCE / COMPANIONSHIP	7	2.1
32	EXAM ON EVERYONES MIND	8	2.4
33	FRIENDS	26	7.7
35	SOCIALIZE	28	8.3
36	SELF-CONFIDENT	1	.3
37	FIND OUT HOW MUCH SELF KNEW	1	.3
38	SUPERSTITIOUS	1	.3
40	TOO BUSY CRAMMING	1	.3
	MISSING	56	
	TOTAL	394	100.0

3.2.4 Students' Reasons for Not Affiliating Before Their Exams

Table 11 presents the students' primary reasons for not affiliating immediately before their examinations. The single most prevalent reason that students had not affiliated was that 23.7% of students did not know anyone. This was a passive type of reason for students' not to affiliate. Students gave other reasons for not affiliating which could be considered as much more active where the avoidance of interaction with others was pursued so that the students could maintain their self-composure. Examples of students' active avoidance of affiliation were as follows: 16.4% of students who said they did not want to be confused, 11.1% of students who stated they wanted to keep their concentration, and 5.0% of students who did not want to affiliate because they would get too nervous if they talked with classmates before their exams.

When the individual types of responses were grouped to enable comparison to Albas and Albas, the results were: social support at 0.3%, need for accuracy at 1.0%, self-enhancement at 15.4%, distraction at 2.4%, and other reasons at 80.8%. The responses for students who gave social support and accuracy types of reasons were re-examined because these seemed to be odd. Social support and accuracy were thought to be results which would require affiliation. It was found that these students had usually talked with a person other than a classmate. While this was a type of affiliation it was not defined as affiliation because the person was not a classmate. An analysis of the components of the category of other reasons found that friendship, and time-constraints/tardiness were the major reasons for not affiliating.

Overall, there are many reasons for students to not affiliate with others before examinations. Of great importance, not affiliating may be interpreted as a stress-coping behaviour for some students.

Further questions which go beyond an analysis of the amount and reasons for not affiliating are: 1) how many of the non-affiliators wanted to affiliate, and 2) what were their reasons for not affiliating even when they stated that they wanted to affiliate with other students?

TABLE 11

Students' Reasons For Not Affiliating

VALUE		FREQUENCY	VALID PERCENT
1	DIDN'T WANT TO BE CONFUSED	43	16.4
2	GEAR UP / STUDY FOR TEST	4	1.5
3	TO REMAIN CALM	11	4.2
4	NOT INTERESTED IN TALKING	11	4.2
5	FIND OUT HOW OTHER PREPARED	1	.4
7	LAST MINUTE QUESTIONS	1	.4
8	DIDN'T WANT TO HEAR QUESTIONS	2	.8
10	WANTED TO GET EXAM OVER WITH	3	1.1
11	DIDN'T WANT TO GET TOO NERVOUS	13	5.0
12	LIKES TO KEEP TO ONESELF	5	1.9
14	DIDN'T THINK IT WOULD HELP	4	1.5
15	FIND OUT HOW ANXIOUS OTHER WAS	1	.4
16	PROXIMITY / THEY ASKED	1	.4
17	CAME TO CLASS TOGETHER	1	.4
19	DIDN'T WANT TO HEAR MISSED PART	7	2.7
20	SHY ABOUT TALKING	4	1.5
21	TOO NERVOUS	3	1.1
23	DOESN'T KNOW ANYONE	62	23.7
24	FORM OF STUDYING	1	.4
25	NO REASON	8	3.1
26	KEEP CONCENTRATION	29	11.1
27	DIDN'T WANT TO THINK ABOUT EX	2	.8
29	DIDN'T HAVE TIME / LATE	27	10.3
30	DIDN'T WANT TO HEAR QUESTIONS	5	1.9
34	NO MOOD TO TALK	2	.8
35	SOCIALIZE	1	.4
36	SELF-CONFIDENT	3	1.1
38	SUPERSTITIOUS	1	.4
39	I NEVER DO	2	.8
40	TOO BUSY CRAMMING	2	.8
41	FRIENDS STUDYING	1	.4
42	FEELING HUNGOVER	1	.4
	MISSING	30	
	TOTAL	292	100.0

3.2.5 Wanting to Affiliate Before the Examination

'Wanting to affiliate' before an examination was defined as whether or not a student wanted to talk with classmates (if they had not actually affiliated), or with another (if they had affiliated) at their examinations, but did not. Taken in conjunction with those who affiliated, this variable allows for an accurate assessment of those who were 'affiliators' before the examination. Comparisons to Schachter (1959), and Albas and Albas (1984) were best made using the combination of actual affiliation and wanted affiliation. Albas and Albas (1984:82) described these 'affiliators' as a high percentage of students who would want to affiliate, and of these many should actually affiliate (Schachter, 1959; Deutcher, 1973).

The frequencies for wanted affiliation are presented in Table 12. There were 15.6% of students who wanted to affiliate. A further analysis of these students, by looking at whether they affiliated or did not, found that only one third, or 5.0%, of the sample wanted to affiliate but did not. The other two-thirds, or 10.6%, wanted to affiliate beyond their actual affiliation at the pre-examination. Thus, when actual affiliators and those who wanted affiliation but did not were considered together there were 62.0% of students who were 'affiliators'. This result is similar to Schachter's finding for the prevalence of affiliation for those in high anxiety conditions (1959:18). Albas and Albas by assuming that the exam was a high stress situation would have expected the prevalence of wanted affiliation to be that which was found here. Thus, the results of this study support the report by Albas and Albas for the prevalence of 'affiliators'.

Following is a description of the students' reasons for not affiliating even though they wanted to affiliate before their exams.

	FREQUENCY	VALID PERCENT
WANTED TO AFFILIATE	105	15.6
DID NOT WANT TO AFFILIATE	567	84.4
MISSING	19	
	-----	-----
TOTAL	691	100.0

3.2.6 Reasons for Not Affiliating When Students Wanted to Affiliate

Table 13 presents the students' reasons for not affiliating, even though the students' wanted affiliation. The modal response, 43.5%, was that students' wanted to affiliate but did not because they did not know anyone at the exam. The remaining responses can only be considered as individual cases as so few students wanted to affiliate before the exam and did not affiliate.

TABLE 13

Students' Reasons For Not Affiliating When They Wanted to Affiliate

VALUE		FREQUENCY	VALID PERCENT
1	DIDN'T WANT TO BE CONFUSED	1	4.3
2	GEAR UP / STUDY FOR TEST	1	4.3
3	TO REMAIN CALM	3	13.0
5	FIND OUT HOW OTHER PREPARED	1	4.3
14	DIDN'T THINK IT WOULD HELP	1	4.3
15	FIND OUT HOW ANXIOUS OTHER WAS	1	4.3
20	SHY ABOUT TALKING	1	4.3
23	DOESN'T KNOW ANYONE	10	43.5
29	DIDN'T HAVE TIME / LATE	3	13.0
41	FRIENDS STUDYING	1	4.3
	MISSING	4	
	TOTAL	27	100.0

3.2.7 Students' Reasons for Not Wanting to Affiliate Before Their Exams

Table 14 presents the students' reasons for not wanting to affiliate at the immediate pre-examination. The results were essentially the same as those for not affiliating. Students' descriptions for not affiliating and not wanting affiliation show that their actions were methods which allowed them to cope with the exam environment. Even though 9.8% of students came late, and thus did not have an opportunity to affiliate with classmates, the remaining 91.2% had opportunity and many chose not to affiliate. The major finding here is that many of those who did not want affiliation stated that they did so primarily because they wanted to maintain their self-composure by remaining calm, not allowing other students to confuse them, or by concentrating on the exam.

TABLE 14

Students' Reasons For Not Wanting to Affiliate

VALUE		FREQUENCY	VALID PERCENT
1	DIDN'T WANT TO BE CONFUSED	41	17.4
2	GEAR UP / STUDY FOR TEST	3	1.3
3	TO REMAIN CALM	8	3.4
4	NOT INTERESTED IN TALKING	11	4.7
7	LAST MINUTE QUESTIONS	1	.4
8	DIDN'T WANT TO HEAR BRAGGERS	2	.9
10	WANTED TO GET EXAM OVER WITH	3	1.3
11	DIDN'T WANT TO GET TOO NERVOUS	13	5.5
12	LIKES TO KEEP TO ONESELF	5	2.1
14	DIDN'T THINK IT WOULD HELP	3	1.3
16	PROXIMITY / THEY ASKED	1	.4
17	CAME TO CLASS TOGETHER	1	.4
19	DIDN'T WANT TO HEAR MISSED PART	7	3.0
20	SHY ABOUT TALKING	3	1.3
21	TOO NERVOUS	3	1.3
23	DOESN'T KNOW ANYONE	51	21.7
24	FORM OF STUDYING	1	.4
25	NO REASON	7	3.0
26	KEEP CONCENTRATION	29	12.3
27	DIDN'T WANT TO THINK	2	.9
29	DIDN'T HAVE TIME / LATE	23	9.8
30	DIDN'T WANT TO HEAR QUESTIONS	5	2.1
34	NO MOOD TO TALK	2	.9
35	SOCIALIZE	1	.4
36	SELF-CONFIDENT	3	1.3
38	SUPERSTIOUS	1	.4
39	I NEVER DO	2	.9
40	TOO BUSY CRAMMING	2	.9
42	FEELING HUNGOVER	1	.4
	MISSING	23	
	TOTAL	258	100.0

3.2.8 Examination Centrality Before the Examination

The results of this study have shown the variations in the students' use of social-affiliation before their examinations. A further descriptive aspect of students' affiliation is a presentation of what it was that the

students talked about most. Table 15 presents the frequencies for which the examination was, or would have been, the central topic of conversation. The majority of students who affiliated, 71.8%, wanted to talk the most about the exam. Similarly, the majority of students who wanted to affiliate, 67.6%, would have chosen to talk the most about the exam.

	FREQUENCY	VALID PERCENT
(AFFILIATED)		
TALKED ABOUT EXAM	280	71.8
TALKED ABOUT OTHER TOPIC	110	28.2
MISSING	301	
	-----	-----
TOTAL	691	100.0
(WANTED TO AFFILIATE)		
TALKED ABOUT EXAM	73	67.6
TALKED ABOUT OTHER TOPIC	35	32.4
MISSING	583	
	-----	-----
TOTAL	691	100.0

These distributions support the contentions by Albas and Albas (1984:83) that the source of anxiety, the examination, is the central reason for conversation, and that a significant number of students will talk about the examination. The relative importance of the topic of conversation will be explored when the explanations for affiliation are presented.

3.2.9 Reported and Preferred Types of Affiliation Before the Examination

A final descriptive aspect of students' affiliation before the exams is a description of whom the students actually affiliated, and with whom they would have preferred to affiliate. Table 16 presents the students' assessment of the student with whom they talked the most immediately before the exams. The students were asked to compare their own grade to the others' grade with the others' grade being the point of reference and assessed as much lower to much higher than their own grade on a scale of 1 to 5. The modal response, 3 at 57.9%, showed that most students talked with others whose grades were similar to their own grades (i.e. 3 on the scale of 5). The average response, mean = 3.1 (standard deviation .77), was for students to have actually affiliated with students who had slightly grades than their own grades.

	FREQUENCY	VALID PERCENT
MUCH LOWER GRADE	6	1.5
SOMEWHAT LOWER GRADE	66	16.6
SAME GRADE	230	57.9
SOMEWHAT HIGHER GRADE	77	19.4
MUCH HIGHER GRADE	18	4.5
MISSING	294	
	-----	-----
TOTAL	691	100.0

Table 17 presents the students' preferred type of person with whom they would like to interact. The modal response, 3 at 42.2%, for preferred type of affiliation was the same as for actual type of affiliation. Most students would have preferred to have interacted with a student whose grade that would have been the same as their own grade. However, the average response for preferred type of affiliation, mean =3.5 (standard deviation .86), was for students to have preferred affiliation with students who had higher grades than their own grades. This difference will be examined as a factor when an explanation for affiliation is presented.

TABLE 17

Preferred Type of Affiliation Before the Examination

	FREQUENCY	VALID PERCENT
MUCH LOWER GRADE	10	1.6
SOMEWHAT LOWER GRADE	21	3.3
SAME GRADE	350	55.0
SOMEWHAT HIGHER GRADE	149	83.3
MUCH HIGHER GRADE	106	16.7
MISSING	55	
	-----	-----
TOTAL	691	100.0

3.2.10 Rituals Before the Examination

Students were asked if they acted out any specific rituals in the last half-hour before the exams. The use of rituals may have been in addition to, or exclusive of, the use of social affiliation. Thus, the

use of rituals may be described in relation to the use of social affiliation.

Thirty-three percent of the students said they acted out a ritual before the examination. This result provided some support for the report by Albas and Albas on the prevalence of rituals. Albas and Albas (1984:77-78) described the use of rituals as an occurrence where many students would use rituals when they were alone or not able to utilise social affiliation. A further analysis was performed by crosstabulating rituals against affiliation to describe the relation of rituals to affiliation. Students may have used either, both, or neither. The results show: 14.3% used only rituals, 37.7% only affiliated, 19.3% used both, and 28.7% used neither.

However, some questions remain on the reasons for the prevalence of rituals in conjunction with affiliation because there was a sizeable group of students who used neither affiliation nor rituals. This result will be explored later. Next is an examination of the students' reasons for their use of rituals.

3.2.11 Reasons for Rituals Before the Examination

The students' reasons for their use of rituals are presented in Table 18. The modal response at 45% was that students used rituals to relax or calm their nerves so that they would perform better on the exam. Self-enhancement was also achieved by clearing of the mind, for 5.6% of students, and distraction from thinking about the exam, for 7.9% of students. Also, an aid to performance through knowing that God was helping to provide support was reported by 9.3% of the students.

These results support the interpretations of rituals given by Albas and Albas (1984:77) that students will use rituals to aid performance on the exam. Clearly, rituals may be described by students as methods which allowed them to cope with the stress of exams.

TABLE 18

Reasons for Rituals Before the Examination

	FREQUENCY	VALID PERCENT
RELAX / CALM NERVES	63	45.0
DISTRACTION FROM EXAM	11	7.9
MAKES SELF FEEL BETTER	2	1.4
TO HELP REMEMBER	5	3.6
KEEP CONFIDENCE	4	2.9
CLEAR MIND	21	15.0
SELF-ENCOURAGEMENT	10	7.1
ANSWER QUESTIONS	2	1.4
SENSE OF SECURITY	2	1.4
DOESN'T KNOW	1	.7
GOD IS HELPING	13	9.3
NERVOUS HABIT	1	.7
AVOID PEOPLE	1	.7
IMPROVES CONCENTRATION	4	2.9
MISSING	551	
TOTAL	691	100.0

3.2.12 Types of Rituals Before the Examination

The types of rituals used by students are presented in Table 19. The modal category, 39.7%, was a self-prayer. The next most common rituals were sitting peacefully, 10.5%, and going for a walk, 10.0%. The diversity of types of rituals supports the descriptions by Albas and Albas (1984:77-79).

TABLE 19

Types of Rituals Before the Examination

	FREQUENCY	VALID PERCENT
SELF-PRAYER	83	39.7
GO TO CHURCH	2	1.0
SIGN OF CROSS	1	.5
DEEP BREATHING	4	1.9
WORE SPECIAL RINGS	2	1.0
MEDITATE	5	2.4
POSITIVE THINKING	2	1.0
SAME/EXAM CLOTHES	2	1.0
WENT TO WASHROOM	4	1.9
GOOD LUCK CHARM	1	.5
VIDEO GAMES	1	.5
WENT FOR A WALK	21	10.0
FAVORITE PENS/PENCIL	1	.5
CRAMMING MATERIAL	12	5.7
SIT PEACEFULLY	22	10.5
SAT SAME AREA CLASS	1	.5
DROVE A CERTAIN ROUTE	1	.5
LISTENS TO MUSIC	8	3.8
COFFEE / CIGARETTE	14	6.7
THINK SOMETHING ELSE	13	6.2
TALK OTHER THINGS	1	.5
STUDY OTHER THINGS	2	1.0
TALK WITH FRIEND	2	1.0
TALK TO SELF	3	1.4
ARRIVE EARLY	1	.5
MISSING	482	
	-----	-----
TOTAL	691	100.0

3.3 STUDENTS' POST-EXAM BEHAVIOURS

The following section describes the students' post-exam phase activities. The questions asked students about their post-exam behaviour and were similar to the questions asked about their pre-exam behaviour. The presentation of the results for this section will

parallel the format for the presentation of results in the previous section.

The frequency distributions for the time students finished writing the exams, departure destination, affiliation, reasons for affiliation, reasons for not affiliating, wanting affiliation, reasons for wanting to affiliate, reasons for not wanting to affiliate, exam centrality, actual type of affiliation, preferred type of affiliation, and post-exam rituals are presented to describe the prevalence and types of post-examination activities.

