A Cross-Cultural Study on Achievement, Causal Attribution, and Adolescent Perception of Parent Behavior Among Euro-Canadian, Chinese-Canadian and Hong Kong Chinese Adolescents

by

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ABSTRACT

Rotter's (1975) locus of control, Crandall's (1963) perceived task-values x expectancy x discrepancy between lowest and highest standards set for achievement, and Atkinson's (1974) motive x incentive x probability of success have been frequently utilized to study adolescent achievement behavior. While these views explain adolescent achievement in the mainstream North American white population, they fail to explain that in ethnic minorities for not including the impact of their culture on achievement. This study identifies the role of culture and other related variables on achievement.

605 adolescents, 13 to 18 years of age, from three cultural groups -- Hong-Kong-Chinese (HKC), Chinese-Canadian (CC), and Euro-Canadian (EC) -- were studied. Questionnaires collected information on socialization, locus of control, causal attribution, perception of family-honor, and degree of future-certainty in adolescents. Copying two solvable and two unsolvable puzzles, each in 4 minutes, was utilized to assess achievement behavior. Data were subjected to three-way (ethnicity, gender, age) analysis of variance. An Omega Squared was calculated on each significant finding to ascertain the strength of association between the

independent and dependent variables. Significant ethnicity effects were followed up by the Scheffe post-hoc t-test to identify groups which significantly differed from each other.

The Chinese groups reported less parental acceptance and more psychological control than the EC group. Most adolescents had a bilocal locus of control. The Chinese groups attributed other-success to ability and the EC group to low task-difficulty. The Chinese groups attributed self and other failures to lack of effort and the EC group to high task-difficulty. CC perceived family-honor as of most importance, followed by EC, and lastly by HKC. HKC expected to have most social-political changes in their future, EC were intermediate, and CC expected least. HKC set highest minimal standard, level of aspiration, and expectancy in achievement tasks than the Canadian groups. Males and older adolescents showed higher achievement-oriented tendencies than females and younger adolescents, respectively.

This study shows that achievement behavior is a highly complex phenomenon and is governed by cultural values, societal expectations, socialization, and attribution styles. When adolescence is reached, achievement behavior is further governed by future social-political stability and job opportunities. Although these factors are important for adolescent achievement, it does not eliminate other factors which await future research.

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Chapter I

ACHIEVEMENT BEHAVIOR, ATTRIBUTION OF CAUSALITY, AND CULTURE

1.1 ACHIEVEMENT BEHAVIOR: THE THEORETICAL MODELS

Achievement behavior has been studied from various perspectives. As achievement behavior is partly determined by the nature of the achievement task (e.g. easy vs. hard) and the situation in which the behavior takes place (Smith, 1969), different achievement models have been developed to explain achievement behavior that occurs in different situations. In explaining task persistence and approach/avoidance tendency of an individual in a given achievement task, Rotter's (1966) locus of control, Crandall, Katkovsky, and Preston's (1960) value x expectancy, and Atkinson's (1964) motive x incentive x probability of success or failure models appear to be more relevant than other models such as Hill and Sarason's (1966) model on the impact of anxiety on achievement. A detailed examination of these achievement models and research findings that support or go against these models are presented below.

1.2 ROTTER'S LOCUS OF CONTROL MODEL

Extending from the social learning theory that behavior is a function of the value of the reinforcement that is offered in the situation and the expectancy that the behavior will lead to that reinforcement (Rotter, 1960), Rotter (1966) saw the generalized expectancy for the internal versus external locus of control of reinforcement as an important personality construct that would facilitate our understanding of human behavior and our prediction for the potentiality of a behavioral outcome of an individual. Individuals with a generalized expectancy that their behavior can effect reinforcement are categorized as internals; and those who believe that reinforcement outcomes occur independently of their behavior are categorized as externals. Because of differences in daily life experiences and socialization, individuals may vary from having an extreme internal control to having an extreme external control; and likely, human beings can be both an internal and an external depending on the nature of the situation. Unlike internals who believe that their ability and skill can determine the outcome of their behavior and are more concerned about their abilities, successes, failures, and those aspects of the environment that serve to provide useful information for their well-being, externals are likely to have a passive world view, exhibit passivity on tasks that require their ability, and attribute failures to bad luck or lack of control of the situation.

1.2.1 Empirical Works on Locus of Control and Achievement Behavior

Research reviews (e.g. Joe, 1971) and works on achievement behavior and locus of control suggest the following trends. First, within the North American white male population, comparisons between internal and externals find that externals persist in chance determined tasks, show signs of irresponsibility on their performance, and neglect to improve their performance after failure; and internals place high values on and persist in skill determined tasks, approach these tasks cautiously, and raise their expectations and aspirations in these tasks after each success (e.g. Midlarsky & McKnight, 1980; Lao, 1970). Second, females are more likely to have an external locus of control than males. Because of the differences in cultural pressures and socialization, studies on gender differences found that most females achieve and perform for the approval of others and for the reinforcements offered in their environments (e.g. Horner, 1968; Intons-Peterson and Johnson, 1980). Third, unlike most older children who adjust their standard of excellence to that of the external and challenge their capability in most achievement situations, younger children are likely to perform according to the external standard and fail to observe the difference between ability and effort and to relate them to success or failure in achievement (Veroff, 1969; Ruble & Rholes, 1981). Fourth, locus of con-

trol is culturally specific. Cultures which encourage independence and individuation (e.g. white-Americans) are likely to have internally oriented individuals; and cultures which value group goals and affiliation (e.g. Mexican Americans) are likely to have externally-oriented individuals (e.g. Scott & Phelan, 1969; Hsieh, Shybut, & Lotsof, 1969). Fifth, the development of locus of control is related to parent-child relationships. Parental nurturance, sanctioning, the granting of personal freedom, and the presence of consistent firm control are the elements for the development of internal locus of control. Rejection, deprivation of privileges, overprotection, and excessive use of punishment are the elements that foster a belief in external control in children (e.g. Katkovsky, Crandall, & Good, 1967; MacDonald, Jr. 1971). In sum, the findings of research have suggested a relationship between locus of control and achievement behavior; and in this relationship, gender, age, culture, and parent-child interactions play a crucial role in determining the development of locus of control in children.

1.2.2 Weaknesses of this Model

1.2.2.1 Studies from Cross-Cultural Research

While an abundance of empirical findings support the above five trends, results contradicting these are also found. For example, in comparing achievement behavior and locus of control between Euro-Canadian (a culture which fos-

ters independence and autonomy) and Chinese-Canadian (a culture which fosters family-goal conformity) adolescents, Mak (1983) failed to observe the difference in locus of control between these two groups regardless of the significant culture-and-achievement-behavior differences obtained between them. Based on her results, Mak (1983) commented that this model had overemphasized the role of expectancy (i.e. the belief that a behavior will lead to a specific reinforcement or outcome) and neglected a host of other variables (e.g. parental expectation on children achievement) that might be responsible for the elicitation of achievement behavior of other cultural groups. Similar to Mak's (1983) comment, Lefcourt (1976) pointed out that locus of control and achievement simply could not be seen in terms of a simplistic one to one relationship and that "until researchers who are concerned with achievement take into account the host of other variables associated with achievement..., there will not be a sufficient increase in comprehension in this area to justify their continuing efforts" (p.147). Among these variables, social, cultural, and parental factors may possess greater strength in accounting for achievement behavior than locus of control. To this end, Lefcourt (1976) emphasizes that locus of control can only be seen as "a circumscribed self-appraisal" (p.141) which human beings perform to assess their chances of gaining control over specified events and not as an omnibus trait like intelligence that

may be used to explain almost all aspects of human behavior. As "opportunities or restrictions present in given situations often obtain greater salience" than locus of control in determining the occurrences of certain behaviors (Lefcourt, 1976, p. 142), it is suggested that locus of control must be used along with other situational factors to explain the criteria under investigation.