3.3.1 Time Left When Students Finished Writing the Exams

Table 20 shows the frequency distribution for amount of time left when the students finished writing the exams. The distribution of times was negatively skewed so that students tended to finish nearer to the end of the allotted time for the exams. The modal response was for students to finish writing the exams exactly at the end. There were two other prevalent responses at respectively 5 and 10 minutes before the end of allotted time. Also, 5% of students reported that they were allowed to continue writing their exams past the end of allotted time.

The above descriptions of the time at which students finished writing the exams matched the descriptions by Albas and Albas (1984:117) as there were obvious waves of departure shown as the secondary peaks, and far fewer students who left very early from their exams. Notably, a minor difference from the descriptions by Albas and Albas was that students were allowed to continue writing past the end of allotted time. This difference is probably due to the informality of the mid-term

examination rules as opposed to the formality of the final-exam which they primarily described.

TABLE 20

Time Left When Finished Exam

	VALUE	FREQUENCY	VALID PERCENT
	-15	1	.2
	-10	2	.3
	-5	11	1.8
T	-3	7	1.2
I	-2	8	1.3
M	-1	1	.2
E	0	204	34.0
	1	3	.5
I	2	14	2.3
N	3	12	2.0
	4	4	.7
M	5	101	16.8
I	6	1	.2
N	8	8	1.3
U	10	112	18.7
T	12	2	.3
E	13	1	.2
S	15	49	8.2
	20	32	5.3
	23	1	.2
	25	5	.8
	30	20	3.3
	40	1	.2
	MISSING	91	
	TOTAL	691	100.0

3.3.2 Departure From the Examination

The students were asked where they went immediately after they had finished writing their exams. Table 21 shows the types of places where the students went. The two most prevalent destinations were their home or residence, 32.2%, and to their next class, 31.2%. The low frequency items were also of great interest as only 0.7% of students went to the instructor's office, and only 2.1% of students stayed immediately outside the exam room.

The description of post-exam departure destinations was similar to those described by Albas and Albas (1984:133) as most students moved to a variety of loose settings (i.e. home, lunch, gym, etc.) and few students moved to tight settings (i.e. instructor's office). One notable difference between the results of this study and the descriptions by Albas and Albas is that few students said they stayed outside the exam room for the first half hour. While this does not preclude the possibility for students to have interacted with each other after the exams, it may have influenced the duration and intensity of their affiliation. This difference may have been a function of their writing a mid-term examination rather than a final examination.

TABLE 21
Departure From the Examination

	FREQUENCY	VALID PERCENT
ANOTHER CLASS	210	31.2
HOME/RESIDENCE	217	32.2
OUTSIDE EXAM ROOM	14	2.1
PROF'S OFFICE	5	.7
VIDEO GAMES/GYM	13	1.9
LOUNGE/BAR	29	4.3
LUNCH	139	20.6
LIBRARY	37	5.5
MEET FRIENDS	10	1.5
MISSING	17	
	-----	-----
	691	100.0

3.3.3 Affiliating After the Examination

Affiliating at the post-examination phase was defined as whether or not the students talked with classmates immediately after their examinations. Table 22 shows that 45.9% of the students did affiliate in the first half-hour after their examinations. Albas and Albas (1984:120) described post-exam affiliation as a stress-coping behaviour used by most students. The results of this study show that many students affiliated, but that most students had not affiliated immediately after the mid-term examinations. While the rate of affiliation was somewhat lower than that which Albas and Albas report, the significant question goes beyond a description of the rate of affiliation. Why would some students affiliate after the exam while others would not? This question is examined in the following

presentation of students' reasons for affiliating or not affiliating at the post-exam phase.

	FREQUENCY	VALID PERCENT
AFFILIATED	311	45.9
DID NOT AFFILIATE	366	54.1
MISSING	14	
	-----	-----
TOTAL	691	100.0

3.3.4 Students' Reasons for Affiliating After The Exams

The distribution of students' primary reasons for affiliating after the examinations is presented in Table 23. The modal response, at 36.9%, was students affiliated so that they could question others to find out how the others felt about the exams. Many of the other less frequent reasons were similar to this response and indicated that students wanted to assess accuracy in social comparison. All of the remaining types of responses were of much lower prevalence. Yet, there were several interesting groups of similar response types.

Students were interested in finding out how well they performed on their exams. Some 5.5% of students checked with others to see if they both had given the same answers to the questions. Also, 4.4% of students asked others for their answers for questions with which they had problems.

Another group of reasons centered around the proxemics of the situation. Some 4.1% of students said their primary reason for affiliation was that other students had asked them questions about the exams. A few other responses included 2.6% of students who affiliated because they left the exam together and walked to their next class, and 0.7% of students who talked about the exam as they left to go to lunch.

Similar to the reasons for affiliating at the pre-exam, the reasons for affiliating at the post-exam were grouped to allow for comparisons to Albas and Albas. The same types of categories as used for the pre-exam were again used. Note, the recode statement for the grouping of variables was presented in Table 1.

The grouped results were social support, 12.2%; accuracy, 57.9%; distraction, 4.1%; self-enhancement, 0.0%; and other reasons, 25.8%. These results are contrary to the descriptions by Albas and Albas (1984:121) as accuracy of social comparison was shown to be a very prevalent reason for affiliation. Distraction of other students from talking about the exam by talking about other things was shown to be a reason for 4.1% of students. This supports the statement by Albas and Albas (1984:119) that Schachter may have been too hasty in discounting the importance of "a mental diversion from a miserable situation" as one reason for affiliation. Very problematic for Albas and Albas, however, was the lack of reasons which may be described as self-enhancement reasons. They reported that self-enhancement reasons would be prevalent. It may be that students did not distinguish between social support for themselves, and social support for others when they gave their responses. Further questions would have been necessary to

TABLE 23

Reasons for Affiliating at the Post-exam

VALUE		FREQUENCY	VALID PERCENT
1	CHECK FOR SAME ANSWERS	15	5.5
2	DOESN'T WANT TO KNOW DIFFER	4	1.5
3	NO OPPORTUNITY	3	1.1
4	NO NEED	4	1.5
5	FOR SOCIAL COMPARISON	4	1.5
6	ASK ABOUT PROBLEM QUESTIONS	12	4.4
7	MEET FRIENDS	15	5.5
8	SHARE FEELINGS	3	1.1
10	WENT TO NEXT CLASS	4	1.5
11	DOWNGRADE THE CLASS	2	.7
12	BAD MOOD ABOUT EXAM	2	.7
13	FIND HOW OTHER'S FELT	100	36.9
14	UNSURE OF OWN PERFORMANCE	2	.7
15	RELAX/RELIEVE TENSION	21	7.7
16	EMBARASSMENT	1	.4
17	DIDN'T THINK IT WOULD HURT	3	1.1
18	DIDN'T WANT TO FEEL STUPID	1	.4
19	FRIEND LEFT	3	1.1
20	FIND OUT HOW SELF DID	21	7.7
21	WENT HOME	4	1.5
22	WANTED TO FORGET EXAM	7	2.6
23	NOT INTERESTED	2	.7
25	WENT TO LUNCH	2	.7
26	DEPRESSED	1	.4
27	WENT ELSEWHERE/NO TIME	2	.7
30	OTHER'S ASKED QUESTIONS	11	4.1
32	KNEW DID WELL/NO NEED	1	.4
33	HAD ANOTHER EXAM LATER	2	.7
37	COMPLAIN ABOUT TIME	1	.4
38	SOCIALIZE	8	3.0
39	HABIT	1	.4
43	WALK FRIEND TO NEXT CLASS	3	1.1
45	WENT SHOPPING	1	.4
48	DIDN'T WANT TO HEAR BULLSHIT	1	.4
49	FIND OUT IF MARKS CURVED	1	.4
50	DETERMINE IF FAIR EXAM	2	.7
51	SEEMED NATURAL TO TALK	1	.4
	MISSING	40	
	TOTAL	311	100.0

determine which reason the students really meant to give for the

question.

3.3.5 Students' Reasons for Not Affiliating After The Exams

Table 24 shows the students' primary reason for not affiliating after the examinations. The modal response at 21.4% was students did not affiliate because either their friends had left the examination site, or they did not know anyone outside the examination room. Similar to not affiliating at the pre-examination phase, this was a passive type of avoidance of affiliation with classmates. Some students had not affiliated because they had other commitments elsewhere. Of these students, 19.3% had other classes, and 3.3% went elsewhere.

Other reasons suggested that for many students affiliation was actively avoided. Included here were 9.6% of students who wanted to forget about the exams, 5.7% of students who did not want to know about differences between their answers and the answers of others, and 2.7% of students who said that they were just not interested in talking with others after the exams.

The responses were again grouped to enable comparison to Albas and Albas (Recode statement in Table 1). The grouped results were: social support, 2.4%; accuracy, 3.9%; distraction, 15.4%; self-enhancement, 0.0%; and other reasons, 78.3%. When these results were compared to the grouped results for those who affiliated, the grouped types of social support and need for accuracy are less important reasons for those who did not affiliate after the exams. Also, distraction as a reason was much more prevalent for those who did not affiliate than for those who affiliated. The category of other reasons for not affiliating included

TABLE 24

Reasons for Not Affiliating at the Post-exam

VALUE		FREQUENCY	VALID PERCENT
1	CHECK FOR SAME ANSWERS	1	.3
2	DOESN'T WANT TO KNOW DIFFER	19	5.7
3	NO OPPORTUNITY	7	2.1
4	NO NEED	17	5.1
6	ASK ABOUT PROBLEM QUESTIONS	1	.3
7	MEET FRIENDS	4	1.2
9	TOO ANXIOUS TO TALK	3	.9
10	WENT TO NEXT CLASS	64	19.3
12	BAD MOOD ABOUT EXAM	3	.9
13	FIND HOW OTHER'S FELT	8	2.4
14	UNSURE OF OWN PERFORMANCE	2	.6
15	RELAX/RELIEVE TENSION	6	1.8
17	DIDN'T THINK IT WOULD HELP	5	1.5
19	FRIEND LEFT	71	21.4
20	FIND OUT HOW SELF DID	1	.3
21	WENT HOME	15	4.5
22	WANTED TO FORGET EXAM	32	9.6
23	NOT INTERESTED	9	2.7
24	HABIT	2	.6
25	WENT TO LUNCH	3	.9
26	DEPRESSED	2	.6
27	WENT ELSEWHERE/NO TIME	11	3.3
28	TALKING MAKES NERVOUS	1	.3
29	FINISHED EARLY AND LEFT	15	4.5
30	OTHER'S ASKED QUESTIONS	2	.6
31	WENT HOME TO SLEEP	3	.9
32	KNEW DID WELL/NO NEED	5	1.5
33	HAD ANOTHER EXAM LATER	4	1.2
34	READING TEXT ANSWERS	2	.6
35	FINISHED LATE/NO OPPORTUNITY	1	.3
36	TOO BUSY THINKING ABOUT EXAM	1	.3
38	SOCIALIZE	1	.3
40	TIRED/EXHAUSTED	4	1.2
41	HOMEWORK	2	.6
42	TOOK EXAM LATE	1	.3
44	WENT TO GYM	1	.3
46	FIND OUT IF DIFFICULT FOR OTHER	1	.3
47	NEVER DOES	1	.3
52	EMBARRASSED ABOUT MARK	1	.3
	MISSING	34	
	TOTAL	366	100.0

a great variety of types of reasons ranging from a lack of need or interest in affiliation to nervousness or anxiety after the exams. With both affiliating and not affiliating having such large 'other' reason categories, the utility of the grouped reasons may be such that the information students gave would be better utilized by reanalyzing the responses using a different formula for grouping.

Overall, the significance of these descriptions of reasons for not affiliating was that students described a wide variety of reasons, and a high prevalence of barriers to affiliation after the exams. Also, not affiliating after the exams was described as a stress-coping behaviour by only some of the students. A description of students who wanted to affiliate but did not affiliate follows.

3.3.6 Wanting to Affiliate After the Examination

'Wanting to affiliate' after an examination was defined as whether or not a student wanted to talk with classmates (if they had not actually affiliated), or with another (if they had affiliated) at the examinations, but did not. Taken in conjunction with those who affiliated after exams, this variable allows for an assessment of those who were 'affiliators' after the examinations.

Table 25 shows the frequencies for wanting to affiliate after the exams. There were 19.9% of students who wanted to affiliate. A crosstabulation of these students by those who affiliated shows 10.7% of the students wanted to affiliate but did not. The remaining 9.9% of students had affiliated and wanted further affiliation after the exams. Thus, when actual affiliation (45.9%, as shown in Table 22), and those

who wanted affiliation but did not were considered together, there were 56.8% of students who were 'affiliators' after the exams. This result provided support for the descriptions by Albas and Albas for the prevalence of 'affiliators'. The following is a presentation of the students' reasons for not affiliating even though they wanted to

TABLE 25
Wanting to Affiliate After the Examination

	FREQUENCY	VALID PERCENT
WANTED TO AFFILIATE	133	19.9
DID NOT WANT TO AFFILIATE	535	80.1
MISSING	23	
	-----	-----
TOTAL	691	100.0

affiliate after the exams.

3.3.7 Reasons for Not Affiliating When Students Wanted to Affiliate

Table 26 shows the students' reasons for not affiliating even though they wanted to affiliate after the exams. The main response types were reasons revolving around a lack of opportunity as 20.9% reported that their friends had left the exam site, 20.9% reported that they had to go to their next class, 10.4% finished their exams earlier than other students and left to do other things, 6.0% went elsewhere for work or travel, and 4.5% simply stated that they had had no opportunity to affiliate immediately after the exams.

The individual types of reasons were grouped as before (see recode statement in Table 1) to enable comparisons to Albas and Albas. The grouped results were: social support, 6.0%; accuracy, 9.0%; distraction, 7.5%; self-enhancement, 0.0%; and other reasons, 77.6%. These results were similar to the grouped results for those who did not affiliate after the exam. Overall, with social support being of lower prevalence than accuracy of social comparison, the results were contradictory to the interpretations by Albas and Albas (1984:121) for reasons behind wanting to affiliate.

TABLE 26

Students' Reasons for Not Affiliating When They Wanted to Affiliate

VALUE	FREQUENCY	VALID PERCENT
1 CHECK FOR SAME ANSWERS	1	1.5
2 DOESN'T WANT TO KNOW DIFFER	1	1.5
3 NO OPPORTUNITY	3	4.5
4 NO NEED	1	1.5
9 TOO ANXIOUS TO TALK	1	1.5
10 WENT TO NEXT CLASS	14	20.9
13 FIND HOW OTHER'S FELT	4	6.0
15 RELAX/RELIEVE TENSION	4	6.0
17 DIDN'T THINK IT WOULD HELP	1	1.5
19 FRIEND LEFT	14	20.9
20 FIND OUT HOW SELF DID	1	1.5
21 WENT HOME	5	7.5
22 WANTED TO FORGET EXAM	4	6.0
24 HABIT	1	1.5
27 WENT ELSEWHERE/NO TIME	4	6.0
29 FINISHED EARLY AND LEFT	7	10.4
40 TIRED/EXHAUSTED	1	1.5
MISSING	5	
	-----	-----
TOTAL	72	100.0

3.3.8 Students Reasons for Not Wanting to Affiliate After The Exams

Students' reasons for not wanting to affiliate and not affiliating are presented in Table 27. These results are essentially the same as those for not affiliating when they wanted to affiliate.

The modal response was that students' friends had left or were not outside the exam room. This again suggested that the lack of friends outside the room posed a major barrier to affiliation. The next most prevalent reason was that 19.9% had to leave to go to their next class. This result, which was different than those reported by Albas and Albas, may be a function of the students writing mid-term exams instead of final-exams, and having other classes after their exams. Other reasons suggested a more active avoidance of affiliation. There were 6.8% who said that they wanted to avoid finding out differences between their answers and the answers of other students. These students would fit well into the framework by Albas and Albas (1984:130) because their behaviour could be interpreted as not affiliating to avoid "actually increasing anxiety levels". Other active avoidance behaviours were 10.6% who wanted to forget about the exams, and 6.1% who simply said they had no need to talk with other students. These types of reasons do not support results of the Albas and Albas study. A possible reason for this difference may be that Albas and Albas reported too high a prevalence of a desire for affiliation.

The individual reasons were again arranged as grouped response types (see recode statement in Table 1). The results were: social support at 1.5%, accuracy at 2.7%, distraction at 17.5%, self-enhancement at 0.0%, and other reasons at 78.3%. These results provide some support for

TABLE 27

Reasons for Not Wanting to Affiliate at the Post-exam

VALUE		FREQUENCY	VALID PERCENT
2	DOESN'T WANT TO KNOW DIFFERENCES	18	6.8
3	NO OPPORTUNITY	4	1.5
4	NO NEED	16	6.1
6	ASK ABOUT PROBLEM QUESTIONS	1	.4
7	MEET FRIENDS	4	1.5
9	TOO ANXIOUS TO TALK	2	.8
10	WENT TO NEXT CLASS	50	19.0
12	BAD MOOD ABOUT EXAM	3	1.1
13	FIND HOW OTHER'S FELT	4	1.5
14	UNSURE OF OWN PERFORMANCE	2	.8
15	RELAX/RELIEVE TENSION	2	.8
17	DIDN'T THINK IT WOULD HELP	4	1.5
19	FRIEND LEFT	55	20.9
21	WENT HOME	10	3.8
22	WANTED TO FORGET EXAM	28	10.6
23	NOT INTERESTED	9	3.4
24	HABIT	1	.4
25	WENT TO LUNCH	3	1.1
26	DEPRESSED	2	.8
27	WENT ELSEWHERE/NO TIME	7	2.7
28	TALKING MAKES NERVOUS	1	.4
29	FINISHED EARLY AND LEFT	8	3.0
30	OTHER'S ASKED QUESTIONS	2	.8
31	WENT HOME TO SLEEP	3	1.1
32	KNEW DID WELL/NO NEED	5	1.9
33	HAD ANOTHER EXAM LATER	4	1.5
34	READING TEXT ANSWERS	2	.8
35	FINISHED LATE/NO OPPORTUNITY	1	.4
36	TOO BUSY THINKING ABOUT EXAM	1	.4
38	SOCIALIZE	1	.4
40	TIRED/EXHAUSTED	3	1.1
41	HOMEWORK	2	.8
42	TOOK EXAM LATE	1	.4
44	WENT TO GYM	1	.4
46	FIND OUT IF DIFFICULT FOR OTHER	1	.4
47	NEVER DOES	1	.4
52	EMBARRASSED ABOUT MARK	1	.4
	MISSING	28	
	TOTAL	291	100.0

Albas and Albas as distraction of others was shown to be of importance for some students which suggested that students actively avoided affiliation after the exams. One interpretation of the results was that not affiliating immediately after the exams was a stress-coping behaviour for some students. Also to support the statement that not affiliating was a stress-coping action was some students reported affiliating would be detrimental to them because it would produce greater tension and anxiety.

3.3.9 Examination Centrality After the Examination

A further descriptive aspect of students' affiliation after the examination was the degree to which the examination itself was the central topic of conversation. The frequencies for which the examination was or would have been the central topic of conversation are shown in Table 28. The vast majority of students who affiliated, 89.1%, talked about exams. Also, for those who wanted to affiliate but did not a great number, 75.9%, wanted to talk about exams. These results suggested that the exam itself was a primary factor behind students' affiliation after the exams. This factor will be explored further when the explanations for affiliation are presented.

TABLE 28

Examination Centrality After the Examination

	FREQUENCY	VALID PERCENT
(AFFILIATED)		
TALKED ABOUT EXAM	278	89.1
TALKED ABOUT OTHER TOPIC	340	10.9
MISSING	379	
	-----	-----
TOTAL	691	100.0
(WANTED TO AFFILIATE)		
TALKED ABOUT EXAM	110	75.9
TALKED ABOUT OTHER TOPIC	35	24.1
MISSING	546	
	-----	-----
TOTAL	691	100.0

3.3.10 Reported and Preferred Types of Affiliation After the Examination

A final aspect of students' affiliation after the exams is a description of those with whom the students actually affiliated, and with whom they would have preferred to have affiliated. The operationalization of these variables at the post-exam phase was the same as that for the pre-exam phase. The students were asked to compare their own grade with the others' grade with the others' grade being the point of reference and assessed as much higher to much lower (1=much lower to 5=much higher).

Table 29 shows the frequencies for the students' assessment of the student with whom they talked the most after their exams. The modal response, at 52.0%, was that students talked with others who had a

similar grade to their own. Also, the calculation of the average for the distribution, mean = 3.0 (standard deviation .84), showed students tended to affiliate with others who had the same type of grade as their own.

	FREQUENCY	VALID PERCENT
MUCH LOWER GRADE	10	3.1
SOMEWHAT LOWER GRADE	67	20.6
SAME GRADE	169	52.0
SOMEWHAT HIGHER GRADE	64	19.7
MUCH HIGHER GRADE	15	4.6
MISSING	343	
	-----	-----
TOTAL	691	100.0

Table 30 shows the frequencies for the type of student with whom students would have preferred to have affiliated after their exams. The modal response, at 63.5%, was that students would have preferred to have affiliated with other students whose grades were similar to their own. Somewhat different here from the distribution of actual affiliation was that the calculation of the average response (mean = 3.2, standard deviation .79) showed students would have preferred to affiliate with someone who had a grade which was higher than their own.

Both of the distributions for actual and preferred affiliation after the exams were similar to the distributions for types of affiliation before the exams. Note, while the difference between actual affiliation and preferred affiliation was in the direction for students to have preferred to have affiliated with a student with a higher grade, the difference at the post-exam phase ($3.2 - 3.0 = 0.2$) was not as great as it was at the immediate pre-exam phase ($3.5 - 3.1 = 0.4$). A possible reason for this decrease in differences, taken from the evident changes in reasons for affiliation, was that students most often affiliated for self-enhancement reasons at the immediate pre-exam phase and shifted to need for accuracy reasons at the post-exam phase. Thus, before the exams the types of students who were available to provide self-enhancement need not have been those who were expected to get higher grades. However, after the exams the students who could provide

TABLE 30

Preferred Type of Affiliation After the Exam

	FREQUENCY	VALID PERCENT
MUCH LOWER GRADE	22	3.4
SOMEWHAT LOWER GRADE	54	8.3
SAME GRADE	415	63.5
SOMEWHAT HIGHER GRADE	124	19.0
MUCH HIGHER GRADE	39	6.0
MISSING	37	
	-----	-----
TOTAL	691	100.0

an accurate assessment of the exam were those who had similar grades. Overall, students' types of affiliation followed the interpretations of Albas and Albas (1984:124) where students acted in a manner other than their preferences for types of affiliation. These variables will be examined as possible factors behind the rate of affiliation when an explanation for affiliation is presented.

3.3.11 Rituals After the Examinations

Students were asked if they acted out any specific rituals in the first half hour after the exams. The operationalization of rituals was similar to that for the pre-examination. Unfortunately, unlike the pre-exam phase, a question about reasons for post-exam rituals was not included because of space and time constraints for the questionnaire.

The students may have used rituals in addition to or exclusive of the use of affiliation after the exams. When rituals after the exams are described in their relation to social affiliation to show how students used either, both, or neither, the distributions were: 3.5% used only rituals, 42.0% used only affiliation, 3.0% used both, and 51.5% used neither. Notably, the prevalence and variations in the sizes of each of these groups were different from those of the pre-exam phase. Far fewer students had utilized rituals at the post-exam phase, (6.5%) than at the immediate pre-exam phase, (33.6%). Since students use of rituals at the immediate pre-exam phase had been primarily to gain self-enhancement through relaxation, a possible reason for the reduction in the use of rituals was that rituals were only considered as a self-enhancing type of behaviour. While a question to ask the students for their reasons

for use of rituals at the post-exam was not included, an inference can be made as to the changes in stress-coping strategies from the immediate pre-exam phase to the post-exam phase. The reasons for affiliation shifted from mainly self-enhancing at the immediate pre-exam to need for accuracy at the post-exam, demonstrating that the primary meaning of affiliation had shifted over time. Since rituals are primarily a non-social type of behaviour they would normally not be able to provide the students with an accurate social comparison of their position on the exams. Therefore, rituals may have been less evident because they were not enabling the students to gain an accurate social comparison. The types of rituals students used after the exams follow.

3.3.12 Types of Rituals After the Examinations

Table 31 presents the types of rituals used by students after their exams. The modal category, 76.7%, was a self-prayer. All other types were individual responses. Having described students' behaviours, next is a presentation of what best predicts students' use of affiliation and rituals at the pre-exam and post-exam phases.

TABLE 31
Examination Rituals After the Examination

	FREQUENCY	VALID PERCENT
SELF-PRAYER	33	76.7
THANKED GOD FOR BEING THERE	1	2.3
PROFANITIES	1	2.3
SMOKED A CIGARETTE	1	2.3
GYM WORK OUT	1	2.3
WENT TO PARTY/BAR	1	2.3
CHECKED EARLIER GRADES	1	2.3
HEAVY SIGH	1	2.3
LISTEN TO FAVORITE MUSIC	1	2.3
VIDEO GAMES TO COOL DOWN	1	2.3
THOUGHT PESSIMISTICLY	1	2.3
MISSING	648	
TOTAL	691	100.0

3.4 EXPLAINING THE STUDENTS' IMMEDIATE PRE-EXAM PHASE BEHAVIOURS

Stepwise discriminate function analyses were carried out to find out what best predicted the prevalence of students 1) affiliation, and 2) rituals at the immediate pre-examination phase. Demographic, academic, attributional, cognitive, and behavioural variables were used as independent variables for the prediction of students' behaviours.

3.4.1 Explaining Students' Affiliating at the Pre-exam Phase

The students' were categorized as whether the students either: 1) affiliated, or 2) had not affiliated. The following independent variables were included as predictors of group membership. Demographic variables were sex, age, and birth order. Academic variables were

importance of course to program, expected grade in course, average letter grade in program, and year in program. Attributional variables were the importance of luck, task difficulty, level of ability, and mood as influences on the students' performance on the test. Cognitive variables having to do with students' interpretations of the exam environment were: level of uncertainty, level of anxiety, level of perceived control, importance of accuracy, importance of distraction, importance of avoidance, and the actual and preferred types of classmates chosen based upon their grades in comparison to the students' own grades. Behavioural variables were time of arrival at the exam, brought books, class attendance during the term, and how often the student talked with classmates during the term. Categorical variables were dummy-coded to enable their inclusion in the analysis.

Of the 691 respondents, 5 were dropped from the analysis because of missing data for the classification of affiliating. Missing data for the independent variables were scattered over cases and variables. Students answered ninety seven percent of the questions. Missing data were recoded with the variable means substituted for the missing responses. The choice of substitution of means for missing values was used to enable the retention of the greatest number of respondents. The discriminant function procedure deletes cases listwise, and would in fact have reduced the sample size to 586 if substitution of group means was not used. Note, additional discriminant function analyses was performed to determine if this procedure influenced the selection of variables. The results of these analyses showed the same variables were selected.

The distribution of students' on affiliation is presented in Table 32. Since there were unequal numbers of students in each group, the a priori probabilities for classification of predicted group membership were adjusted so that the predictions were weighted to reflect the same probabilities of the characteristics of the known population. Since this procedure was carried out, one must be aware that those groups which had a greater variance about their group centroid would more often be the group for which membership was predicted even when the probabilities of inclusion were adjusted as higher (Tabachnick & Fidell, 1983:300).

TABLE 32

Number of Students in Each Group (Affiliating at Pre-exam)

	NUMBER OF CASES	PERCENT
AFFILIATED	394	57.9
DID NOT AFFILIATE	292	42.3
MISSING	5	
	-----	-----
TOTAL	691	100.0

An examination of the histograms showing the dispersion of groups about their centroids indicates that those who had affiliated were more widely dispersed about their centroid than were those who had not affiliated. Neither distribution was highly skewed. Thus, the probabilities of inclusion for predicted group membership were minimally adjusted to .55, and .45 which slightly differed from the actual

proportions within the distribution, .57, and .43, for group 1 and group 2 respectively. Notably, the adjustment of probabilities only influenced the classification of respondents for their group membership. The level of significance and structure of the discriminant functions were not influenced by this procedure (Tabachnick & Fidell, 1983:300).

Before proceeding with the interpretation of the discriminant function analysis, the sample was analysed to see if there were any univariate or multivariate outliers. There were several univariate outliers in the sample. These were scattered across the variables of age, time of arrival, and class attendance. These outliers were examined and were found to be valid responses. The distributions of the variables for which outliers were found were examined and found to be slightly skewed distributions. Use of these variables may violate the assumption of normality for tests of statistical significance. Since the number of cases was small, the following corrective procedure was carried out to enable the inclusion of these cases and variables in further analyses.

Each of the above variables was transformed by recoding the extreme scores so that the distribution approximated a normal distribution. Age was recoded so that ages 24 and above were considered as being age 24. Time of arrival was recoded with times of 25 minutes and earlier considered as being 25 minutes before the exams. Class attendance was recoded with absenteeism of 9 or more classes considered as being absent for 9 classes.

An analysis of the discriminant function scores showed that there were no significant multivariate outliers at the $p < .01$ level when Mahalanobis' D^2 was used as the stepwise method to produce the largest distance between groups. Thus, all cases and variables were retained for further analyses.

Finally, before proceeding with the analysis, a test of homogeneity of variance-covariance was made using Box's M. Each of the independent variables were entered as single predictors of group membership when Box's M was calculated. The statistical assumptions of Box's M are very demanding (Tabachnick & Fidell, 1983:300). Groups of variables which produced a significant score on Box's M may have posed only minor problems for the analysis. However of greater concern here was that none of the variables would have individually produced significant scores on Box's M. The level of significance used for this study was $p < .05$. The following variables had Box's M scores which were statistically significant: distraction, reported type of classmate, and preferred type of classmate. These variables above were deleted from further analysis.

The selected stepwise method of analysis was to minimize Wilks' Lambda and thus produce the largest multivariate F-ratio. The discriminate function was calculated, and had a Chi-square (13) = 177.23, $p < .05$. The canonical correlation was 0.48 which meant that the discriminant function was able to account for 22.0% of the variance shared between grouping variables and predictor variables. Thus, the discriminant function was significant, but had only a weak association between groups and predictor variables.

A structure matrix for within-groups correlations between discriminating variables and the discriminant functions is presented in

TABLE 33

Standardized Discriminant Function Structure Matrix For
Affiliating

(variables ordered by size of correlation within function)

VARIABLE	FUNCTION	UNIVARIATE F-RATIO
TALK IN CLASS	0.68	93.81 ¹
ACCURACY	-0.48	47.93 ¹
AGE	0.33	22.38 ¹
TIME OF ARRIVAL	-0.32	20.81 ¹
YEAR IN PROGRAM	0.26	14.21 ¹
SEX	-0.24	11.50 ¹
BROUGHT BOOKS	0.19	4.54 ¹
MOOD	-0.17	5.82 ¹
TASK DIFFICULTY	-0.13	
CONTROL	0.11	
AVOIDANCE	-0.09	
ANXIETY	-0.07	
STUDY IMMEDIATELY BEFORE	0.07	4.54 ¹
MIDDLE CHILD	0.06	
YOUNGEST CHILD	-0.04	
AVERAGE GRADE IN PROGRAM	-0.03	
UNCERTAINTY	0.02	
OLDEST CHILD	-0.01	
ONLY CHILD	0.01	
ATTENDENCE	-0.01	
EXPECTED GRADE IN COURSE	0.01	
ABILITY	0.00	
LUCK	0.00	
IMPORTANCE OF COURSE	0.00	4.05 ¹
CANONICAL CORRELATION	0.4798	
EIGENVALUE	0.2990	

¹P < .05
(1,684 d.f.)

Table 33. Variables with loadings greater than 0.3 were considered as having significantly contributed to the function. Four of 24 variables meet this criterion. The univariate F-ratios for these same four variables demonstrated that differences in means between the discriminant groups had statistical significance at $p = .05$ when each variable was individually tested. Since the goal here was to move beyond univariate tests of significance all of the variables were included to see how the variables would react when within-groups-correlations were analysed. When these same four independent variables were examined to determine if there was multicollinearity amongst the variables, in all cases multicollinearity was not significant, $p > .01$. Thus, each of the independent variables was considered as having a contribution to the discriminant function which was minimally affected by multicollinearity.

The discriminant function suggested that affiliation was best predicted when one looked at how often students talked in class with other students (5=Every Class to 1=Never in Class). Table 34 shows the mean scores for each of the groups for variables which significantly contributed to the discriminant function. Those who affiliated had talked more often in class (mean talking = 2.0) than had those who did not affiliate (mean talking = 1.1).

The importance of accuracy had the next highest loading on the discriminant function. This suggested that those students who affiliated were somewhat neutral as to how much importance they placed on accurately knowing how well they would perform before their exams (mean accuracy = 2.5), while students who did not affiliate did not

TABLE 34

Mean Scores for Variables used to Predict Affiliating

	TALK IN CLASS	MEAN SCORES		
		ACCURACY	AGE	TIME OF ARRIVAL
AFFILIATED	2.0	2.5	19.8	9.7
DID NOT AFFILIATE	1.1	2.0	20.5	7.7
BOTH	1.6	2.3	20.1	8.9

place importance on accurately knowing how well they would perform before their exams (mean accuracy = 2.0).

A third variable which had a significant loading on the discriminant function was the age of students. Those who had affiliated were younger (mean age = 19.8 years) than those who did not affiliate (mean age = 20.5 years). Since the distribution of this variable was normalized, the actual mean ages of groups would be different with those who did not affiliate being slightly older. This difference had to be considered because students of age 24 and above were considered to be age 24.

The final variable which had a significant loading on the discriminant function was the students' time of arrival at the exams. Those who affiliated arrived earlier (mean time = 9.7 minutes) than those who did not affiliate (mean time = 7.7 minutes).

After adjustment for all other variables, and keeping $p < .05$ for the four variables, three of the four variables significantly separated those who affiliated from those who did not affiliate. Table 35 shows

the F-ratios for each of the variables. While age of students had a high loading on the function it did not significantly separate those who affiliated from those who did not affiliate. Thus, age of students was dropped from the interpretation of the discriminant function.