1.2.2.2 Studies from Health Research and Lack of Correlational Studies on Locus of Control

Literature reviews on the predictive value of locus of control on people's attitudes and behaviors in health conditions (e.g. Lowery, 1981) and on weight control in obese people (e.g. Rodin, 1981) suggests that the use of a simplistic internal-external dichotomy has limited power in predicting human behavior. Summarizing the research on obesity, Rodin (1981) pointed out that obesity occurred in both internals and externals; and that like obese externals, internally-oriented obese people did not do much to control their weight for the well-being of their health. As obesity is found to be determined by many factors such as metabolic rates, size of fat cells and insulin levels, Rodin (1981) concludes that the mere use of locus of control to study obesity is inappropriate. Extending from this reasoning, the validity of the empirical findings that internally-oriented hospital patients seek more information about themselves to improve their health conditions (e.g. Seeman & Evans, 1962) becomes questionable. In support of this view,

Lowery (1981) indicates that health conditions of hospital patients can be divided into familiar and longstanding conditions. Unlike the familiar conditions in which the outcomes of the illnesses are predictable, the conditions of most longstanding illnesses are vague and ambiguous. Consequently, the degree of novelty and ambiguity of a health condition must first be considered if the relationship between locus of control and patient behavior is to be studied in an illness situation. However, such a procedure is rarely performed in the investigations on the effect of locus of control on patient's attitudes towards illnesses.

Observing the shortcomings of the locus-of-control construct and researches in understanding human behavior, Weiner, Nirenberg, and Goldstein (1976) express the view that the predictability of locus of control on expectancy shifts following success and failure in achievement situations is supported by experimentally-manipulated studies and not by correlational studies. Indeed, as Weiner et al. (1976) specified, the lack of published investigations on the correlational studies in locus of control and expectancy shifts "may be an indication of research failures" in the area (P.54). Reviewing those studies which did not obtain the behavioral patterns of the internals and the externals as predicted in the theory (e.g. Guring, Guring, Lao, & Beattie, 1969), Shaver (1975) indicates that locus of control may not exist as a unitary dimension. In support of this view, Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum

(1972) state that the attribution of causality results from an interaction between two dimensions; namely: (a) locus of control ; and (b) stability. In this interaction, the causes (i.e. ability, effort, luck, and task difficulty) for success and failure are derived. Ability (skill) is perceived as an internal and stable cause; effort, internal and unstable; luck, external and unstable; and task difficulty, external and stable. Examining locus of control in terms of these causal perceptions, Weiner et al. (1972) point out that "the locus of control and stability dimensions have frequently been confounded in past research" (p.96). Consequently, it becomes impossible to "examine independently the motivational consequences of ascriptions to these two dimensions of causality" (p.97).

In conclusion, limitations of locus of control as a predictor of human behavior have been noted and empirical findings in conflict with the postulations of the theory have also been found. Specifically, the construct lacks support from correlational studies in the area of achievement behavior and its internal-external dichotomy has been seen to be confounded with the stable-unstable factors such that the exact nature of perceived causality in an achievement situation is not clearly known.

(Note: A more detailed examination on Weiner et al.'s (1972) position on attribution theory is found on pages 51 to 55.)

1.3 CRANDALL, KATKOVSKY, AND PRESTON'S (1960) VALUES X EXPECTANCY MODEL

Seeing children as active processors of environmental information, Crandall et al. (1960) postulate that achievement behavior develops as early as one's infancy when the formation of cognitive structures begins. At the infancy stage, the caretaker's childrearing behavior (i.e. responding contingently or non-contingently to the infant's needs) is believed to have a strong impact on the child's perception of the causal relationship between behavior and reinforcement outcomes. Contingent behavior-reinforcement relationships may give rise to the development of an internal locus of control; and non-contingent, to an external control. According to Crandall et al. (1960), high achievers are generally more internally-oriented than low achievers. Although locus of control is seen as the basis of achievement behavior, Crandall (1967) indicates that the performance of an achievement task is also determined by other factors, which include: (1) the discrepancy between minimal standard (the lowest goal in the continuum of potential reinforcements which will derive satisfaction) and expectancy (the probability that achievement efforts will lead to goal attainment); (2) attainment value (this can exist in a relative form when the importance of a given task is perceived in relationship to other tasks or in an absolute form when an individual perceives the task with absolute importance without considering other tasks); and (3) value for

others' evaluation (the perceived importance of receiving social reinforcement in an achievement task). All these factors come into play in an achievement situation. Since these factors are learned, it is postulated that achievement behavior for a skilled area of achievement is an automatic behavior that has developed over time. Conversely, achievement behavior for an unfamiliar task requires careful calculations that involve a two-step process. An ipsative comparison between expectancy and minimal standard is to be performed in the first step; and a multiplication between attainment value and the discrepancy of the minimal standard and expectancy in the second. In examining the motivational determinants of task persistence, Battle (1965) points out that the degree of consonance between minimal standard and expectancy has an important impact on task persistence and goal certainty. Achievement strivings and positive feelings will be attained if minimal standard is set slightly below expectancy; and frustrations and negative feelings will be the result if minimal standard is set above expectancy. These feelings, along with the attainment value set for the achievement task, will determine the strength of achievement behavior. Strong achievement approaches will result if both positive feelings and attainment value are high; strong avoidance if both negative feelings and attainment value are high; and an absence of both approach and avoidance tendencies if the attainment value is low or absent. The meaningfulness of a task is further determined by the individual's

locus of control. Because internally-oriented individuals believe that reinforcements are within their control, their approach tendencies are believed to be stronger than those with an external orientation (Crandall, 1967). Consequently, it is also postulated that individuals who demonstrated a strong need of social reinforcements (as opposed to those who favor reinforcements that are generated from within themselves) will have a weak approach tendency. In sum, the essential aspect of this model lies not only on the achievement factors (i.e. locus of control, minimal standard, attainment value, expectancy, and value for others' evaluation), but also on how these factors interact to generate approach and avoidance tendencies in an achievement situation.

1.3.1 Empirical Works on Crandall et al's Model

Research following this model has generally supported its postulates and yielded the following characteristics. First, task persistence is a result of the ipsative discrepancy between expectancy and minimal standard. Studies manipulating expectancy and minimal standards, showed that task persistence increased if minimal standard was set below expectancy and decreased if set above (e.g. Battle, 1965; Crandall & McGhee, 1968). Second, people constantly adjust their expectancy estimates in terms of the result in their immediate past performance. A good performance leads to a

higher expectancy in the subsequent task; and a poor performance, to a lower expectancy (e.g. Midlarsky & McKnight, 1980). Third, attainment value plays a significant role in task persistence and task selection in choice situations. Most studies found that low achievement scores were a result of low attainment values (e.g. Parsons, 1982; Mak, 1983). Fourth, developmental studies showed that expectancy was determined not only by one's previous experiences with failure and success but also by the cultural demands on achievement. Because of the gender difference in achievement demands and socialization, males tended to have higher expectancies than females even when their past performance was similar to that of the females (e.g. Stein & Bailey, 1973; Parsons, 1982). In sum, the research has suggested expectancy, minimal standard, attainment values, socialization, and cultural demands on achievement as important determinants of achievement behavior.