TABLE 35

F-ratios for Variables used to Predict Pre-exam Affiliating

VARIABLE	F-RATIO
TALK IN CLASS	72.3 ¹
ACCURACY	21.2 ¹
AGE	1.0
TIME OF ARRIVAL	14.2 ¹

¹ p < .05

EACH F STATISTIC HAS 13 AND 672 DEGREES OF FREEDOM

Table 36 shows the results of the classification procedure where 71.7% or 492 of the 686 students were correctly classified in the final analysis of affiliating at the immediate pre-exam. A slightly higher percentage of those who affiliated, 75.9%, in comparison to those who did not affiliate, 66.1%, were correctly classified. Overall, these results were not surprising given that the earlier mentioned probability that students would affiliate was higher than the probability that students would not, and that there was greater dispersion of respondents about the group centroid for affiliation.

TABLE 36

Classification Results for Affiliating at the Pre-exam

LABEL	GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP	
			1	2
AFFILIATED	1	394	299 75.9%	95 24.1%
DID NOT AFFILIATE	2	292	99 33.9%	193 66.1%
MISSING		5		
TOTAL		691		

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 71.7%

3.4.2 Explaining Students' Use of Rituals at the Pre-exam Phase

Students' group membership, the dependent variable, was categorized as whether the students either 1) used a ritual, or 2) had not used a ritual at the immediate pre-exam phase. For the classification procedure the students were referred to as belonging to, respectively, group 1 or group 2. The initial set of independent variables used as predictors were the same as those used for the prediction of affiliation.

Of the 691 respondents, 55 were dropped from the analysis because the students did not answer the question on rituals. There was very little missing data for the independent variables. Students answered ninety-seven percent of the questions. Thus, missing data was recoded with the variable means substituted for the missing responses. The discriminant function procedure deleted cases listwise, and would in

fact have reduced the sample size to 570 if substitution of group means was not used. Additional analyses were performed to determine the influence of substitution of means on the structure of the discriminant function. The same variables were selected in both analyses.

The distribution of students' group membership are presented in Table 37. Since there were unequal numbers of students in each group, the a priori probabilities for classification of predicted group membership were adjusted so that the predictions were weighted to reflect the same probabilities of the characteristics of the known population.

	NUMBER OF CASES	PERCENT
USED A RITUAL	214	33.6
DID NOT USE A RITUAL	422	66.4
MISSING	55	
	-----	-----
TOTAL	691	100.0

An examination of the histograms showing the dispersion of groups about their centroids found that those who had not used rituals were more widely dispersed about their centroid than were those who had used rituals. Thus, the probabilities of inclusion for predicted group membership were adjusted by 10% of the higher probability, that is, they were set to .40, and .60 which slightly differed from the actual

proportions within the distribution, .34, and .66, for group 1 and group 2 respectively.

Before proceeding with the interpretation of the discriminant function analysis, the results were analysed to see if there were any univariate or multivariate outliers. There were several univariate outliers in the analysis. These were scattered across the variables of age, time of arrival, and class attendance. The outliers were examined and were found to be valid responses. These outliers were recoded in the same manner as that for the discriminant function analysis of affiliation of students at the immediate pre-exam. An analysis of the discriminant function scores showed that there were no significant multivariate outliers at the $p < .01$ level when Mahalanobis' D^2 was used as the stepwise method to produce the largest distance between groups. Thus, all cases and variables were retained for further analysis.

Finally, before proceeding with the analysis, a test of homogeneity of variance-covariance was made using Box's M. Each of the independent variables was entered as single predictors of group membership when Box's M was calculated. Significant scores on Box's M were not found at $p < .05$ for any of the variables. Thus, all of the variables were retained for further analyses.

The selected stepwise method of analysis was to minimize Wilks' lambda. The discriminate function was calculated, and had a Chi-square (9) = 36.74, $p < .05$. The canonical correlation was 0.23 which meant that the discriminant function was able to account for only 5.3% of the variance shared between grouping variables and predictor variables.

Thus, the discriminant function was significant, but had a very weak association between groups and predictor variables.

A structure matrix for within-groups correlations between discriminating variables and the discriminant functions is presented in Table 38. Variables with loadings greater than 0.3 were considered to have significantly contributed to the function. Four of 27 variables met this criterion. The univariate F-ratios for these variables showed that two of the four, mood and avoidance, had differences in means between the discriminant groups which had statistical significance at $p = .05$ when individually tested. Since the goal here was to move beyond univariate tests of significance all of the variables were included to see how the variables would react when within-groups-correlations were analysed. When these independent variables were examined to determine if there was multicollinearity among them, in all cases multicollinearity was not significant, at $p > .01$.

The discriminant function suggested that rituals were best predicted with students' attributions to the importance of mood as an influence on the students' performance on the exams (1=very unimportant to 5=very important). This variable had the highest loading, 0.73, on the discriminant function. Table 39 shows the mean scores for each of the groups for variables which significantly contributed to the discriminant function. Students' attributions to the importance of mood were higher when they used rituals (mean mood = 3.4) than when they had not used rituals (mean mood = 2.9). This is exactly as Albas and Albas (1984:77-79) would expect given that rituals are often performed to allay a mood, for example anxiety as in the case of the Trobriand Islanders (Malinowski, 1954).

TABLE 38

Standardized Discriminant Function Structure Matrix For Rituals

(variables ordered by size of correlation within function)

LABEL	FUNCTION	UNIVARIATE F-RATIO
MOOD	0.73	20.36 ¹
AVOIDANCE	0.38	5.45 ¹
AGE	0.31	
UNCERTAINTY	-0.30	
PREFERRED PERSON	0.29	
DISTRACTION	0.28	
TASK DIFFICULTY	-0.26	
ATTENDENCE	0.18	
ANXIETY	0.16	
TIME OF ARRIVAL	0.16	
LUCK	0.15	
ACCURACY	0.14	
EXPECTED GRADE IN COURSE	-0.14	
YEAR IN PROGRAM	0.12	
ABILITY	-0.11	
CONTROL	0.10	
IMPORTANCE OF COURSE	-0.09	
OLDEST CHILD	-0.06	
AVERAGE GRADE IN PROGRAM	-0.06	
MIDDLE CHILD	0.05	
ACTUAL TYPE OF CLASSMATE	0.04	
TALK IN CLASS	0.03	
STUDY IMMEDIATELY BEFORE	0.02	
YOUNGEST CHILD	0.02	
GENDER	0.01	
ONLY CHILD	-0.01	
BROUGHT BOOKS	-0.00	
CANONICAL CORRELATION	0.2381	
EIGENVALUE	0.0601	

¹P < .05
(1,634 d.f.)

The importance of avoiding thoughts about the exam by talking about other things was the variable which had the next highest loading, 0.38,

TABLE 39

Mean Scores for Selected Variables used to Predict Rituals

	MEAN SCORES			
	MOOD	AVOIDANCE	AGE	UNCERTAINTY
USED A RITUAL	3.4	2.3	20.3	2.9
DID NOT USE RITUAL	2.9	2.1	20.0	3.1
BOTH	3.1	2.2	20.1	3.0

on the discriminant function. This suggested that students who placed slightly more importance on avoiding thoughts about the exam (mean avoidance = 2.3) used rituals while those who avoided thoughts (mean avoidance = 2.1) did not use rituals. Overall, students did not feel that avoidance was important, 2.2 on the scale of 1=not very important to 5=very important, but there were varying degrees of unimportance.

Age of students was a third variable which significantly loaded, 0.31, on the discriminant function. Slightly older students used rituals (mean age = 20.3 years) than those students who had not used rituals (mean age = 20.0 years). The actual mean ages would be slightly different from what was found here because the distribution was normalized to remove outliers. That is, those who used rituals were slightly older than the mean ages which were found here.

The final variable which significantly loaded on the function, -0.30, was uncertainty. Those who used rituals were more uncertain about their upcoming performance on the exams (mean uncertainty = 2.9) than were

those who had not used rituals (mean uncertainty = 3.1) on a scale of 1=very uncertain to 5=very certain.

After adjustment for all other variables, and retaining variables with $p < .05$ for the four variables, each of the four variables significantly separated those who had used rituals from those who had not used rituals. Table 40 shows the F-ratios for each of the variables. While age of students had a high loading on the function it did not separate those who used a ritual from those who did not use a ritual.

TABLE 40

F-ratios for Variables used to Predict Rituals

VARIABLE	F-RATIO
MOOD	14.2 ¹
AVOIDANCE	2.2 ¹
AGE	3.2 ¹
UNCERTAINTY	2.2 ¹

¹ = $p < .05$

EACH F STATISTIC HAS 9 AND 626 DEGREES OF FREEDOM

Table 41 shows the results of the classification procedure where 66.2% or 421 of the 636 students were correctly classified in the final analysis of group membership. A disproportionate percentage of those who did not use a ritual, 85.3%, in comparison to those who did use a ritual, 28.5%, were correctly classified. The overall classification

rate was somewhat misleading because so few students were correctly predicted to have used rituals. This low rate of classification was understandable given that the probability of inclusion in the group that did not use a ritual was greater and that the dispersion about group centroids was also greater for those who did not use a ritual. However, since the primary goal here was not to provide the best classification equation, but to provide an explanatory variable structure which would show what best predicted differences between groups, the rate of classification was acceptable.

TABLE 41

Classification Results for Rituals at the Pre-exam

	GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP	
			1	2
USED A RITUAL	1	214	61 28.5%	153 71.5%
DID NOT USE RITUAL	2	422	62 14.7%	360 85.3%
MISSING		55		
TOTAL		691		
PERCENT	OF "GROUPED" CASES CORRECTLY CLASSIFIED: 66.2%			

3.5 EXPLAINING THE STUDENTS' POST-EXAM BEHAVIOURS

The analyses of post exam behaviours of students were similar to those for the immediate pre-exam phase. However, only post-exam affiliation was examined. There were too few cases of rituals at the post-exam phase. Thus, a completely parallel analysis of students' behaviours at both times was not possible.

A stepwise discriminate function analysis was carried out to find out what best predicted the prevalence of students' affiliation at the post-exam phase from demographic, academic, attributional, cognitive, and behavioural variables used as independent variables. Students' group membership, the dependent variable, was again categorized as whether the students had 1) affiliated, or 2) had not affiliated. The independent variables used for the analysis of the post-exam phase affiliation were essentially the same as those which were used for the analyses of the immediate pre-examination phase behaviours. The major change to the types of independent variables which were used was that the temporal focus of the questions shifted from the pre-exam to the post-exam for each of the attributional, cognitive, and behavioural variables. Also, two additional variables were included in the analysis. These were the students' evaluation of their own performance on the exam in comparison to their usual performance on exams, and the students' evaluation of their own performance on the exam in comparison to their classmates' performance on the exam.

Of the 691 students, 104 were dropped from the analysis because of missing data. All but 14 of the students answered the question on affiliation. However, unlike the immediate pre-exam phase questions,

there was much more missing data for the independent variables. The students who missed one question usually missed all of the questions on affiliation at the post-exam. This result was probably due to these questions being near the end of the questionnaire. Thus, unlike the pre-exam analysis where means were substituted for missing values, the analysis was carried out by deleting cases listwise (i.e. students were deleted from the analysis if they did not answer all of the questions).

The distribution of students' group membership are presented in Table 42. Since there were unequal numbers of students in each group, the a priori probabilities for classification of group membership were adjusted so that the predictions were weighted to reflect the known characteristics of students at the post-exam.

	NUMBER OF CASES	PERCENT
AFFILIATED	271	46.2
DID NOT AFFILIATE	316	53.8
MISSING	104	
	-----	-----
TOTAL	691	100.0

The histograms were examined to determine the dispersion about each of the group centroids. Both group 1 (affiliated) and group 2 (did not affiliate) had high amounts of dispersion about their group centroids.

Unlike the earlier analyses, the probabilities were not adjusted because neither group would be overpredicted solely on the basis of dispersion about the group centroids. Thus, the probabilities of inclusion for predicted group membership were set to .46, and .54 which were the proportions within the actual distribution, respectively, for group 1 and group 2.

The results were examined to determine if there were any univariate or multivariate outliers. There were some univariate outliers, and these were scattered across the variables age, and time finished exam. These responses were examined and were found to be valid responses. The distributions for each of these variables were examined and were found to be slightly skewed. Again, like the pre-exam analysis, use of these variables may be in violation of the discriminant function analysis assumption of normality of cases along variables and may influence the tests of statistical significance. As a corrective measure, both variables were recoded. Age was recoded in the same manner as it was recoded for the pre-exam analyses. The time students finished writing the exams was recoded so that students who had finished their exams 20 minutes and earlier before the end of allotted time were considered as having finished at 20 minutes before the end of the time for the exams. An analysis of the discriminant function scores found no significant multivariate outliers at the $p < .01$ level when Mahalanobis' D^2 was used as the stepwise method to produce the largest distance between groups. Thus, all remaining cases and variables were retained for further analyses.

A final step, before proceeding with the analysis, was a test of homogeneity of variance-covariance using Box's M. Each of the independent variables was entered as a single predictor of group membership and Box's M was calculated. Statistical significance of Box's M was obtained for one variable. The dummy variable for oldest child was deleted from further analyses.

The selected stepwise method of analysis was to minimize Wilks' lambda. The discriminate function was calculated, and had a Chi-square (9) = 149.67, $p < .05$. The canonical correlation was 0.48 which meant that the discriminant function was able to account for 22.0% of the variance shared between grouping variables and predictor variables. Thus, the discriminant function was significant, but had only a weak association between groups and predictor variables.

A structure matrix for within-groups correlations between discriminating variables and the discriminant functions is presented in Table 43. Variables with loadings greater than 0.3 were considered as having significantly contributed to the function. Two of 24 variables meet this criterion. The univariate F-ratios for both of these variables demonstrated that differences in means between the discriminant groups had statistical significance at $p = .05$ when each variable was individually tested. Noting that the goal here was to move beyond univariate tests of significance all of the variables were included to see how the variables would react when within-groups-correlations were analysed. When these same two independent variables were examined to determine if there was multicollinearity amongst the variables, in all cases multicollinearity was not significant, $p > .01$.

TABLE 43

Standardized Discriminant Function Structure Matrix For
Affiliating

(variables ordered by size of correlation within function)

LABEL	FUNC 1	UNIVARIATE F-RATIO
ACCURACY	-0.75	96.36 ¹
PRE-EXAM AFFILIATION	0.67	77.10 ¹
AGE	0.27	13.25 ¹
ANXIETY	-0.24	9.98 ¹
SELF PERFORMANCE TO OTHERS	0.17	4.83 ¹
YEAR IN PROGRAM	0.17	3.92 ¹
SEX	-0.14	
SELF PERFORMANCE TO USUAL	0.11	
MIDDLE CHILD	0.10	
MOOD	-0.09	
TIME FINISHED EXAM	-0.07	
AVOIDANCE	0.05	
AVERAGE GRADE IN PROGRAM	0.05	
OLDEST CHILD	-0.03	
LUCK	0.03	
IMPORTANCE OF COURSE	-0.03	
EXPECTED GRADE IN COURSE	0.03	
UNCERTAINTY	0.03	
CONTROL	-0.02	
TASK DIFFICULTY	0.01	
PREFERRED PERSON	-0.01	
ABILITY	0.00	
DISTRACTION	0.00	
YOUNGEST CHILD	0.00	
CANONICAL CORRELATION	0.4767	
EIGENVALUE	0.2941	

¹p < .05
(1,585 d.f.)

The interpretation of the discriminant function showed that affiliation at the post-exam phase was best predicted when one looked at the importance of accuracy of social comparison. The students were

asked how important it was for them to accurately know how well they had performed on their exams (1=not very important to 5=very important). Table 44 shows the group means for variables which had significantly loaded on the discriminant function. Students who had affiliated were neutral in their desire to know how well they had performed on their exams (mean accuracy = 2.9). Students who had not affiliated had not considered it to be important to accurately know how well they had performed on their exams (mean accuracy = 2.1).

The only other variable which loaded significantly on the function, .67, was whether the students had affiliated at the pre-exam phase (2=yes 1=no). This variable suggested that those who affiliated at the post-exam phase more often affiliated at the pre-exam (mean pre-exam affiliation = 1.8) than did those who had not affiliated after the exams (mean pre-exam affiliation = 1.4).

TABLE 44

Mean Scores for Variables used to Predict Affiliating

GROUP	MEAN SCORES	
	ACCURACY	PRE-EXAM AFFILIATION
AFFILIATED	2.9	1.8
DID NOT AFFILIATE	2.1	1.4
BOTH	2.5	1.6

After adjustment for all other variables, and keeping $p < .05$ for both variables, both variables were examined to determine if they had significantly separated those who had affiliated at the post-exam phase from those who had not. The F-ratios were 96.36, and 77.10 for accuracy, and pre-exam affiliation. These were both significant at $p < .05$ with 9 and 577 degrees of freedom.