1.3.2 Weaknesses of this Model

Although this model has been supported by various studies, considerable empirical findings have found that other environmental determinants (e.g. probability of success) in an achievement situation do play a significant role in achievement behavior. For example, by asking high school students to pick out a maximum of 25 words from a word sleuth in a five-minute period, Mak (1983) found probability

and attractiveness of success in an achievement situation to be as important as expectancy, minimal standard, and attainment value in achievement behavior. In addition, task difficulty, repulsiveness of failure, and the motive to achieve success or avoid failure are also found to be crucial elements for achievement (e.g. Feather, 1967).

In presenting a comprehensive review on achievement behavior, Heckhausen (1967) indicates that this model views achievement behavior strictly from an achievement situation viewpoint. According to Heckhausen (1967), achievement behavior occurs not only under arousal conditions but also under neutral conditions where achievement demands are not present. To this end, Heckhausen (1967) specifies that the effect of some institutionalized sociocultural person-environmental relationships, such as the concept of role expectation, may provide a better explanation of achievement behavior than the specific concept of the demand characteristics of an achievement situation. Additional to Heckhausen's (1967) view, and observing the fact that this model conceives attainment value to be singularly important in achievement behavior, Parson and Goff (1980) state that an individual's long range life goals and the utility value (not the attainment value) of a given task in aiding the achievement of the life goals may account for the achievement behavior of an individual in a given achievement task. Consequently, this model's view that perceived attainment

value of an achievement task is a major element in motivating an individual to achieve is seen as a major argument against the model.

1.4 ATKINSON (1974) MOTIVE X INCENTIVE X PROBABILITY OF SUCCESS/FAILURE MODEL

Agreeing that a response tendency is a result of the anticipated consequence of the response (e.g. Lewin, 1938; Tolman, 1932), Atkinson (1974) observes achievement behavior as a multiplicative function of motive, expectancy that the response will lead to the anticipated outcome, and the incentive value offered in the achievement situation. In Atkinson's (1974) view, achievement motives are stable personality dispositions which can broadly be divided into 2 classes; namely: the motive to approach success (Ms) and the motive to avoid failure (Maf). Using Murray's (1938) Thematic Apperception Test (TAT) to assess the motive to achieve and Mandler and Sarason's (1952) Test Anxiety Questionnaire (TAQ) to assess the motive to avoid failure, Atkinson (1974) believes that "all persons have some capacity for interest in achievement and some capacity for anxiety about failure" (p.18); and that the summation of these motives yields the resultant tendency in an achievement situation. Persistence and approach tendencies in an achievement task occur when the motive to achieve is dominant (i.e. strong Ms along with a weak or an absence of Maf). Conversely, avoiding or leaving an achievement task occurs when the motive to avoid

failure is strong. However, while individuals with a fear of failure orientation may avoid most achievement tasks, Atkinson (1974) warns that "except in rare cases, there are always a number of different 'extrinsic' components in the positive tendency...that are viewed, by an observer, as achievement-oriented activities" (p. 19). Consequently, "transient situational influences" (Feather, 1961, p.552) become crucial elements in an achievement situation. In Atkinson's (1974) view, expectancy (i.e. probability of success or failure) and incentive values (i.e. attractiveness of success or repulsiveness of failure) in an achievement situation are the extrinsic factors that may change an avoidance or inhibitory tendency to an approach or excitatory tendency. Conceptualizing success (Ps) and failure (Pf) in terms of their subjective probabilities that may range from zero (the lowest) to one (the highest), Atkinson (1974) assumes expectancy as the sum of these probabilities (i.e. Ps+Pf) and incentive values as the inverse of the subjective probability of success (i.e. I=1-Ps). Within a multiplicative framework, these extrinsic components interacting with the achievement motives (i.e. Ms and Maf) are believed to yield the following characteristics. First, an individual with a strong motive to approach success (i.e. Maf=0) is most attracted to tasks of intermediate difficulty where the subjective probability of success is .50 and where the person must challenge the capabilities to maximize the likelihood of success. Second, an individual with a strong avoid-

ance motivation (i.e. Ms=0) would find all achievement tasks unattractive, particularly those of intermediate difficulty. When given a choice, the person would choose either the easiest task (i.e. Ps=1), where success is guaranteed or the hardest (i.e. Ps=0), where failures can be blamed on the nature of the task. In sum, unlike fear-of-failure individuals, those who set out to avoid competitions and to look for environmental cues to externalize their failure, achievement-oriented individuals seek or utilize achievement opportunities to try their abilities. In Atkinson's (1974) view, the approach tendency of the achievement-oriented individuals have considerable effects on the subsequent development in their achievement behavior. Since incentive value and expectancy are assumed to be inversely related, successful completion of a task leads to an increase in the probability of success and a decrease in the incentive value associated with the task. When this occurs, the desire to achieve the old task diminishes and an interest to perform an objectively more difficult task occurs. Conversely, failures lead to a decrease in the probability of success and an increase in the incentive value. With these changes, the individual would move to other tasks in which the likelihood of success is perceived as higher and the completion of the tasks is seen as rewarding.

1.4.1 Empirical Research on Atkinson's Model

Research has generally supported the postulations of this model and showed the following characteristics. First, in situations where tasks of various difficulty levels are presented, people generally shift to a more difficult task after each success (e.g. Kuhl & Blankenship, 1979a). Second, failure-oriented individuals are likely to avoid intermediately difficult task and show ambivalence between the easiest and the most difficult tasks in initial trials. The tendency that they choose either the easiest or the hardest task becomes clear in subsequent trials (e.g. Kuhl & Blankenship, 1979b). Third, although both males and females move to more difficult tasks after success, males tend to choose tasks that are substantially more difficult than on which they succeeded and females choose only those which are slightly more difficult (e.g. Cooper, 1983). Such a gender difference in risk preference in achievement situations can be accounted for by the differences in socialization and cultural demands between males and females (Horner, 1972). This explanation is supported by the high anxiety scores of females in evaluative settings (e.g. Hill, 1971; Kuhl & Blankenship, 1979b) and the fact that their performance is most affected (e.g. inconsistency in performance between tasks) in sex-linked tasks and in situations where the standard of excellence is unclear or where norm-referenced social comparisons are made (e.g. Lenney, 1977). Fourth, motivation and situational factors (i.e. probability of

success and incentive values) are important determinants for task persistence and levels of aspiration in achievement situations. Presenting insoluble figure-tracing tasks to undergraduate students and instructing them to compete against the false norm associated with each task in a time limit of 40 seconds, Feather (1961) found that achievement-oriented subjects persisted on tasks in which they believed that they could succeed and failure-oriented subjects persisted on those that were defined as difficult or where a probability of success equaled zero. These results were supported by the findings of a later study (Feather, 1967) in which undergraduate students were told to raise a cradle that was controlled by the experimenter and not to move the ball that was resting on it. In this study, Feather (1967) found that unlike failure-oriented subjects who showed inconsistent shifts in the performance and levels of aspiration, achievement-oriented subjects persisted in their tasks, raised their aspirations after success and lowered them after failures, and made small shifts rather than unreasonable jumps in the adjustment of their aspiration levels. In sum, approach and avoidance tendencies in an achievement situation are results of the interaction between one's disposition to achieve and the perceived probability and attractiveness of success of the situation; and within this interaction, the perceived probability and attractiveness of success are largely determined by one's orientation

to achieve. That is, achievement-oriented individuals see achievement situations as opportunities that allow them to challenge their abilities while failure-oriented individuals see achievement situations as threats that bring them shame and humiliation. When forced to perform, failure-oriented individuals will work as hard as they can to attain success. To them, it is the press rather than the need to achieve that motivate them to perform (Birney, Burdick, & Teevan, 1969).

1.4.2 Weaknesses of Atkinson's Model

Although this model has received empirical support from many studies, it does contain some shortcomings. In response to the postulation of this model that risk preference in an achievement situation is partly a function of the relative strengths of approach and avoidance tendencies, Maehr (1974b) argues that such a conception of achievement behavior has overlooked the influence of culture. Since this model uses the TAT and the TAQ[1] to assess the tendency to approach success and the tendency to avoid failure, this model ignores these tendencies across cultures. Taking reading as an example and pointing out that children in a professor's family may place a higher value on reading than other tasks, Maehr (1974b) indicates that the approach ten-

[1] These assessment techniques may be culturally biased and cannot accurately assess these tendencies in some cultures.

dency of a task is heavily dependent on the culture in which the individual is brought up. To this end, Maehr (1974b) emphasizes that "there is a necessity to attempt to scale tasks in terms of some sort of cultural dimension" (p.892) and to examine the extent by which a given task may serve as an appropriate antecedent to a desired consequent.

Similar to Maehr's view, Heckhausen (1967) also agrees that achievement-related dispositions are frequently embedded in the value systems within which an individual is expected to function; and these systems in turn determine the achievement tendency of the individual. In Heckhausen's (1967) view, "goals involving task performance, self-esteem, and social recognition appear side by side (p.36)" in an achievement situation. Thus, in some cases, achievement behavior becomes an instrument by which members of a group may be used to obtain acceptance and approval from one another. Consequently, many achievement goals can only be understood by means of an analysis of the social process or the value system to which an individual belongs.

Examining the postulations of this model, Weiner (1970) argues that the model "contains conceptual difficulties" (p. 73) and that "the model, like other contemporary theories of motivation, is stimulus-bound" (p.73). In Weiner's (1970) view, achievement behavior is goal-seeking purposive behavior that persists even without any instigating, external

stimulus. With this view, Weiner (1970) concludes that Atkinson's postulations that achievement behavior occurs only in the presence of an achieving activity is a weakness of the model. Indeed, this weakness was observed by Atkinson during the earlier years when the model was initially formulated. Reviews of some of the conceptions of achievement and decision-making performances have shown the stimulus-bound characteristics of responses obtained. In these conceptualizations, human beings are perceived as reactive organisms. Atkinson and Cartwright (1964) commented that the activity already in progress was a potent determinant of the performance of any subsequent response. As such, they added the strength of an on-going achievement activity as a variable to the initially formulated achievement model. In other words, they developed a model which sees achievement behavior as a multiplicative function of motive, expectancy, and incentive value. According to Atkinson and Cartwright (1964), all on-going achievement activities must be understood in terms of the language of Newtonian physics and be seen as "inertial tendencies" that would not cease to persist until the achievement goals are attained. However, the inertial tendencies of on-going activities received weak empirical support and were finally abandoned by Atkinson in the subsequent development of his model. Using false norms and controlling the probability of success and failure in all achievement tasks such that repeated failures and successes were experienced by all subjects, Weiner (1965b)

found that the inertial approach model could only account for the achievement tendency of the achievement-oriented subjects when repeated failures occurred but not for those of the failure-oriented subjects. To improve the inertial model and to incorporate it into Atkinson's model, Weiner (1970) proposes that the inertial tendency should be "conceptualized as a resultant tendency consisting of both approach and avoidance components" (p.79); and that these components differ in strength between achievement-oriented and failure-oriented individuals. Unlike failure-oriented individuals who have a strong avoidance component which inhibits them from performing after failures but not after success, achievement-oriented individuals have a strong approach component which persists and instigates them to perform after failures. Consequently, it is Weiner's (1970) postulation that achievement-oriented individuals perform better after failure than after success, and failure-oriented individuals perform better after success than after failure.

In conclusion, the view of Atkinson that achievement behavior is a function of expectancy, motives, and incentive values has been criticized as too narrow. It is too stimulus-bound and does not include the effects of culture and value systems in both the approach and avoidance tendencies in achievement. Although Atkinson and Cartwright (1964) added inertial tendency to the original formulation, such an

addition could only account for the achievement behavior of those with high resultant achievement motivation in conditions where repeated failures were experienced. In view of this shortcoming of the inertial approach, Weiner (1970) postulated that the inertial tendency should be seen as a resultant tendency consisting of avoidance and approach components. Although Weiner's (1970) position received support from some empirical studies, these studies were restricted to laboratory settings that were conducted in North America. Consequently, further investigations and testings are still needed to confirm Weiner's position.

1.5 CONCLUSION ON THE ACHIEVEMENT MODELS AND MAEHR'S VIEW ON THE ULTIMATE GOAL OF THE SEARCH IN THE STUDY OF ACHIEVEMENT

Examining achievement behavior from different theoretical viewpoints, the three achievement models agree that there exists a relationship between cognition and achievement behavior and that the orientation to achieve emerges only when considerable cognitive maturity has taken place whereupon the child can observe the relationship between his/her own behavior and outcome and experience the feelings associated with successes and failures. These models view that older children will be more achievement-oriented than younger children as a result of their cognitive maturity. Furthermore, as cognitive development and socialization are different for male and female children, these models also

view that there exist gender differences in achievement behavior. Among these models, the locus of control model posits achievement behavior as a function of one's perception of the degree of controllability one has in an achievement situation and argues that internally-oriented individuals are more achievement oriented than the externals due to their beliefs that they have control over the outcome of their behavior. The Crandall et al. model observes achievement behavior in terms of two cognitive steps involving an ipsative comparison between expectancy and minimal standard in the first step and a multiplication between the comparison and the attainment value of the task in the second step. The attainment value is seen as a crucial element which determines the approach and the avoidance tendencies of achievement behavior. Finally, the Atkinson model sees achievement behavior as a result of the interaction between the motive to achieve, expectancy, and incentive value of the task. According to this model, achievement-oriented individuals choose intermediate level of difficult tasks in which there exist a fifty percent chance of succeeding in the tasks and in which the individuals must maximally challenge their abilities to attain success. On the other hand, failure-oriented individuals choose either the easiest tasks in which success is guaranteed or the most difficult tasks by which they can blame their failures on the difficulty of the tasks. Consequently, age, gender, socialization, cognitive maturity, locus of control, minimal standard, expectan-

cy, attainment value, the motive to achieve or to avoid failure, and incentive value of the task are all seen as crucial determinants of achievement behavior.