Table 45 shows the results of the classification procedure. Seventy-one percent or 445 of 627 students were correctly classified in the final analysis of group membership. A disproportionate number of those who had not affiliated, 74.4%, in comparison to those who had affiliated, 67.0%, were correctly classified. Since the probability for students to not affiliate was higher than the probability for students to affiliate, these errors were to be expected. Also, with both groups having high amounts of dispersion about their group means one had to expect the occurrence of more errors than those which were found here.

TABLE 45

Classification Results for Affiliating at the Post-exam

	GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP	
			1	2
AFFILIATED	1	291	195 67.0%	96 33.0%
DID NOT AFFILIATE	2	336	86 25.6%	250 74.4%
MISSING		64		
TOTAL		691		

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 71.0%

3.6 CHANGES IN EXAM BEHAVIOURS, PERCEIVED CONTROL, AND ATTRIBUTIONS

The following section describes changes in students' behaviours, perceived control, and attributions from the immediate pre-exam phase to the post-exam phase. The post-exam variables were crosstabulated against the immediate pre-exam variables to examine how, and if, the relationships changed over time. The summary measures used to describe the relationship between variables were correlation coefficients (Spearman's rank order, denoted as r' , and Pearson's correlation, denoted as r).

3.6.1 Changes in Exam Behaviours

Students' affiliation, and rituals were earlier described as exam behaviours at each of the immediate pre-exam and post exam phases. The changes in students' affiliation are described below. The changes in students' rituals are not described because few students utilized rituals at the post-exam phase. A description of change, for rituals, can be summarized as the statement that one would expect those who used rituals at the immediate pre-exam phase not to use them at the post-exam phase.

Table 46 shows the crosstabulation of pre-exam affiliation by post-exam affiliation. Most students, 67.0%, repeated their behaviour from the pre-exam phase at the post-exam phase so that they either had affiliated or had not affiliated at both times. Where changes in behaviour occurred, 33.0% of the time, these cases more often were students who had not affiliated after the exams and had affiliated before the exams, 22.2%. The remaining cases were students who had

affiliated after the exams and had not affiliated before the exams, 10.8%. Overall, students' behaviours over time were moderately correlated with each other, Spearman's $r' = .36$, $p < .05$. This association provided evidence that students' behaviours changed over time.

TABLE 46

Changes in Affiliating From the Immediate Pre-exam to the Post-exam

		COUNT	POST-EXAM		ROW TOTAL
			YES	NO	
P R E E X A M		ROW PCT	1	2	
		COL PCT			
		TOT PCT			
YES	1	237	150	387	
		61.2	38.8	57.3	
		76.5	41.1		
NO	2	35.1	22.2	288	
		73	215	288	
		25.3	74.7	42.7	
		23.5	58.9		
		10.8	31.9		
COLUMN TOTAL		310	365	675	
		45.9	54.1	100.0	

Note: ROW PCT= ROW PERCENTAGE
 COL PCT= COLUMN PERCENTAGE
 TOT PCT= TOTAL PERCENTAGE

3.6.2 Changes in Perceived Control

The students were asked how much their effort made them feel that they were in control of the things that allowed them to perform well on the exams (5=totally in control to 1=totally out of control). Table 47 shows the crosstabulation of perceived control at the immediate pre-exam by perceived control at the post-exam. There was a moderate correlation between the pre-exam and post-exam scores for perceived control, Pearson's $r = .46$, $p < .05$. This suggested that students tended to have similar perceptions of control at each phase of the examinations. Still, changes in perceived control were evident. Since the students' perceptions of control over the examination environment was considered as varying somewhat over time, it was thought that the importance of perceived control over time was best described as a difference between the immediate pre-exam score and the post-exam score.

The post-exam score (Question 90) was subtracted from the immediate pre-exam score (Question 37) to yield scores from -4 to +4. A positive score meant a perceived gain of control, and a negative score meant a perceived loss of control. The difference scores will be further examined in the next section when an explanation for changes in students' behaviours is presented.

TABLE 47

Changes in Perceived Control

COUNT ROW PCT COL PCT TOT PCT	POST-EXAM					ROW TOTAL
	TOTALLY OUT OF CONTROL			TOTALLY IN CONTROL		
	1	2	3	4	5	
1 TOTALLY IN CONTROL			2 50.0 .8 3		2 50.0 3.3 .3	4 .6
2	3 6.0 30.0 .5	23 46.0 25.6 3.5	18 36.0 6.9 2.7	6 12.0 2.6 .9		50 7.6
3	4 1.6 40.0 .6	44 17.7 48.9 6.7	144 58.1 55.0 22.0	51 20.6 22.0 7.8	5 2.0 8.2 .8	248 37.9
4	1 .4 10.0 .2	23 8.2 25.6 3.5	86 30.5 32.8 13.1	149 52.8 64.2 22.7	23 8.2 37.7 3.5	282 43.1
5 TOTALLY IN CONTROL	2 2.8 20.0 .3		12 16.9 4.6 1.8	26 36.6 11.2 4.0	31 43.7 50.8 4.7	71 10.8
COLUMN TOTAL	61 9.3	232 35.4	262 40.0	90 13.7	10 1.5	655 100.0

P
R
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M

3.6.3 Changes in Students' Attributions

Students were asked to make attributions for responsibility of the importance of luck, task difficulty, ability, and mood to their performance on the exams at the immediate pre-exam phase and the post-exam phase. The following subsections describe changes in students' attributions to luck, task difficulty, ability and mood.

3.6.3.1 Luck

The students were asked how much they felt their luck was responsible for their performance on the exams (1=did not need luck to 5=needed luck). The distributions of students' attributions to luck (Table 48) were fairly stable over time so that most students did not attribute a great importance to luck at either the immediate pre-exam phase or at the post-exam phase. The correlation between luck at each time was very strong, Pearson's $r = .72$, $p < .05$. Thus, the attributional measures of luck at the immediate pre-exam and post-exam phases were considered as the same measures when gauging the importance of luck to students' behaviours.

3.6.3.2 Task Difficulty

The students were asked how difficult they perceived it was for them to finish the exam and get a good grade (1=very difficult to 5=very easy). The distributions of students' attributions to the difficulty of the task changed over time so that students attributed less importance to the difficulty of the task (Table 49) at the post-exam phase than at the immediate pre-exam phase but the correlation between times was moderately strong, Pearson's $r = .44$, $p < .05$, and significant. This

TABLE 48

Changes in Students' Attributions to Luck

COUNT		POST-EXAM					ROW TOTAL
		DID NOT NEED LUCK		NEEDED LUCK			
ROW PCT	COL PCT	1	2	3	4	5	
TOT PCT							
P R E E X A M	1	93	21	3	1		118
	DID NOT	78.8	17.8	2.5	.8		17.8
	NEED LUCK	72.7	11.2	1.6	.8		
		14.0	3.2	.5	.2		
	2	25	117	28	11	2	183
		13.7	63.9	15.3	6.0	1.1	27.6
		19.5	62.2	15.1	8.5	6.5	
		3.8	17.6	4.2	1.7	.3	
	3	5	37	105	38	6	191
		2.6	19.4	55.0	19.9	3.1	28.8
		3.9	19.7	56.5	29.2	19.4	
		.8	5.6	15.8	5.7	.9	
	4	2	11	44	67	7	131
		1.5	8.4	33.6	51.1	5.3	19.8
		1.6	5.9	23.7	51.5	22.6	
	.3	1.7	6.6	10.1	1.1		
5	3	2	6	13	16	40	
NEEDED LUCK	7.5	5.0	15.0	32.5	40.0	6.0	
	2.3	1.1	3.2	10.0	51.6		
	.5	.3	.9	2.0	2.4		
COLUMN TOTAL	128	188	186	130	31	663	
	19.3	28.4	28.1	19.6	4.7	100.0	

correlation suggested that the measures of task difficulty were moderately associated, but still change over time. This result makes sense as students may have exaggerated the difficulty of the exams to avoid a loss of poise before the exams. Students would be able to survive the ordeal of the exam in two ways: 1) if the students did poorly they would be able to attribute high importance to the difficulty of the task as being responsible for their performance on the exams, or 2) if the students did well they would be able to attribute either high or low importance to the difficulty of the task and still gain or maintain poise since their performance was successful.

To assess the importance of attributions to task difficulty over time it was felt that a difference score would better reflect the meaning students attributed for responsibility to the difficulty of the task. The difference in the pre-exam score (Question 18) from the post-exam score (Question 80) yielded possible values of -4 to +4. Positive scores would reflect an increased importance of task difficulty at the post-exam phase with negative scores reflecting the opposite. The difference score will be further examined when an explanation for changes in behaviour is presented.

3.6.3.3 Ability

Students' attributions to their level of ability were defined as whether the students felt that their level of ability would allow them to perform well on the exams (1=very unable to 5=very able). The attributions to level of ability (Table 50) moderately correlated, Pearson's $r = .40$, $p < .05$.

TABLE 49

Changes in Students' Attributions to Task Difficulty

		POST-EXAM						
COUNT	ROW PCT	COL PCT	VERY DIFFICULT				VERY EASY	ROW TOTAL
			1	2	3	4		
TOT PCT								
VERY DIFFICULT	1	14	17	12	3	2	48	
		29.2	35.4	25.0	6.3	4.2	7.1	
		30.4	7.7	5.4	1.9	6.9		
		2.1	2.5	1.8	.4	.3		
P R E E X A M	2	21	97	49	19	2	188	
		11.2	51.6	26.1	10.1	1.1	27.9	
		45.7	43.7	21.9	12.3	6.9		
		3.1	14.4	7.3	2.8	.3		
E X A M	3	7	84	123	67	5	286	
		2.4	29.4	43.0	23.4	1.7	42.4	
		15.2	37.8	54.9	43.5	17.2		
		1.0	12.4	18.2	9.9	.7		
V E R Y E A S Y	4	4	23	38	62	11	138	
		2.9	16.7	27.5	44.9	8.0	20.4	
		8.7	10.4	17.0	40.3	37.9		
		.6	3.4	5.6	9.2	1.6		
V E R Y E A S Y	5		1	2	3	9	15	
			6.7	13.3	20.0	60.0	2.2	
			.5	.9	1.9	31.0		
			.1	.3	.4	1.3		
COLUMN TOTAL		46	222	224	154	29	675	
		6.8	32.9	33.2	22.8	4.3	100.0	

TABLE 50

Changes in Students' Attributions to Ability

	COUNT ROW PCT COL PCT TOT PCT	POST-EXAM					ROW TOTAL
		VERY UNABLE				VERY ABLE	
		1	2	3	4	5	
P R E E X A M	1	1 16.7 5.0 .1		3 50.0 1.1 .4	2 33.3 .9 .3		6 .9
	2	3 6.3 15.0 .4	20 41.7 22.7 3.0	16 33.3 5.9 2.4	7 14.6 3.1 1.0	2 4.2 3.3 .3	48 7.2
	3	10 3.8 50.0 1.5	36 13.6 40.9 5.4	156 58.9 57.6 23.4	57 21.5 25.0 8.5	6 2.3 9.8 .9	265 39.7
	4	5 1.8 25.0 .7	30 10.7 34.1 4.5	83 29.6 30.6 12.4	140 50.0 61.4 21.0	22 7.9 36.1 3.3	280 41.9
	5	1 1.4 5.0 .1	2 2.9 2.3 .3	13 18.8 4.8 1.9	22 31.9 9.6 3.3	31 44.9 50.8 4.6	69 10.3
	COLUMN TOTAL	20 3.0	88 13.2	271 40.6	228 34.1	61 9.1	668 100.0

To assess the importance of students' attributions to their level of ability it was decided that a difference score was most appropriate because the attributions were only moderately correlated. This difference score was constructed in the same manner as the difference score for attributions to task difficulty. The difference in the pre-exam score (Question 11) from the post-exam score (Question 79) yielded possible values of -4 to +4. Positive scores meant a decrease in the importance of level of ability, and negative scores meant the opposite.

3.6.3.4 Mood

The final attributional variable was the importance of mood for the students' performances on the exams (1=not at all to 5=very much). Table 51 shows the distributions of attributions to mood with those of the immediate pre-exam crosstabulated against those of the post-exam. The correlation over time was very strong, Pearson's $r = .68$, $p < .05$. Changes in attributions to mood most often occurred where students had lessened the importance of mood at the post-exam from the immediate pre-exam. The lessened importance of mood was also evident in the post-exam mean score, 3.1, which was slightly more than the immediate pre-exam mean score, 2.8, which meant that attributions to mood were of lower importance at the post-exam phase. Nevertheless, with a very strong association between times for this variable, it was thought that for the explanation of changes in students' behaviours that the post-exam measure of the importance of mood was an equivalent measure to the immediate pre-exam measure of the importance of mood.

TABLE 51

Changes in Students' Attributions to Mood

	COUNT ROW PCT COL PCT TOT PCT	POST-EXAM					ROW TOTAL	
		NOT AT ALL	1	2	3	4		VERY MUCH 5
P R E E X A M	1	63	12	3	2	1	81	
	NOT AT ALL	77.8	14.8	3.7	2.5	1.2	12.3	
		57.3	6.7	1.9	1.2	2.2		
		9.5	1.8	.5	.3	.2		
	2	28	71	24	8	1	132	
		21.2	53.8	18.2	6.1	.8	20.0	
		25.5	39.7	15.2	4.8	2.2		
		4.2	10.8	3.6	1.2	.2		
	3	11	55	70	17	2	155	
		7.1	35.5	45.2	11.0	1.3	23.5	
		10.0	30.7	44.3	10.1	4.4		
		1.7	8.3	10.6	2.6	.3		
	4	4	39	50	111	10	214	
		1.9	18.2	23.4	51.9	4.7	32.4	
		3.6	21.8	31.6	66.1	22.2		
		.6	5.9	7.6	16.8	1.5		
	5	4	2	11	30	31	78	
	VERY MUCH	5.1	2.6	14.1	38.5	39.7	11.8	
		3.6	1.1	7.0	17.9	68.9		
		.6	.3	1.7	4.5	4.7		
COLUMN TOTAL	110	179	158	168	45	660		
	16.7	27.1	23.9	25.5	6.8	100.0		

3.7 AN EXPLANATION OF CHANGES IN STUDENTS' EXAM BEHAVIOURS

The following section examines the results of the testing of the hypotheses for this thesis to present the extent to which the control model was able to predict 1) changes in students' behaviours from the immediate pre-exam phase to the post-exam phase 2) the importance of accuracy, avoidance, and distraction as attitudes towards social affiliation, and 3) the students' actual and preferred types of affiliation. The predictions for changes in students' behaviours are explained using a theory of control.

3.7.1 Results for Hypothesis 1

Variability in stress-coping actions were earlier described as having only existed for affiliation at both the immediate pre-exam and post-exam phases. The following presents the results of the crosstabulation of immediate pre-exam affiliation by post-exam affiliation controlling for 1) students' perceived control, and 2) the importance of students' attributions to luck, task difficulty, ability, and mood. Spearman's rank order correlation coefficient was used to determine the statistical significance of changes over time in affiliation.

Before presenting the results, a few comments must be made on the necessity for the recoding of the control variables. The crosstabulation procedure produced tables (immediate pre-exam affiliation by post-exam affiliation) with many empty cells which disabled the possibility for testing of the significance of differences in cell sizes. To deal with this problem, the control variables were

recoded. Changes in perceived control (-4= total loss of control to +4=total gain of control) were recoded with the values of -4, -3, -2, -1 considered as being the value of -1=loss of perceived control, the value of 0 was left as 0=same level of perceived control, and the values 4, 3, 2, 1 were considered as being the value of 1=gain of perceived control. The attributional variables, whose changes in distributions were earlier described, were recoded using the same scheme when the importance of the attribution was computed as a difference score (i.e. task difficulty and ability). A slightly modified procedure was used for the attributional variables which had not changed over time (i.e. luck and mood) with the post-exam scores recoded as 1, 2 being equal to -1, 3 being 0, and 4, 5 being equal to 1. This procedure reduced the level of measurement from interval level to ordinal level for the controlling variables. Categories were now considered as being one of three types: 1) more, 2) same, and 3) less.

The following presentation elaborates upon the original relationship (Table 46) by introducing the control variables. The results will be presented in two sections: 1) selecting students with higher perceived control and crosstabulating the attributional variables, and 2) selecting students with lower perceived control and crosstabulating the attributional variables.