While these three models receive support from most empirical studies, they are also found to have some weaknesses. A major weakness of these models is their inability to observe the orientation to achieve within the limited context of the majority group of the North American culture and do not include elements that may explain achievement behavior of other cultures (Maehr's 1974b). The Crandall model places heavy emphasis on the attainment value of an achievement task and assumes attainment value is the final determinant of achievement behavior. By taking such a view, this model analyzes achievement behavior as a situationally-determined phenomenon. It does not acknowledge the possibility that other factors (e.g. the utility values of a task) may account for achievement behavior and that achievement behavior may also occur in neutral situations as observed in some cultures. Similar to the weaknesses of the Crandall model, the Atkinson model also does not include the impact of culture and value system on the development of one's approach and avoidance tendencies in achievement. Although the Atkinson model attempts to explain achievement behavior in terms of a personality-situation interactional approach, it does so in terms of a very limited cultural context (i.e. the majority group of the North American culture). Finally, like

the Crandall and the Atkinson models, the locus of control model can only explain achievement behavior of those populations in which independence and individuality are fostered. To strengthen the explanatory power of this model, it has been suggested that locus of control must be used along with a host of other variables (such as social, cultural, and parental factors) to thoroughly explain achievement behavior. Indeed, to improve the locus of control model and to enable it to explain achievement behavior more effectively, Weiner & Kukla (1970) put forth an attributional analysis approach to achievement. (A detailed examination of attribution theory and the attributional approach to achievement will be presented in the following section).

Based on the weaknesses of these models and examining achievement behaviors across cultures, Maehr and Nicholls (1980) point out that all these models are inadequate in explaining achievement behavior. In their view, observing achievement behavior purely as a personality trait or a situationally-determined phenomenon "certainty would not do justice to achievement motivation in the case of Japanese" and "it probably prevents a full understanding of the nature of achievement behavior in the case of other groups, which stress co-operative behavior" (p.224). Furthermore, although the personality-situational approach of the Atkinson model could "provide a fuller understanding of achievement-related behavior" (p. 892), it does not take into account all situational variables that might elicit achieve-

ment behavior thereby having a limited applicability in accounting for achievement behavior of other cultures. In Maehr's (1974b) view, developing an achievement model by incorporating personality, situational, and cultural variables should be seen as "the ultimate goal of the search" (Maehr, 1974b, p.893) in the study of achievement behavior. Such a goal must be attained so as to obtain a clearer understanding of achievement behavior.

1.6 THE PROCESSES OF CAUSAL ATTRIBUTIONS

Unlike the locus of control model which conceives the perception of the causal relationship between behavior and reinforcement as a determinant of behavior, attribution theory postulates the perception of how past events and behaviors were caused as the determinant of the interpretation and occurrence of a behavior and event. In the area of attribution research, there exists a diversity of approaches to explain how one's understanding of the causal structure of the world may affect one's interactions with the world. In general, Heider's (1958) theory of the naive analysis of action, Jones and Davis's (1965) theory of correspondent inferences, and Kelley's (1967) theories of covariation and configuration have most frequently been used to account for the attribution data. Each of these theories is presented and examined below.

1. Heider's (1958) Approach: In Heider's view, all human beings have some sort of cognitive awareness of their surroundings and are affected by events occurring in it. Because of the intimate relationship between human beings and their environments, the attribution of events and behaviors to causal sources becomes a part of the human nature. As Heider (1976) specifies, "Attribution is part of our cognition of the environment. Whenever you cognize your environment you will find attribution occurring" (p. 18).

Using the language of perception, Heider (1958) postulates that all causal analysis begins with the perceptual process which might be conceived of as a perceptual arc consisting of the distal stimulus on one end and the proximal stimulus on the other. The distal stimulus is the environmental reality where properties are perceived as similar by all individuals. The proximal stimulus refers to the meanings that are attached to the distal stimulus. Because the perceived meanings of a distal stimulus may vary between individuals, the way an environmental reality is handled may also be different between individuals. In Heider's view, human beings with their psychological processes such as intentions and needs, function as distal stimuli in social or person perception situations. In these situations, the perceiver interprets the characteristics that are manifested by the distal stimulus in terms of some principles, beliefs, or knowledge of personality traits to form the proximal stimulus pattern. Once the proximal stimulus is formed, the

perceiver reacts to the distal stimulus in terms of the meanings that are derived from the interpretations rather than the overt behavior of the actual psychological characteristics of the distal stimulus. Since all human beings can relate a distal stimulus to some stable structures and processes, they feel that they can grasp reality and control their environment. According to Heider, it is by relating behaviors and events to some invariant dispositional properties that one can make sense out of the world; and it is these "dispositional properties...that make possible a more or less stable, predictable, and controllable world" (Heider, 1958, p. 80). Furthermore, since discerning the causes and consequences of ongoing behavioral and environmental events is seen as a part of the human nature, Heider (1958) expresses the view that each human being is not only a basic unit in which the process of causal analysis is constantly taking place, but also is a scientist or naive psychologist who attempts to obtain information of the world so as to make it predictable and controllable.

As for purposive actions, Heider postulates that all action outcomes are dependent on a combination of effective personal force and effective environmental force. The personal force can be broken down into two contributing factors; namely: (i) the power factor which is often represented by ability; and (ii) the motivation factor (e.g. effort, intention). The multiplicative combination of these two factors determines the effectiveness of an individual in accom-

plishing a goal. For instance, if a person's power or motivation toward a goal is zero, no progress toward the goal will be expected from this person. The multiplication between the personal and the environmental forces gives rise to the concepts of "can" and "try". "Can" occurs when the imposed environmental forces are smaller than one's own power; and "try" occurs when the wish or motivating force exerts on the environment to produce the equifinality. The concept "try" has a directional and a quantitative aspect. The directional aspect refers to the intention or what a person is trying to do. The quantitative aspect refers to exertion or how hard a person is trying. Both intention and exertion can be perceived directly or through inference; and the cognition of both intention and exertion has important bearing on our interpretation of action. According to Heider, the cognition of intention may affect our judgment of other's responsibility and the appraisal of other's ability; and the cognition of exertion may have important repercussions on the meaning of an act. In Heider's view, both can and try are the conditions of purposive actions. Thus, when attributing causality to an action, the internal cause or the personal forces and the external cause or the environmental forces that may be responsible for the action must be perceived and identified. Such a process "permits statements about the attribution of action, the cognition of its components, and the prediction and control of behavior" (Heider,

1958, p.124). In sum, with the naive analysis of action and perception, "man's meaningful association with his environment and control over it is...widened" (Heider, 1958, p.124).

2. Jones and Davis's Approach: In Jones and Davis's (1965) view, there are choices behind each behavior; and behaviors occur only when a series of decisions on the choices has taken place. Guided by this view, Jones and Davis indicate that the choice an actor makes reveals both the actor's intention and underlying personal dispositions. To draw inferences from an actor's behavior so as to find out the actor's motives behind the behavior and actual nature, Jones and Davis believe that there are three conditions which a naive perceiver must consider. These conditions are:(i) the principle of non-common effects; (ii) social desirability; and (iii) hedonic relevance.

Since each behavior is seen as a choice among choices, Jones and Davis state that the attributions which a perceiver make take into account include not only what the actor has actually done but also what the actor might have done. When making attributions, the perceiver compares the consequences of the actor's action or behavior with those that the actor might have done. According to the principle of non-common effects, all choices share some effects that are common to one another and it is the non-common effects

between the choice that determine an action. Thus, an actor's intention in performing an act can be inferred from those consequences that are not common to the alternative actions. In Jones and Davis's view, the fewer the non-common effects, the less ambiguous is the intention, and the greater the perceiver's certainty in making the attribution.

The second condition that affects attribution is the observer's perceived social desirability of the actor's behavior. According to Jones and Davis, observers frequently judge an actor's behavior in terms of their beliefs about what other actors would do in the same situation. The greater the behavior deviates from social expectations, the greater the behavior reflects the underlying personal dispositions of the actor.

Hedonic relevance is the third condition. In this condition, the perceived impact of the actor's behavior on the perceiver's welfare is seen as a basis for attribution. In Jones and Davis's view, the tendency to search for the actor's underlying dispositions and intentions behind an act increases when the act is believed to have an effect on the perceiver. As the perceiver's own welfare serves as the focal point in the attribution, motivation, needs, and values of the perceiver will then be included in the attribution process. When this occurs, distortion in the interpretation of the actor's behavior and intention will result.

Thus, social expectation, information about the consequences of each possible choice, and the perceiver's belief, motivation and needs are all seen as important factors in an attribution process.

3. Kelley's Approach: In theorizing how attributions are formed, Kelley (1967) states that attributes often attribute the effect to the "condition which is present when the effect is present and which is absent when the effect is absent" (p.194). In Kelley's view, the way human beings analyze an effect is similar to that of a scientist who analyzes data by means of an analysis of variance technique. When making attributions, it is believed that human beings examine if they should attribute an effect to a person, stimulus, or time and modality according to three dimensions; namely: (1) distinctiveness ? (e.g. if the actor behaves in the same way to other stimuli); (2) consensus ? (e.g. is the actor's behavior the same with that other actors in the same situation); and (3) consistency ? (e.g. does the actor behave in the same way to the given stimulus across time and circumstances). Assuming that human beings ascribe an effect to the causal factors with which it covaries, Kelley asserts that different patterns of information lead to different attributions. Effects with high consistency, distinctiveness, and consensus will be attributed to the stimulus; low consensus, low distinctiveness, and high consistency to the person; and low consensus, low consistency, and high distinctiveness to the time or circumstances. How-

ever, while the view that observers analyze an actor's behavior in terms of distinctiveness, consensus, and consistency has received support from empirical studies, Kelley (1973) comments that such an approach "is undoubtedly somewhat on the idealized side" and that observers are "often lacking the time and the motivation necessary to make multiple observations" (p.113). In Kelley's view, causal schemata will be used when observers have to make causal inferences based on incomplete information or a single observation. Defining causal schema as a "conception of the manner in which two or more causal factors interact in relation to a [given] effect" (Kelley, 1972, p.2), Kelley specifies that there are three types of schemata, namely: (1) the tendency to invoke multiple sufficient causes (i.e. when different causes can produce an effect, the role of a given cause in producing the effect is discounted if other plausible causes are present); (2) multiple necessary causes (i.e. if an effect is a result of several different causes, these causes must be present if the effect is to occur); and (3) compensatory causes (i.e. when causal factors can inhibit and facilitate an effect, certain factors will be augmented and attributed to the effect). With these schemata, Kelley explains how observers make sense out of other's behaviors in terms of the information available to them. According to Kelley (1972) when information is incomplete, observers tend to assimilate other information to form a specific assumed

analysis of variance pattern, and from that to form a causal attribution.

In sum, it is Kelley's postulation that people attribute causality to an effect according to the amount of information available to them. In the case of multiple observations, attributors observe and respond to the covariation between the effect and its possible causes as if they were analyzing data by means of an analysis of variance. In the case of a single observation or when the information is incomplete, observers utilize other information and follow the concepts of configuration to derive a causal attribution.

1.7 RESEARCH WORK ON CAUSAL ATTRIBUTION

The three theoretical approaches mentioned above do share some common grounds on their postulations on attributions of causality. In general, these theories postulate that attribution of causality as a cognitive process or a process which occurs as a part of the human nature. In this process, the perceiver actively processes and interprets all possible information to construct a causal interpretation or commonsense explanation on the actor's behavior, to make inferences about the actor's underlying personal dispositions or stable characteristics, and to predict the actor's behavior in similar or other situations. A result of this process is

to enable the attributor to derive a guide to organize the social environment, to plan actions, and to gain predictability and controllability over the environment. Most research work on causal attribution is focused on 3 areas, namely: (1) empirical investigations on the theories of causal attribution; (2) developmental studies on causal attribution; and (3) the impact of social change on causal attribution and people's perception of themselves, others, and their environment.

1.7.1 1. Empirical Investigations on the Theories of Causal Attribution

Research following Jones and Davis's Approach have generally supported their postulations and revealed that people tend to see the cause of a behavior to be located in the person. Such a tendency increases when the actor's behavior or view deviates from social expectations or social demands. In such a case, the attributor will see the actor's act or view to be indicative of the actor's underlying personal disposition or true intention. For instance, in a series of experiments in which undergraduate students were asked to write an essay on a designated position (e.g. Pro-abortion vs. anti-abortion) and were later asked to read an essay that took a view opposite to what they previously took, Snyder and Jones (1974) found that a significant number of their subjects perceived the content of the essay which they

were told to read to be a result of the writer's true attitude toward the position and not a result of the environmental constraints imposed on the writer by the experimenter. In support of this finding, Miller (1976) found that attributors tended to attribute other's behaviors to dispositional rather than situational factors. In Miller's study, a person with a conservative outlook and a person with a liberal outlook were chosen as target persons. Their role was to choose a position and write an essay on the granting of amnesty to draft invaders, to write an essay on the topic but within the constraints imposed by the experimenter, or to read an essay that was written by the experimenter. The results of the study showed that the attributors saw the opinions in the essays and/or speeches as those of the target persons, although they were aware of the environmental constraints imposed on the target persons.

Kelley's approach also received support from empirical studies which showed that in situations where attributors can infer an actor's behavior from several observations, the actor's behavioral consistency, distinctiveness, and consensus will be considered in the process of making attributions. Major (1980) asked undergraduate students to choose general categories of information corresponding to consensus, consistency, and distinctiveness of information in order to attribute causality to an actor's behavior. He found that most subjects used all three types of information

to obtain an understanding of the actor and utilized consistency information significantly more than other two categories of information when making attribution. With these findings, Major (1980) indicated that attributors tended to gather maximum information in making causal attributions. Since consistency information provides more information about both the actor and the entity, it is more 'economical' (Major, 1980, p.1020) than other two categories of information.

Unlike Major's (1980) study, Well and Harvey (1977) found that most of their subjects used consensus information in making causal attributions. Well and Harvey (1977) asked two groups of subjects to attribute causality on actor's behavior. One group was given sufficient information while the other group was given insufficient information. The authors showed that subjects with insufficient background information tended to utilize consensus information to make causal attributions and concluded that these subjects used base-rate (consensus) information to make predictions about the behavior of the target person.

In sum, research works on causal attributions have shown that attributors are sensitive to cues made available to them and are selective as to which cues they should use when making attributional judgment. In general, the degree of social desirability of a behavior, the attributor's beliefs,

motivations, and needs, the availability of information about the background of the actor and the situation, and the behavioral consensus, distinctiveness, and consistency of the actor are all crucial elements for causal attributions. Indeed, these elements also play an important role in children's perception and attributions about their social world.

1.7.2 2. Developmental Studies on Causal Attribution

Developmental studies observe a direct relationship between children's cognitive maturity and the way they understand, organize, and interpret causal evidence in their environments. Indeed, most research shows children's perception and attribution about events and behaviors to be a result of the children's ability to exercise logical operations that develop as a function of their social/cognitive growth. Literature reviews (e.g. Ruble & Rholes, 1981) and empirical studies on the development of children's attributions have shown the following characteristics.