3.7.1.1 The Influence of Higher Perceived Control on Affiliating

When students' perceived control was higher the hypothesized changes in behaviour were for an increase in stress-coping actions. Specifically, more affiliation and rituals were predicted when the importance of

students attributions to 1) luck was lower, 2) task difficulty was lower, 3) ability was lower, and 4) mood was higher, Fewer behaviours were hypothesized when students' attributions were the opposite to those above. For the importance of attributions to luck, there was a low correlation between immediate pre-exam and post-exam affiliation when the importance of luck was high, ($r' = .23$, $p < .05$), and a nonsignificant correlation when the importance of luck was low ($r' = .34$, $p > .05$). Table 52 shows the changes in affiliation over time while controlling for luck. When luck was high, the types of changes in affiliation from the immediate pre-exam to the post-exam occurred as hypothesized with fewer students affiliating after the exams (17/6).⁷ Changes towards affiliation were hypothesized to occur when luck was low in importance, but the results in Table 52 show the same amount of changes to affiliating as to not affiliating at the post-exam phase (3/3). For the importance of attributions to mood, there was a low correlation between immediate pre-exam and post-exam affiliation when the importance of mood was lower ($r' = .29$, $p < .05$), and a nonsignificant correlation when the importance of mood was higher ($r' = .19$, $p > .05$). Table 53 shows the bivariate tables of affiliation controlling for mood. When the importance of mood was lower the changes were predominantly towards not affiliating (15/3). Where the importance of mood was higher the changes were of approximately equal numbers (8/7). This demonstrated that students who attributed more importance to mood were more likely to change towards affiliating. Table 54 presents the bivariate tables of affiliating controlling for the importance of task

⁷ The ratio of changes is denoted as post-exam nonaffiliators over post-exam affiliators.

TABLE 52

Changes in Affiliating Controlling for Luck

		COUNT	POST-EXAM		ROW
		PRE-EXAM	YES	1 NO	2 TOTAL
NEEDED (-1)	LUCK	YES 1	15	17	32 57.1
		NO 2	6	18	24 42.9
		COLUMN TOTAL	21 37.5	35 62.5	56 100.0
SAME (0)	LUCK	YES 1	10	4	14 48.3
		NO 2	4	14	15 51.7
		COLUMN TOTAL	14 48.3	15 51.7	29 100.0
HAD NOT NEEDED (+1)	LUCK	YES 1	4	3	7 35.0
		NO 2	3	10	13 65.0
		COLUMN TOTAL	7 35.0	13 65.0	20 100.0

TABLE 53

Changes in Affiliating Controlling for Importance of Mood

	COUNT	POST-EXAM		ROW TOTAL
		PRE-EXAM	YES 1	
LOWER MOOD (-1)	YES 1	9	15	24 50.0
	NO 2	3	21	24 50.0
	COLUMN TOTAL	12 37.5	36 62.5	48 100.0

	COUNT	POST-EXAM		ROW TOTAL
		PRE-EXAM	YES 1	
SAME MOOD (0)	YES 1	8	1	9 45.0
	NO 2	3	8	11 55.0
	COLUMN TOTAL	11 55.0	9 45.0	20 100.0

	COUNT	POST-EXAM		ROW TOTAL
		PRE-EXAM	YES 1	
HIGHER MOOD (+1)	YES 1	12	8	20 54.1
	NO 2	7	10	17 45.9
	COLUMN TOTAL	19 51.4	18 48.6	37 100.0

difficulty. Where task difficulty was higher in importance there was a high correlation between affiliating at the immediate pre-exam and affiliating at the post-exam ($r' = .55$, $p < .05$). Still, changes in affiliation occurred, (6/1), as hypothesized so that there was a reduction in affiliating at the post-exam. Where task difficulty was of less importance there was a nonsignificant correlation between affiliating at the immediate pre-exam and at the post-exam ($r' = .18$, $p > .05$). Here the changes in behaviours over time were approximately equal, (8/6). While this was not an increase in affiliating as was hypothesized to occur, this result was different than the original relationship in that the decrease in affiliating was not as large. Overall, the results moderately support the model of control because where the students attributed less importance to task difficulty there was a tendency for less of a reduction in affiliation. Table 55 shows the bivariate tables of affiliation over time controlling for the importance of ability. The correlation between post-exam affiliation and immediate pre-exam affiliation was moderately strong ($r' = .41$, $p < .05$) when students attributed higher importance to ability for their performance on the exams. The changes in behaviour (5/2) occurred as hypothesized with fewer students changing to affiliating after the exams. The correlation between affiliation at the post-exam and the immediate pre-exam was moderate ($r' = .35$, $p < .05$) when students attributed lower importance to their ability. Approximately equal numbers of changes to affiliating, and not affiliating occurred (4/5) instead of an increase in affiliation which was hypothesized for students who attributed less importance to their ability. Nevertheless, the changes in affiliation occurred in the hypothesized directions with

TABLE 54

Changes in Affiliating Controlling for Importance of Task Difficulty

	COUNT		POST-EXAM		ROW TOTAL
	PRE-EXAM		YES 1	NO 2	
LOWER	YES	1	10	8	18 52.8
T.D. (-1)	NO	2	6	10	16 47.1
	COLUMN TOTAL		16 47.1	18 52.9	34 100.0

	COUNT		POST-EXAM		ROW TOTAL
	PRE-EXAM		YES 1	NO 2	
SAME	YES	1	11	10	21 46.7
T.D. (0)	NO	2	6	18	24 53.3
	COLUMN TOTAL		17 55.0	28 45.0	45 100.0

	COUNT		POST-EXAM		ROW TOTAL
	PRE-EXAM		YES 1	NO 2	
HIGHER	YES	1	8	6	14 53.8
T.D. (+1)	NO	2	1	11	12 46.2
	COLUMN TOTAL		9 34.6	17 65.4	26 100.0

the ratio of changes for lower ability being different than the ratio for higher ability.

Overall, the direction of changes in affiliation provided some support for the model of control for when perceived control was higher. While decreases in behaviour occurred as predicted for each of the attributional variables, the increases in affiliation did not occur. Nevertheless, the elaboration of immediate pre-exam by post-exam affiliation controlling for the attributional variables demonstrated where increases in affiliation were predicted the resultant bivariate tables were different than the original bivariate table. In fact, for these tables, approximately equal numbers of the students who changed their behaviour from the immediate pre-exam to the post-exam phase affiliated as opposed to did not affiliate. This result demonstrated that there was a specification of the original bivariate table when higher perceived control and the attributional variables were introduced as control variables.

3.7.1.2 The Influence of Lower Perceived Control on Affiliating

The hypothesized relationship for changes in affiliation from the immediate pre-exam to the post-exam when students' perceived control was lower was for a decline in affiliation and rituals irrespective of the importance of students' attributions to the importance of luck, task difficulty, ability, and mood. A series of 2 X 2 tables to examine affiliation over time selecting only cases where perceived control was lower and controlling for the attributional variables were produced. These tables are not presented here because all of the tables were

TABLE 55

Changes in Affiliating Controlling for Importance of Ability

	COUNT PRE-EXAM	POST-EXAM		ROW TOTAL
		YES 1	NO 2	
HIGHER	YES 1	6	5	11
				45.8
ABILITY	NO 2	2	11	13
(-1)				54.2
	COLUMN	8	16	24
	TOTAL	33.3	66.7	100.0

	COUNT PRE-EXAM	POST-EXAM		ROW TOTAL
		YES 1	NO 2	
SAME	YES 1	14	15	29
				58.0
ABILITY	NO 2	5	16	21
(0)				42.0
	COLUMN	19	31	50
	TOTAL	38.0	62.0	100.0

	COUNT PRE-EXAM	POST-EXAM		ROW TOTAL
		YES 1	NO 2	
LOWER	YES 1	8	4	12
				42.9
ABILITY	NO 2	5	11	16
(+1)				57.1
	COLUMN	13	15	28
	TOTAL	46.4	53.6	100.0

essentially the same. In all but one instance the 2 X 2 tables were the same as the original bivariate table with a tendency for a reduction in affiliation at the post-exam phase. The table which was different had fewer cases. The results where fewer instances of changes toward affiliation occurred at the post-exam phase support Seligman's concept of deficits (Abramson, Garber & Seligman, 1980:4). Theoretically, since students were unable to coordinate their primary and secondary control to develop a perception of control over their environment one had to expect a retarded initiation of behavioural responses and the fewer instances of affiliation which were found here. Thus, the behavioural patterns of students whose perceived control was lower supported the predictions of the control model.

3.7.1.3 Conclusions for Hypothesis 1

Overall, some support was found for the hypothesis that changes in students' affiliation from the immediate pre-exam phase to the post-exam phase were influenced by students' level of perceived control and types of attributions. A specification of the original relationship between post-exam affiliation and immediate pre-exam affiliation was found. For higher perceived control there were changes in the 2 X 2 tables from the original relationship. When lower perceived control was held constant changes were not found. Where affiliation was predicted to have increased at the post-exam phase, it was at approximately the same level as for the immediate pre-exam phase. This result supports the theory of control, because the levels of affiliating/not affiliating were different where perceived control was predicted.

3.7.2 Results for Hypothesis 2

Students' perceived control was hypothesized to vary directly with the importance for students to accurately know how well they 1) would perform on the exams at the immediate pre-exam phase, and 2) had performed on the exams at the post-exam phase. The hypothesis was tested by crosstabulating the importance of accuracy against the students' level of perceived control at both the immediate pre-exam and post-exam phases.

3.7.2.1 Accuracy by Perceived Control at the immediate pre-exam Phase

Table 56 shows the results of the crosstabulation of the importance of accuracy by perceived control for the immediate pre-exam phase. The value of Chi-square (16) = 49.1, $p < .05$ demonstrates that there was a significant difference in cell sizes for the bivariate distribution. The strength of association between the variables was very weak, $r^2 = .026$, with only 2.6% of the variance accounted for between variables. The direction of the relationship was opposite to that which was predicted with Pearson's $r = -.16$, $p < .05$. Overall, it was found that there was a very weak but significant inverse relationship between the importance of accuracy and perceived control. Thus, the hypothesized relationship between accuracy and perceived control was rejected at the immediate pre-exam phase.

3.7.2.2 Accuracy by Perceived Control at the post-exam Phase

Table 57 shows the crosstabulation of the importance of accuracy by perceived control for the post-exam phase. The value of Chi-square (16) = 44.9, $p < .05$ demonstrates that there was a significant difference in

TABLE 56

Importance of Accuracy by Perceived Control (Pre-exam)

COUNT	ACCURACY					ROW TOTAL	
	NOT VERY IMPORTANT			VERY IMPORTANT			
	1	2	3	4	5		
TOTALLY OUT OF CONTROL	1	2	1		1	4 .6	
C O N T R O L	2	14	7	23	7	3	54 8.0
	3	64	66	82	35	9	256 38.1
	4	93	84	82	21	6	286 42.6
	TOTALLY IN CONTROL	5	39	11	10	9	3
COLUMN TOTAL		212	168	198	72	22	672
		31.5	25.0	29.5	10.7	3.3	100.0

the sizes of cells. The strength of association between variables was very weak with $r^2 = .029$. The direction of the relationship, like that for the immediate pre-exam, was again opposite to that which was predicted with Pearson's $r = -.17$, $p < .05$. This correlation demonstrated that there was a very weak but significant inverse relationship between the importance of accuracy and perceived control. Thus, the theoretical hypothesis for the relationship between perceived control and accuracy was rejected for the post-exam phase.

TABLE 57

Importance of Accuracy by Perceived Control (Post-exam)

COUNT		ACCURACY					ROW TOTAL
		NOT VERY IMPORTANT 1	2	3	4	VERY IMPORTANT 5	
TOTALLY OUT OF CONTROL	1	1	2	4	2	1	10 1.5
C O N T R O L	2	15	25	28	17	6	91 13.9
	3	55	72	87	39	10	263 40.1
	4	52	75	60	37	8	232 35.4
TOTALLY IN CONTROL	1	33	10	12	4	1	60 9.1
COLUMN TOTAL		156 23.8	184 28.0	191 29.1	99 15.1	26 4.0	656 100.0

3.7.2.3 Conclusions for Hypothesis 2

For both the immediate pre-exam and post-exam phases the hypothesized relationship between perceived control and the importance of accuracy was not confirmed. While weak and significant relationships existed, the direction was opposite to that which was predicted.

With the rejection of the hypothesis, the frequencies of individual cells within the bivariate tables were re-examined to try to determine why Albas and Albas (1984:83) may have stated that those who were most interested in accuracy "tended to be those who were most confident in

their performances". When the sample was restricted to examine only those who stated that accuracy was important or very important (Table 56: values 4 and 5), the results match the descriptions by Albas and Albas. At the immediate pre-exam phase, many more of these students, 39 (i.e. $9 + 3 + 21 + 6$), had higher perceived control than lower perceived control, 11 (i.e. $7 + 3 + 0 + 1$).

For the post-exam phase (Table 57: values 4 and 5), more students, 50, had higher perceived control than lower perceived control, 29. While this fits into the earlier statement by Albas and Albas, it demonstrates that the relationship between perceived control and high levels of importance of accuracy was not generalizable to the entire range of importance of accuracy for students. The same distributions of perceived control were found irrespective of the level of importance of accuracy. Evidently the variable which brought students to the threshold of higher importance of accuracy was not perceived control. A question for future research is why was it that few students had heightened orientations to accuracy? This could be pursued through the analysis of the deviant cases where students had heightened orientations to accuracy.

3.7.3 Results for Hypothesis 3

Students' perceived control was predicted to vary inversely with the importance for students to avoid thinking about their exams by talking about other things both before and after their exams. The hypothesis was tested by crosstabulating the importance of avoidance by students' level of perceived control.

3.7.3.1 Avoidance by Perceived Control at the immediate pre-exam Phase

Table 58 shows the results for the crosstabulation of the importance of avoidance by perceived control for the immediate pre-exam phase. There was no difference in the cell sizes for the bivariate distribution

COUNT	AVOIDANCE					ROW TOTAL	
	NOT VERY IMPORTANT			VERY IMPORTANT			
	1	2	3	4	5		
TOTALLY OUT OF CONTROL	1	2		1	1	4 .6	
C O N T R O L	2	18	17	11	6	2	54 8.0
	3	67	79	75	28	7	256 38.1
	4	87	95	69	27	8	286 42.6
	TOTALLY IN CONTROL	5	38	17	10	5	2
COLUMN TOTAL		212	208	166	67	19	672
		31.5	31.0	24.7	10.0	2.8	100.0

demonstrated by the value of Chi-square (16) = 24.5, $p > .05$. The strength of association between variables was $r^2 = .01$. Even though Pearson's $r = -.10$, $p < .05$ was significant, the relationship between variables was considered to be a negligible association. Based upon the

above results the hypothesized relationship between perceived control and avoidance was not confirmed for the immediate pre-exam phase.

3.7.3.2 Avoidance by Perceived Control at the post-exam Phase

Table 59 shows the results for the crosstabulation of the importance of avoidance by perceived control for the post-exam phase. There was a significant difference between cell sizes for the bivariate distribution as demonstrated by Chi-square (16) = 39.0, $p < .05$. The strength of association between variables was weak with only 2.6% of the variation accounted for between variables. The direction of the relationship occurred as predicted, Pearson's $r = .16$, $p < .05$, with avoidance inversely related to perceived control. The above results suggested that the hypothesis did not hold up at the post-exam phase.

3.7.3.3 Conclusions for Hypothesis 3

The results for the hypothesized relationship between perceived control and avoidance suggested that the hypothesis was not confirmed. Since the hypothesis was not confirmed, the bivariate table was re-examined to determine how it was that Albas and Albas came to link distraction to the maintenance of the students' poise.

When the bivariate distributions were reanalysed using only those students who had placed a higher importance on avoidance, the results showed that the distributions of perceived control were as hypothesized for the immediate pre-exam phase, but not for the post-exam phase. For the immediate pre-exam phase, when higher importance of avoidance was examined most students had higher perceived control, 42, and far fewer

TABLE 59

Importance of Avoidance by Perceived Control (Post-exam)

COUNT	AVOIDANCE					ROW TOTAL	
	NOT VERY IMPORTANT				VERY IMPORTANT		
	1	2	3	4	5		
TOTALLY OUT OF CONTROL	1	3	2	2	2	1	10
C O N T R O L	2	16	33	26	13	3	91
	3	67	96	68	25	9	265
	4	72	78	65	14	3	232
	5	32	9	13	3	2	59
TOTALLY IN CONTROL							9.0
COLUMN TOTAL		190	218	174	57	18	657
		28.9	33.2	26.5	8.7	2.7	100.0

who had lower perceived control, 9. For the post-exam phase, when higher importance of avoidance was examined there was almost no difference between those who had higher perceived control, 22, and those who had lower perceived control, 19. Overall, these results only supported the descriptions by Albas and Albas for the immediate pre-exam phase. Further analyses would have to be performed to determine which variables influenced the students' level of avoidance.

3.7.4 Results for Hypothesis 4

Students' perceived control was predicted to vary inversely with the importance for students to distract classmates from talking about the exams. The hypothesis was tested by crosstabulating the importance of distraction by perceived control at the immediate pre-exam and post-exam phases.

3.7.4.1 Distraction by Perceived Control at the immediate pre-exam Phase

Table 60 presents the results of the crosstabulation of distraction by perceived control for the immediate pre-exam phase. The value of Chi-square (16) = 32.9, $p < .05$ demonstrated that there was a significant difference in the cell sizes for the bivariate distribution. The strength of association between variables was almost zero with only 1.2% of the variation accounted for between variables. While Pearson's $r = -.11$, $p < .05$, occurred in the hypothesized direction, the relationship between variables was considered to be a negligible association. Thus, these results suggested the stated hypothesis was not confirmed for the immediate pre-exam phase.