First, children as young as three years of age show consistent use of cues (implicit and explicit) to identify the cause of a problem. In general, children base their causal judgments on temporal priority (i.e. causes preceed events) and daily life experiences. Unlike young children who use predominantly concrete cues and rely on specific concrete features or familiar aspects of the events to make causal

attribution, older children use abstract cues and apply abstract reasonings to make judgments. Indeed, even among preschool children, older preschoolers tend to use less concrete cues and are more likely to articulately reason out how causes and events may occur together than younger preschoolers (e.g. Bullock & Gelman, 1979; Sophian & Huber, 1984).

Second, young children also use covariation information to explain other's behaviors. However, in comparison to older children and adults who use all three kinds of covarying information (i.e. distinctiveness, consistency, and consensus), young children fail to use consensus information to make inferences about either the stimulus (target) or other's behaviors. Such a developmental shift from a primarily entity orientation in the early stage (i.e. using chiefly distinctiveness and consistency information) to a primarily person orientation in the later stage (i.e. using all three types of information) indicates an increase in social experiences and a breaking down of the cognitive egocentricism in young children (Piaget, 1969). Furthermore, this shift also shows that these children have developed a belief system which they can rely on when making social judgments (Ruble, Feldman, Higgins, & Karlovac, 1979). They have also acquired the belief that they can exercise control over events and produce certain outcomes (e.g. Shantz, 1975).

Third, children use their expectancies to form schemata and conduct causal analysis when they do not have sufficient covariation information to make causal judgments. However, unlike adults, children (especially younger than seven years old) usually lack the experience in relating effects to causes which are not readily observable and are less likely to co-ordinate multiple causes or use stimulus cues to make attributions (e.g. Rholes and Walter, 1982). These difficulties in making causal schemata in young children along with their preferential use of concrete cues and features in making causal judgments could be due to: (a) their inexperiences resulting in failure to acknowledge the meanings or implications associated with a stimulus or an event and resulting in failure to realize the fact that human behaviors are partly governed by environmental stimuli and rules that control their physical and social environments (Rhole and Walters, 1982); (b) too small memory storage to accommodate all available information and inadequate information-processing capacities to grasp all information to make causal attributions (Austin, Ruble, & Trabasso, 1977); (c) low cognitive awareness that prevents them from attending to all information; (d) and their immature cognitive capacities that hinder them from developing truly distinct conceptualization of internal and external causal factors (Nicholls, 1978).

Fourth: consistent with the developmental findings that adolescents lack objectivity in their world views as reflected in their identity-information process, conflicts with parents, and perception of other (e.g. Waterman & Geary, 1974; Lerner & Spanier, 1980); and supporting the Piagetian position that adolescents do not have a flexible and stable structure of intelligence regardless of the fact that they have some degree of formal operations and "can make hypothetical deductions, think beyond the present, and analytically reflect their own thinking" (Piaget, 1947; p.148), research findings on adolescents' pattern of causal attribution show that adolescents tend to attribute their behaviors to situational rather than to dispositional causes. Although they may use both situational and dispositional attributions to explain other's behaviors, they see their own behavior as a result of the environment or the external pressures that are imposed on them (e.g. Well, 1980).

In sum, empirical findings have shown developmental changes in causal attribution from childhood to adulthood. Unlike adults who use abstract cues and all covarying information to make causal inferences about events and people's behaviors, young children use predominantly concrete cues and situational factors. In the transitional stage between childhood and adulthood, adolescents tend to make causal attributions that reflect their cognitive egocentricism or inability to perform objective judgments.

1.7.3 3. The Impact of Social Change on Causal Attribution and People perception of themselves, others, and their environment

The impact of social change on causal attribution has generated considerable research in psychology. Social change, a highly complex process (Vasudeva, 1976), involves significant alterations and modifications in a society's social structure, established modes of behavior, and philosophical outlook (Moore, 1968). To the extent that social change brings in new ways of life and requires adaptation, Vasudeva (1976) comments that "If...a radical social change is imposed on or sweeps a culture, the people are likely to become tension-ridden, for they cannot readily adjust themselves to the new patterns" (p.2). As adjustment involves a balance between modifying oneself to meet environmental demands and vice versa (Nag, 1977), McWhinney (1984) indicates that the readiness to accept social change is dependent on the people's willingness to change, views on causality, concepts of reality, and moral judgment. In view of the complexities involved in the relationship between adjustment and social change, Vasudeva (1976) suggests that investigators should select only one personality construct at a time, rather than many, so as to carefully examine the construct in relationship to social change. In investigating the effects of social change on human beings, the concept of causal attribution is frequently chosen. Specifically, the impact of social change on adolescents' perceptions of them-

selves, others, and their environments has been frequently examined.

Using Israel before and after the Yom Kippur War as a "natural laboratory" (Lazarus, 1978) to examine the process of social change and coping, investigators observed incidences of fear, worries, and stress in situations where threats and unpredictable confrontations were prevalent. Based on the data collected at the time when the war of attrition took place on the Syrian border in 1974, Levy and Guttman (1978) found: (a) a direct relationship between the imminence of the forces endangering the safety or lives of the Israelis and the intensity of the Israelis' feelings of fear, worry, and concern; and that (2) those who were over-worried or under-worried at the time of social confusion were likely to have poor strategies to cope with the environmental changes and stress.

In support of Levy and Guttman's (1978) study, Spacapan and Cohen (1983) indicated that stress-related negative effects occurred not only during but also before and after stress exposures. By asking undergraduate students to immerse their hands in ice-cold water, Spacapan and Cohen (1983) found that most subjects reported feelings of pain and higher blood pressures even before the experiment started and that their frustration tolerance level was also low even after the experiment was over. In explaining the effects and aftereffects of stress exposure, Spacapan et al.

(1983) expressed the view that it was the perception of the subjects that they had no control over the stressor in the experiment, rather than the stressor per se, that made them produce feelings of helplessness and fear in the situation. When such feelings occurred, these subjects lost their ability to cope and experienced an increase in pulse rate and a deficit in performance. Observing the cognitive aspect of the coping process in a stressful situation, Spacapan et al. (1983) specified that the anticipation of a stressful event was sufficient to produce effects that were similar to those produced by actual exposure to a stressor and that "the expectation of control over stressor termination lessened the negative impact of stressor expectation both during and after the anticipation period" (p.1251).

In a review paper which examined the relationship between subject's perceived control in stressful situations and subject's ability to cope with the situation, Miller and Norman (1979) indicated that it was the interaction between one's expectancy of response-outcome independence and one's expectancy of failure to obtain desired outcomes that gave rise to the feeling of learned helplessness. Within this interaction, locus of control, attribution of causality, and the perceived values and specificity of the event or situation determined the intensity and generalizability of learned helplessness. Reviewing studies on learned helplessness in humans, Miller and Norman (1979) emphasized that "it should be noted that attributions to causes that are internal,

important, stable, and general are predicted to maximize the severity and generalization of learned helplessness, whereas attributions to causes that are external, unimportant, variable, and specific will minimize deficits"(p.111). Consequently, those who undergo major life-stressful events (i.e. most aversive) and have a belief system that environmental events are within their control (i.e. internal and stable) will most likely develop feelings of helplessness in situations where consistent failures and response-outcome independence are prevalent.