3.7.4.2 Distraction by Perceived Control at the post-exam Phase

The results of the crosstabulation of distraction by perceived control at the post-exam phase are presented in Table 61. There was a significant difference in the cell sizes for the bivariate table shown by Chi-square (16) = 32.1, $p < .05$. The percentage of variance accounted for between variables was low at 2.6%. The correlation, Pearson's $r = .16$, $p < .05$, was weak but in the hypothesized direction.

TABLE 60

Importance of Distraction by Perceived Control (Pre-exam)

COUNT		DISTRACTION					ROW TOTAL	
		NOT VERY IMPORTANT 1	2	3	4	VERY IMPORTANT 5		
C O N T R O L	TOTALLY IN CONTROL	1	3		1		4 .6	
		2	24	15	9	5	1	54 8.0
		3	94	78	61	18	5	256 38.1
		4	128	84	53	14	7	286 42.6
	TOTALLY IN CONTROL	5	51	8	8	4	1	72 10.7
COLUMN TOTAL			300 44.6	185 27.5	132 19.6	41 6.1	14 2.1	672 100.0

Overall, these results suggested a rejection of the hypothesized relationship between perceived control and distraction for the post-exam phase.

3.7.4.3 Conclusions for Hypothesis 4

The hypothesized relationship between perceived control and distraction was not confirmed by the results for the immediate pre-exam phase, and for the post-exam phase. Again, similar to the results for Hypotheses 2 and 3, a re-examination of the data using only those students who stated

TABLE 61
Importance of Distraction by Perceived Control (Post-exam)

COUNT	DISTRACTION					ROW TOTAL	
	NOT VERY IMPORTANT			VERY IMPORTANT			
	1	2	3	4	5		
TOTALLY OUT OF CONTROL	1	4	1	4	1	10 1.5	
C O N T R O L	2	28	31	23	6	90 13.7	
	3	91	89	62	18	264 40.3	
	4	103	79	39	10	232 35.4	
TOTALLY IN CONTROL	5	38	9	8	3	59 9.0	
COLUMN TOTAL		264 40.3	209 31.9	136 20.8	38 5.8	8 1.2	655 100.0

that the importance of distraction was high or very high showed that the descriptions by Albas and Albas were matched when this restricted sample was considered. For the immediate pre-exam phase, 26 students had higher perceived control as opposed to only 6 students who had lower perceived control. For the post-exam phase, 15 students had higher control as opposed to only 9 students who had lower perceived control. Nevertheless, without prior reason to consider only those students who placed higher importance on distraction, the hypothesis was rejected. It remains to be seen why some students placed higher importance on

avoidance. While some of the characteristics of these students have been described, the variables which bring the level of importance of distraction to the threshold of high importance as yet have not been described.

3.7.5 Results for Hypothesis 5

The students' perceived control was predicted to have varied with the difference between the students' preferred type and actual type of affiliation. The hypothesis was tested, for both the immediate pre-exam and P.E phases, by crosstabulating the difference score, calculated as preferred type of affiliation (1=much lower grade to 5= much higher grade) minus actual type of affiliation (1=much lower to 5=much higher grade), by the difference between students' perceived control at the immediate pre-exam and post-exam phases.

3.7.5.1 Differences in Types of Affiliating by Perceived Control at the immediate pre-exam

The results of the crosstabulation of differences between preferred type of affiliation and actual type of affiliation by perceived control for the immediate pre-exam phase are shown in Table 62. It was possible to compute a difference score of preferred type minus actual type of affiliation for 92.9% of the students who had actually affiliated. The bivariate table was examined and it was determined that the differences in cell sizes were not significant with Chi-square (24) = .51, $p > .05$. This suggested that there was no relationship between students' perceived control and the difference between their preferred type and actual type of affiliation. Thus, the hypothesis did not hold up for the immediate pre-exam phase.

Table 62

Difference in Types of Affiliating by Perceived Control (Pre-exam)

COUNT		DIFFERENCE IN PREFERRED AND ACTUAL AFFILIATION									ROW TOTAL
		LOWER GRADE -4.00	-3.00	-2.00	-1.00	.00	1.00	2.00	3.00	HIGHER GRADE 4.00	
TOTALLY OUT OF CONTROL	1										0
C O N T R O L	2			2	4	9	5	4	1		25 6.8
	3	1		5	23	64	29	20	2		144 39.3
	4	1	2	2	15	62	38	26	6		152 41.5
TOTALLY IN CONTROL	5		1	1	6	13	13	8	2	1	45 12.3
COLUMN TOTAL		2 .5	3 .8	10 2.7	48 13.1	148 40.4	85 23.2	58 15.8	11 3.0	1 .3	366 100.0

3.7.5.2 Differences in Types of Affiliating by Perceived Control at the post-exam

Table 63 presents the results of the crosstabulation of differences between preferred type and actual type of affiliation by perceived control for the post-exam phase. There were few missing responses which allowed for the computation of difference scores for 99.4% of the students who had actually affiliated. There was a significant difference in cell sizes as shown by value of Chi-square (24) = 45.2, $p < .05$. The strength of association was very weak, $r^2 = .04$, with only 4% of the variance accounted for between variables. The direction of the relationship was as predicted with Pearson's $r = .20$, $p < .05$. A further examination of the bivariate table found that most of the students who had higher perceived control would have preferred to have interacted with classmates with higher grades than the classmates with whom they had actually affiliated. The students who had lower perceived control had affiliated with both students above and students below their preferred type of affiliation so that on average there was no difference in preferred and actual type of affiliation. Since the results were not as predicted for the students who had lower perceived control, this weakened the strength of the relationship between perceived control and the difference scores.

Overall, some support for the hypothesis was found, considered at the post-exam phase, as there was a very weak but significant inverse relationship between the students' perceived control and the difference score.

Table 63

Difference in Types of Affiliating by Perceived Control (Post-exam)

COUNT		DIFFERENCE IN PREFERRED AND ACTUAL AFFILIATION							ROW TOTAL
		LOWER GRADE -4.00	-2.00	-1.00	.00	1.00	2.00	HIGHER GRADE 3.00	
C O N T R O L	TOTALLY OUT OF CONTROL	1	1	1	1	2			5 1.6
	2	1	5	5	20	6	4	1	42 13.6
	3		6	21	68	18	9	1	123 39.8
	4		4	13	55	36	8		116 37.5
	TOTALLY IN IN CONTROL	5		2	5	11	5		23 7.4
COLUMN TOTAL		1 .3	16 5.2	42 13.6	149 48.2	73 23.6	26 8.4	2 .6	309 100.0

3.7.5.3 Conclusions for Hypothesis 5

The hypothesized relationship between students' perceived control and the difference between preferred type and actual type of affiliation was supported at only the post-exam phase. At the immediate pre-exam phase the students, irrespective of their level of perceived control, would have preferred to have affiliated with a classmate who had a slightly higher grade than the one with whom they had actually affiliated (mean difference = 0.4). Taking into consideration some of the earlier results for this thesis, a possible explanation for the above results might be that students preferences for affiliation may have been based more upon a desire for self-enhancement than upon a desire for an accurate social comparison at the immediate pre-exam phase, and more upon a desire for an accurate social comparison than self-enhancement at the post-exam phase.

Chapter IV

DISCUSSION

The results of this study have shown that the prevalence of students' behaviours changed over the specified time frame of immediate pre-exam phase to post-exam phase. The descriptive results supported the findings by Albas and Albas (1984), which were essentially based upon qualitative research methods, to provide a quantitative description of the social structural aspects of the students' examination environment.

4.1 DESCRIPTIVE ACCOUNTS

The Albas and Albas (1984) study of student life and exams was utilized to provide a theoretical framework for the analysis of students behaviours and the reasons students would give for their behaviours. This study found support for the framework within which Albas and Albas had 1) identified exam behaviours, and 2) reported the reasons for which students had used the behaviours. However, additional information was found to show that the prevalence of the behaviours and reasons for the behaviours were not as they reported. This study specifically examined two types of behaviours: 1) affiliation and 2) rituals. Next is a discussion of these behaviours.

4.1.1 Affiliating

While the prevalence of affiliation was slightly less than what Albas and Albas reported would occur, the results of this study demonstrated that affiliation was still a highly prevalent behaviour utilized by students at both the immediate pre-exam phase and post-exam phase. Perhaps part of the reason why this study found a lower prevalence of affiliation than Albas and Albas reported was the construct of affiliation was strictly defined as whether or not students talked with 'classmates' immediately before and after the exams, while Albas and Albas loosely defined affiliation as whether students talked with another 'person' before and after the exams. This definition of affiliation was utilized to determine the extent to which students would rely on each other for accurate social comparisons, and social support.

The presentation of the reasons that students gave for their choice to either have affiliated or not to have affiliated were reported as 1) open ended response categories, and 2) grouped responses using the categories used by Albas and Albas. The results of this study, for the immediate pre-exam phase, provided support for the work by Albas and Albas. However, the post-exam phase results were contrary to their descriptions of primary reasons for affiliation. Still, the variety of reasons students gave for affiliation and not affiliating supported the statements by Albas and Albas on the range of reasons for students' behaviours.

The explanations of the students in the opened questions illustrated that both affiliation and not affiliating may be considered

to be stress-coping actions. Note that at the initial stage of analysis the results were not grouped to allow for a description of the most prevalent individual types of reasons for the question. This type of analysis allowed for an examination of the discriminatory power of the framework Albas and Albas had presented. Their framework, if powerful, should be able to describe types of behaviours, reasons for behaviours, and reasons for changes in behaviours. If their breakdowns for types of responses gave results where most responses would not fit into the framework, a new framework would have been required.

The Albas and Albas framework included the following reasons for affiliation: social support, accuracy, self-enhancement, and distraction. The results of this study only support their reported reasons for the immediate pre-exam phase. The immediate question is what explains the drastic difference in the types of reasons at the post-exam phase from the types of reasons at the immediate pre-exam phase? The answer to this question was most evident when the percentages of self-enhancement and accuracy reasons were examined. Self-enhancement was a prevalent reason for affiliation at the immediate pre-exam phase (23.9%), but not at the post-exam phase (0.0%). The importance of need for accuracy in social comparison was much higher at the post-exam phase (57.9%) than at the immediate pre-exam phase (22.8%). An explanation of the relative shifts in reasons may be that in interaction, the students' need was not always simply to express their student role. The students' must interpret and cope with the examination environment which confronts them, be it the examination (a practical problem), a topic of conversation (during affiliation), or

both. At the immediate pre-exam phase the higher prevalence of self-enhancement reasons is interpreted as a situation where the oncoming 'examination phase proper' is less well defined. Consequently the direction of student conduct tends toward behaviours which would better adapt the student to an uncertain environment. The shift toward fewer self-enhancement reasons at the post-exam phase may be a consequence of the 'examination phase proper' having greater meaning for the students. They know what the examination questions were and they have an approximate idea of how well they had performed. The greater prevalence of the importance of accuracy as a reason for affiliation at the post-exam phase shows how students sought an accurate social comparison to produce an overall definition of the situation. The students may not have been trying to change themselves through self-enhancement, but may have been trying to fit the definition of the environment into an overall framework which would allow them to deal with differing levels of stress.

The grouped reasons for not affiliating, in comparison to reasons for affiliating, also show that self-enhancement was more salient for not affiliating at the immediate pre-exam phase (15.4%) than it was at the post-exam phase (0.0%). This demonstrated that it was not the behaviour of students which allowed them to cope with their exams, but it was the meaning of the behaviour that allowed them to cope. A second group of reasons changed with distraction being more prevalent as a reason at the post-exam phase (15.4%) than it was at the immediate pre-exam phase (2.4%). This shift may have reflected the students' utilization of distraction as a tool for survival in a tenuous environment. At the

immediate pre-exam phase, fewer students needed to utilize distraction because they still had the opportunity to gain last minute information, be lucky, find that the test was easier than they had expected, et cetera; but at the post-exam phase the students had to survive by disengaging themselves from a situation which did not allow them to fit into the environment.

Overall, for both those who had affiliated and those who had not affiliated the reasons for their behaviours usually could be interpreted. Nevertheless, some inconsistencies were evident as students gave reasons for not affiliating which seemed to better fit as explanations for affiliation. Inconsistencies were also evident for the opposite situation where students affiliated, but their reasons seemed to fit as explanations for not affiliating. To understand these responses, it is important to note that students retrospective reports are not the same thing as if they had to tell why they were about to behave. Retrospective reports are students reports of what they did and why they did what they did at a time which is after the event.

The uncertainties and risks in relation to [oneself] in such retrospective uses of self-ascriptions, in which only a part of [oneself] is actively involved, are clearly ones of quite a different kind to those in prospective uses, in which [one risks] the whole of [oneself]. To be wrong in ones's report is not to be the wrong person (Shotter, 1981:160).

While there were few inconsistencies in the reports, where the students' reasons would better explain an alternate behaviour, it was not possible to get them to 'tell' how they would behave immediately before and immediately after the exams since this type of research would have been too disruptive for the students. Students may have modified their responses to provide a response which was closer to a report for their

behaviour than to telling an account for their behaviour. Nevertheless, the descriptive results supported the results by Albas and Albas to provide a description of how prevalent and how it was that both affiliation and not affiliating could be examined as stress-coping behaviours.

4.1.2 Rituals

The results of this study supported the Albas and Albas study to show that a significant number of students used rituals before exams (33.6%), and that fewer students had used rituals after exams (6.5%). These results pose two questions. First, what is a ritual. Second, why is there a difference between the results for the immediate pre-exam phase and post-exam phase in the prevalence of rituals?

To see what was meant by a ritual one must look at the questions asked of students (Question 34 & Question 87) to see the students were asked to 1) state if they had used a ritual, and 2) to specify the type of ritual that they had used. The first part of the questions, where the word ritual was used, was defined by the investigator and thus was also given an ascribed meaning by the investigator. This was not a problem as the specification of the types of behaviours used by the students suggested that this designation as 'rituals' was an appropriate use of the word. The question was relatively unobtrusive for many more types were specified than were listed in the prompt of examples of rituals. While many students stated that they had used a self-prayer (a type within the prompt), the results of the specification of types also showed that students utilized a wide variety of types of rituals. The

above results provided support for the types of rituals described in Albas and Albas (1984:77-81).

An explanation for why there was a difference in the prevalence of rituals with more rituals at the immediate pre-exam phase and fewer rituals at the post-exam phase is more difficult to obtain. Albas and Albas have suggested one reason for the prevalence of rituals. This was earlier described as a situation where students would utilize rituals "... when they are alone and cannot rely on others for social support or comparison" (1984:77). The results of this study provided some support for the reports by Albas and Albas as the reasons which students gave for their use of rituals may be interpreted as stress-coping actions. However, there were many students who neither affiliated nor used a ritual.

Perhaps one should not be concerned with whether or not a behaviour occurred, but one should look at the overall 'meaning' of the situation for students (Harré & Secord, 1972). A breakdown of behaviours as rituals and affiliation, an artifact constructed by the investigator, is only important for the investigator if it is important to identify the prevalence of these particular behaviours. All behaviours could be considered together, and an overall definition of the situation could be analysed. An overall definition of meaning for the examination situation may be extrapolated from the meaning of affiliation behaviours to explain the shift in the prevalence of rituals. One would expect that rituals would be utilized at the immediate pre-exam phase as a mechanism for self-enhancement. This was evident in the reasons students gave for their use of rituals and supported the interpretations

by Albas and Albas. Rituals were not utilized at the post-exam phase because students were less concerned with self-enhancement, but were concerned with accuracy. Note that the dichotomy of affiliation and rituals is a construction of the investigator as affiliatory behaviour may be a social ritual. Using the reasons students gave for affiliation an inference may be made about the meaning of the environment. Fewer students may have utilized rituals at the post-exam phase because this type of behaviour was one that was directed towards the self and would not readily lend itself to an accurate overall definition of the examination environment. Overall, the utilization of the descriptive results provided support for the Albas and Albas study.

4.2 DISCRIMINANT FUNCTION ANALYSES

The results of the discriminant function analyses, to examine what best predicted the students use of affiliation and rituals, were essentially exploratory procedures. Interpretations of the results were a direct function of the types of variables entered into the prediction equation. Forthcoming is a discussion of how the results of this study fit into the literature on the university examination.

4.2.1 Affiliating

When all of the variables were considered together, the variables which best predicted students use of affiliation at the immediate pre-exam phase were 1) whether or not the students had talked in class, 2) the importance of accuracy, and 3) time of arrival outside the examination rooms. Similar variables were found for prediction of affiliation at the post-exam phase. These variables were 1) whether or not the

students had affiliated at the immediate pre-exam phase, and 2) the importance of affiliation. It is noted that while similar groupings of variables were found, the relative importance of each of the variables shifted from talking in class being the highest loading variable for the immediate pre-exam discriminant function to the importance of accuracy being the highest loading variable for the post-exam discriminant function.

The variables talking in class (immediate pre-exam discriminant function) and affiliation before the exams (post-exam discriminant function) may be interpreted as predispositional variables which showed which students would have talked with other students. The students who had talked in another situation were those who were predicted to affiliate. The relative importance of the predisposition to talking shifted from being the highest loading variable on the immediate pre-exam function to being the second highest loading variable on the post-exam function. An interpretation of this shift is that the students had affiliated at the immediate pre-exam phase because the 'emergence' of the situation (McHugh, 1968) was such that they constructed a definition of the situation based upon their memory of past events. At the post-exam phase the students were less influenced by their predispositions because they were more interested in their 'relative' positions in the class. Thus, the influence of predispositions would be expected to have been less at the post-exam phase than at the immediate pre-exam phase. The results of this study fit into the definitions of Stebbins (1986) as the predispositions were less important, but still significant, at the post-exam phase. The

predispositions of students were demonstrated to have influenced both the immediate pre-exam phase and the post-exam phase behaviours of students.

The shift in the importance of accuracy from second on the immediate pre-exam function to first on the post-exam function fits well into McHugh's theory of the definition of the situation and provides additional support for his concepts of emergence and relativity (1968). At the immediate pre-exam phase, an emergent situation, the importance of accuracy would be expected to be lower because the future role of the student during the exam phase proper is less well defined. At the post-exam phase, however, the importance of accuracy would be expected to be higher because the role of the student at the exam phase proper has been relatively defined by his/her performance on the exams. The results of this study support this interpretation.

Finally, with the variable of time of arrival outside the exam rooms having only loaded on the immediate pre-exam function and not having a direct counterpart on the post-exam function, all that can be said about the importance of time for students was that time was a factor for immediate pre-exam affiliation with the students who arrived earlier predicted to affiliate.

4.2.2 Rituals

A discriminant function analysis of what best predicted the prevalence of rituals was only performed for the immediate pre-exam phase because there were few rituals were reported for the post-exam phase. When all of the variables were considered together, the variables which best

predicted rituals were 1) the importance of mood, 2) the importance of avoidance, 3) age, and 4) the degree of uncertainty.

These variables support the theoretical framework developed by Albas and Albas (1984:77-79). Using this framework, we may expect that those who utilize rituals would place a greater importance on internal factors like a higher importance of mood, and a higher importance of avoidance relative to those who would not utilize rituals. The results provide support for this interpretation.

The differences between those who had used rituals and those who had not used rituals relative to the other two variables were less distinct, but still significant. Those who used rituals were slightly older students, many of which were also in their second and third year of a program. These students may have written more exams than their younger cohort. This result would be consistent with the literature as people who have 'incomplete socializations' (Albas & Albas, 1984:10) into a role may not perform the rituals associated with the role. Students who were younger may not as yet have been socialized into the student role and thus would have performed fewer rituals. With more time in university the younger students may learn the ritualist behaviours of the older students. The final variable, uncertainty, had small mean differences but may be interpreted as an internal factor for students. Students who were more uncertain of their performance on the exams may have used rituals to try to reduce this uncertainty.

4.2.3 The Utility of the Discriminant Function Analyses

The statistical procedure of the discriminant function analysis does not depend upon a specific theoretical framework to guide the selection of variables for the prediction of students' behaviour. The results of the discriminant function analyses for this study were interpretable within Symbolic Interactionism and Definition of the Situation theoretical frameworks. Using this analysis one also notices the exclusion of variables which may be of importance to the theoretical framework. Variables which may individually have explained a significant amount of the variability between groups were not necessarily the variables which were included as significant in the final prediction equation. Notably, anxiety, uncertainty, and perceived control which have been utilized by many studies to explain stress coping actions (e.g. Schachter, 1959; Albas & Albas, 1984; Baum & Valins, 1979) were not the best predictors of students behaviours. Where variables are identified as critical to the analysis they may be given added weight and forced into the discriminant function equation. The utility of the discriminant function analyses is that they have provided an additional guide with which to develop a theoretical framework for the analysis of the university examination as a social situation. The variable set utilized in the discriminant function analyses may be reduced, and reanalysed.

4.3 THE CONTROL MODEL

The results of this study illustrates that the model of control, a tool developed primarily in an experimental-clinical setting, was moderately successful in predicting the behaviours of students in the natural setting of the university examination. The contribution of the control model to the development of an overall definition of the university examination as a social setting is examined in the following discussion of each of the components of the model.

4.3.1 Perceived Control

The construct of perceived control was an overall measure of the students' perceptions of how well they were able to adapt to their environment through their own effort. It was assumed that the students' perceptions of the environment would have led them to develop a meaningful definition of the environment, using the exam act proper as the referent, and act according to this meaning. Thus, the meaning of control was both a product of a prospective perception of control at the immediate pre-exam phase, and a retrospective perception of control at the post-exam phase. The variability of responses to the question suggested that there were differing levels of control at each phase of the examinations both for individual students and between students.

It was theoretically possible for students to have behaved differently with the same overall level of perceived control. Differing perceptions could lead to the same end product of meaning, and high or low levels of perceived control. This leads to the question of how is it that a behaviour may be called a stress-coping action? This question may be examined in several ways.

Blumer assumes that meaning is a product of social interaction.

The human being is not a mere responding organism, only responding to the play of factors from his world or from himself; he is an acting organism who has to cope with and handle such factors and who, in so doing, has to forge and direct his line of action. As I have said earlier, he may do a poor job in constructing his act, but construct it he must (Blumer, 1969:55).

Students may have behaved as they did because they are not completely socialized into the student role and this disabled them from constructing the meaning of exam behaviours as a stress-coping action. The behaviour would be called a stress-coping action only when the investigator can verify that the student has not done a 'poor' job of constructing his act.

A similar type of explanation is given by Harré & Secord (1972:163) who wrote:

The happenings, for instance movements, are given meaning as actions by reference to the act attempted, whether or not it is actually successfully performed.

Students may have utilized the same behaviours, have had the same level of control, and yet still have had different levels of success on the examinations. The problem for this type of explanation is in the determination of how is it that one can state that the action was in reference to the act.

Specifically for this study, the construct of perceived control was elaborated upon by utilizing attributions to explain how the same level of perceived control could lead to different behaviours. The constructs of ability, task difficulty, luck, and mood, developments of attribution theory were utilized to predict and explain how students would act for each level of control at each phase of the examinations (i.e. Weiner,

Nierenberg & Goldstein, 1976; Abramson, Seligman & Teasdale, 1978; Rothbaum, Weisz & Snyder, 1982). It is at the micro level of the specification of meaning that it is possible to build a structural model to explain students behaviours as stress-coping actions.

4.3.2 Attributions

The results of this study found moderate support for the model of control when attributions were used as indicators of change in the meaning of the examination environment. Nevertheless, there are many problems associated with the use of attributions as evidence of changes in the meaning of the environment. The model of control was not able to provide a high rate of prediction for the changes in the behaviours of students.

Shotter (1980) described one of the main problems in the use of attributions as investigative problems due to the specificatory nature of mental activity.

Mental activity functions to structure a whole into a system of intrinsically interrelated or reciprocally implicated parts, each being known in terms of its relations to all the others in the system. The point about such a system of perceptually distinguishable but physically inseparable 'parts' (emphasis in original), is that the momentary 'parts' produced are always open to yet further differentiation and specification, but only in terms of what they already are; they are, we may say, further 'specifiable' (Shotter, 1980:43).

Not only do attributions change over time but they are subject to differing interpretations when examined as a product of the definition of the whole of the situation. A second problem in the use of attributions is that they may be a product of the investigator's biases. Students may act without making an attribution for responsibility to an

internal factor. The students who responded to the questions of this study may not have entirely understood what the attributional questions were referring to when they answered the questions.

4.3.3 The Utility of A Model of Control

It is possible to build a model of control to predict stress-coping actions of students. The results of this study demonstrated that the model had some predictive and explanatory utility. However, several questions remain to be answered. Why was it that the predictive power of the model of control was low? Was it that students did not make attributions, that is use a meaning framework similar to that set out by the investigator, when they were at the exams? Was it that the survey of student behaviour did not accurately measure the interactive behaviours of students? Suggestions for the linkage of a model of control into future research are given in the concluding remarks to follow.

4.4 CONCLUSIONS

The first objective of this study was to provide a descriptive quantitative study of the behaviour of students in an examination setting. To achieve this objective there were several quantitative aspects of the examination which were presented with the specific focus centered around the description of affiliation and rituals. It is hoped that the types of analyses performed to produce the results for this study will provide a useful source of information for other researchers and students. The information on how often and why students had affiliated may help the student reader to understand both his/her own

behaviour and that of his/her classmates. For the researcher interested in the university examination, it is hoped the information on student behaviour and on some of the problems associated with studying the behaviours will be of aid to the definition of future research problems.

The second objective of this study was to provide a test the control model as a tool for the explanation of how students deal with the examination, a situation in which they may be highly uncertain as to the outcome of their efforts, and thus facing high degrees of stress. Overall, the control model had limited success, but it is hoped the information gained will aid theoretical development on the source of stress and types of behaviours which are stress coping actions at the university examination. Perhaps, also, with a model for the explanation of stress coping behaviours in a natural setting, the future researcher might utilize the model from the present study to explain other stressful life events.

To conclude, it is hoped that this study has shown how the theoretical positions of Symbolic Interactionism and Definition of the Situation, within which researchers have traditionally utilized qualitative methods, may complement a theory of control, within which researchers have primarily utilized quantitative methods. None of the above theories alone were adequately able to account for the meaning of stressors, differing perceptions of the exam environment for students, and provide a basis for the prediction and explanation of the behaviour of students. Yet, together the theories and the respective methodologies traditionally associated with each, may provide an explanation of the university examination as a social event.

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Appendix A

STUDENT QUESTIONNAIRE

The following questions will be used as part of a study on University examinations. All questions refer to the MOST RECENT examination for this class. Your participation is voluntary.

Note that questions are on BOTH sides of the paper. Circle /fill in the response which applies to you for each question.

1. Date- _____
2. Class _____
3. What is your sex? M F
4. What is your age? _____
5. Are you registered as a:
 - a) full-time student
 - b) part-time student
 - c) other (specify) _____
6. In what faculty are you currently registered:
 - a) Arts
 - b) Science
 - c) Other (specify) _____
7. In what program are you currently registered: (circle) Example: Chemistry Major.
Honours/Major/General/Other
Specify department _____
8. What year are you in your program?
1 / 2 / 3 / 4 / other (specify) _____
9. How important is this course to your academic program? (circle number)
very unimportant
1 2 3 4 5
very important

19. Just before the exam, how anxious were you about it? (circle number)

not very anxious

very anxious

1

2

3

4

5

20. When did you arrive outside the exam room?
_____ (minutes before the exam).

21. Did you bring your books to the exam?

a) yes

b) no

22. Did you study immediately before the exam (last 1/2 hour)?

a) yes

b) no

23. Did you talk with classmates immediately before the exam?

a) yes

b) no (skip to question 26)

24. What did you talk the most about?

a) the exam

b) something else

25. This question refers to your assessment of the person with whom you talked the most. In comparison to my grade, their's would be:

Much lower

Much higher

1

2

3

4

5

26. Did you want to talk to anyone/anyone else before the exam, but did not?

a) Yes

b) No (skip to question 28)

27. What did you want to talk the most about?

a) the exam

b) something else

37. Before the exam, how much did you feel that through continued effort you would be in control of the things that would allow you to perform well?

totally in control totally out of control
 1 2 3 4 5

38. Before the exam, how much did you feel your mood would influence your performance on the exam?

not at all very much
 1 2 3 4 5

People think about different things during an examination. For each of the following types of thoughts, record the number (in the blank at the end of the question) that best describes your thoughts during your last examination for this class.

Example: 1. =never
 2. =once
 3. =a few times
 4. =often
 5. =very often

39. I thought about the grade I was going to get in the course. _____
40. I thought about how much time I had left. _____
41. I thought about how others were doing on the exam. _____
42. I wondered what the invigilator (person supervising the exam) thought about my performance on the exam. _____
43. I thought the exam questions were too difficult. _____
44. I thought about my level of ability. _____
45. I thought about how often I got confused. _____
46. I thought I needed luck to perform well on the exam. _____
47. I thought about things completely unrelated to the exam. _____
48. I thought the invigilator might suspect I was cheating. _____
49. I thought I should put more effort into my performance. _____
50. I thought my posture was too stiff _____

People do many different things at an examination. For the following questions, please write a brief description of what you did at the last exam for this class.

51. Did you bring special things to the exam? (ie. favorite pen, special jewelry, exam clothes, etc.)

a) yes

b) no (skip to question 54)

52. What did you bring?

53. Why?

54. Do you have any specific behaviours that you carry out in the last half-hour before exams that you feel helps you to do better? (go for a walk, pray, study, etc.)

a) yes

b) no (skip to question 57)

55. What did you do?

56. Why does this help?

57. Do you have any specific behaviours that you avoid before exams because you feel this helps you to do better?

a) yes

b) no (skip to question 60)

58. What did you avoid?

59. Why?

60. Were you distracted by anything during the examination?

a) yes

b) no (skip to question 63)

61. What distracted you?

62. Why?

63. What did you look at when you were not looking at your exam?

64. Why?

65. What did you do if you noticed the invigilator was watching you?

66. Why?

67. What would you do if another classmate could look at your exam paper?

68. Why?

69. What aspect of your posture did you change most often? (ie. hand, neck, leg position etc).

70. Why?

71. What time did you finish writing your examination?

Time in minutes _____ before the end of allotted time.

Exactly at the end. _____

Time in minutes _____ after the end of allotted time.

The following questions are about things you did AFTER the examination.

72. How anxious were you about the exam as you left the exam room?

not very anxious

very anxious

1

2

3

4

5

73. Where did you go immediately after you finished your exam? (The 1st half hour)
- a) to another class
 - b) to your home/residence
 - c) stayed outside the exam room
 - d) other (specify) _____
74. Did you talk with classmates immediately after the exam?
- a) yes
 - b) no (skip to question 77)
75. What did you talk the most about?
- a) the exam
 - b) something else
76. This question refers to your assessment of the person with whom you talked the most. A person whose grade, in comparison to my grade, was:
- | | | | | | |
|------------|---|---|---|---|-------------|
| Much lower | | | | | Much higher |
| 1 | 2 | 3 | 4 | 5 | |
77. Did you want to talk to anyone/anyone else after the exam, but did not?
- a) Yes
 - b) No (skip to question 79)
78. What did you want to talk the most about?
- a) the exam
 - b) something else
79. After the exam, how much did you feel your level of ability for this class allowed you to perform well on the exam?
- | | | | | | |
|-------------|---|---|---|---|-----------|
| Very unable | | | | | Very able |
| 1 | 2 | 3 | 4 | 5 | |

87. After the exam, did you act out any rituals? (i.e. self-prayer, go to church, make a sign of the cross, etc)

a) yes (specify what you did) _____

b) no (skip to question 36)

88. How important was this ritual for your coping with exam anxiety?

not very important very important
1 2 3 4 5

89. After the exam, how uncertain were you about how well you had performed on the exam?

Very uncertain Very certain
1 2 3 4 5

90. After the exam, how much did you feel that your efforts gave you control over the things you needed to perform well on the exam?

totally in control totally out of control
1 2 3 4 5

91. After the exam, how much did you feel your mood had influenced your performance on the exam?

not very much very much
1 2 3 4 5

92. How would you rate your personal performance on the exam, compared to your usual performance?

excellent poor
1 2 3 4 5

93. How would you rate your performance on the exam, in comparison to others in your class?

excellent poor
1 2 3 4 5

94. What grade do you expect to get in this course?

A+ A B+ B C+ C D F

The final questions ask about your family background.

95. How would you describe your ethnic identity (nationality background) ?

96. How much do you agree or disagree with this statement? My ethnic identity is important to me.

Strongly disagree

Strongly Agree

1

2

3

4

5

97. To what ethnic group did your father's side of the family belong?

98. To what ethnic group did your mother's side of the family belong?

99. What is your marital status? _____

100. Are you: (circle)
an only child/the oldest child/a middle child/the youngest

101. Is there anything else you would like to add about your experiences and thoughts on/of university examinations?

To return the questionnaire, please return it to class. If you have any questions about the study you may call on me in Room 336 Isbister.

Thank you for your participation,

David Forde

Appendix B

CLASSROOM INFORMATION

1. Course number _____

Please complete section "A" if you will allow David Forde to administer his questionnaire. Otherwise, please complete section "B".

Section A:

1. Classroom location _____
2. Number of Students in your class _____
3. Date of mid-term examination _____
4. Percentage weight of exam to course grade _____ %
5. Most convenient dates to administer the questionnaire
 - 1) _____
 - 2) _____
 - 3) _____

Section B:

Please check 1 or 2

1. I require more information before I will allow David Forde to administer his questionnaire in my classroom. _____
2. I will not allow David Forde to administer his his questionnaire in my classroom. _____

To return this form please mail it to David in the envelope which is provided.

Appendix C

EXAMINATION ROOM VARIABLES

1. Size of room (# of desks) _____
2. Type of lighting _____
3. Location of doors _____

4. Location of Windows _____

5. Type of desks _____