Indeed, research work with internally-oriented individuals found that these people manifested depressive attribution styles in response to uncontrollable stressful events (e.g. Miller, Klee, & Norman, 1982). These people are likely to be depressed and make "negative self-attributions that undermine motivations and/or disrupt on-going performance by increasing anxiety, evaluation, self-concern, etc." (Ickes and Layden, 1976, p. 146). In response to the "learned helplessness syndrome" (Ickes and Layden, 1976, p.146) in humans (especially among internally-oriented individuals), Coelho (1980) warns that adolescents in contemporary societies must be given extra attention (e.g. complementing parental supervision with love and affection) as they are "more or less displaced persons" (Coelho, 1980, p.247) living "in limbo of physiological and psychological and cultural development" (Califano, 1978). With rapid changes that take place both inside (i.e. in the areas of physiological and cognitive

development) and outside (i.e. social changes) an adolescent, Coelho (1980) points out that adolescence in the modern world means "human biology, self-image, cultural rules, and social roles are all in flux at the same time" (p. 252) and that "Adolescents seem, therefore, to be caught in developmental dilemmas for which institutional guidance is either lacking or lagging behind" (p. 248). In response to the problems associated with adolescence in the modern world, Osborne, Boyle, and Borg (1984) reported that adolescents of rapidly growing societies were constantly undergoing stages of coping and adaptation as well as exposing to uncontrollable social stresses. Among these adolescents, adolescent migrants (Coelho, 1980), adolescent refugees, and adolescents in politically uncertain societies (Looney, 1979) are the high risk groups. That is, in addition to the vulnerability caused by the stress of their developmental changes, these adolescents are also ill-equipped and ill-prepared by language, customs, and resources to function effectively in unfamiliar societies or in a world where unknown and unpredicatable changes are constantly occurring (Coelho, 1980; Looney, 1979). Because of their environmental and developmental stresses, these adolescents are likely to develop various forms of anxiety and depression. Consequently, as Coelho (1980) comments, "Environmental stress poses unusually high risk conditions for adolescent migrants to-day, both within and across cultures (p.256)".

In sum, uncontrollable stressful events do have a negative impact on the well-being of human beings. Specifically, those who are internally-oriented, alert to environmental cues, and attribute events to stable causes are most likely to be affected. In situations where perceived controllability is absent, it is highly likely that these individuals will experience depression and feelings of helplessness. These feelings will also generalize to other situations where control is present. Therefore, learned helplessness in human beings arises as a result of the interaction between the expectancies of successful response-outcomes and inability to control these outcomes. In circumstances where individuals undergo uncontrollable social changes and life-stressful events (e.g. adolescents in a socially changing or politically uncertain society), they are likely to be victims of learned helplessness. When this occurs, these individuals not only will experience anxiety and depression, they will also form negative self-perceptions that may undermine their self-esteem and disrupt their on-going performance (e.g. school achievements). They will make negative self-attributions, exhibit passivity on tasks that require their ability, and allow their environments to dominate them.

1.7.4 A Conclusion

Attributing causality to events and human behavior occurs across all age groups has been recognized as a crucial element of social interaction. It enables perceivers to organize information, maintain their beliefs about people, predict other's behavior, and explain away behavioral inconsistencies of others. Although children rely heavily on concrete cues and situational factors in making causal judgments, developmental studies showed that children are active participants in their environments, and even preschoolers can use inferential rules to make attributions about behaviors. In general, attributors are sensitive to cues that are available to them and they carefully select those cues that help them formulate a causal explanation on the event or behavior. When a behavior deviates from social norms, attributors tend to see this behavior as a result of the actor's true intentions, beliefs, or stable dispositions. However, while attributing causality to events may occur naturally in human beings, such a process takes place only when human beings believe that the event outcomes are within their control. When such a belief is disrupted, human beings will change from being active to passive. They will develop feelings of helplessness and experience various forms of depression and anxiety. Amongst these individuals, people with an internal orientation along with a perception that the event is both important and determined by some stable causes will be most affected. As the feeling of helpless-

ness can be generalized to other situations, learned helplessness will be most detrimental to those adolescents who are living in a rapidly changing or politically uncertain society. Because of the impact of social and developmental changes on causal attribution and because of the direct relationship between causal attribution and cognitive development, causal attributions have been extensively investigated in the area of developmental psychology.

The goal is to gather information on people's perception of their environment and to understand other aspects of human development (Ruble & Rholes, 1981). Amongst these aspects, the mechanism of achievement behavior has most frequently been studied (Kelley & Michela, 1980); and the relationship between attribution of causality and achievement behaviors has generated much research in North America. However, while a wealth of research data has supported the attributional approach to achievement behavior, the applicability of this approach to explain achievement behavior of other cultures remains a question. In Bond's (1983) view, the attributional approach is established largely on cultures in which individualism is emphasized. To increase the applicability of this approach, Bond (1983) suggests that revising this approach where necessary must be performed. Indeed, as Harvey and Weary (1984) specified, " Research on the affective consequences of achievement-related attributions is in its infancy and is likely to be an active area of future work. There are many questions that remain"

(p.148). Consequently, further investigations on the relationship between causal attribution and achievement behavior must be performed and a cross-cultural approach in these investigations appears to be necessary.

1.8 ACHIEVEMENT BEHAVIOR AND CAUSAL ATTRIBUTION

Ability, effort, luck, and task difficulty have been perceived as the causal factors for success and failure in achievement situations. In Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum's view, these causal factors can be classified according to the internal-external (locus of control) and stable-unstable (stability) dimensions. Ability is an internal stable cause. Seeing perceived ability at a given task as a function of the degree of past success at the same or similar tasks, Weiner et al. (1972) argue that "consistency and generality of performance are salient cues for ability attributions" (p.99). Effort is an internal unstable cause. Because effort may vary between tasks and can be conceptualized as a characteristic of a person's underlying disposition, Weiner et al. (1972) comment that "the conditions necessary to attribute an outcome to effort are somewhat more difficult to determine" (p.99). According to Weiner, Heckhausen, Meyer, & Cook (1972), muscular tension, task persistence, tendency to approach achievement activities, increased performance in the face of failure, and heightened motivation at tasks of intermediate difficulty are indicators of effort. Luck is an external unstable

factor. Weiner et al. (1972) state that attributors must infer an event from its pattern of prior reinforcements before they can attribute an event to luck. In Weiner et al.'s (1972) views, "the more random or variable the pattern of outcomes, the higher the probability that luck will be perceived as a causal influence" (p.99). Task difficulty is an external stable factor. Generally, the difficulty level of a task is judged according to the task's norm. Performance that is consistent with the norm will be attributed to the nature of the task and performance that is not consistent will be attributed to the individual (Frieze & Weiner, 1971). Classifying these factors according to the locus of control and stability dimensions, most researchers (e.g. McMahon, 1973; Weiner & Kukla, 1970) find that expected performance outcomes are attributed to ability, unexpected outcomes to luck, success to internal factors (i.e. ability and effort), and failure to external factors (i.e. luck and task difficulty). In view of the way causal judgments are formed in achievement situations, Weiner et al. (1972) indicate that causal factors must be identified according to the attributional dimensions so as to observe how achievement behaviors are perceived and attributed.

The relationship between performance expectancy and ability/luck attributions has generated considerable investigations. Analyzing ability and luck in terms of the locus-of-control and stability dimensions and examining how

expectancy may be attributed to these causal factors, Eiser (1982) shows that expectancy is determined by the stability, rather than the locus-of-control, dimension. With respect to the difference in the attribution of causality between expectancy confirmation and disconfirmation, Feather (1969) explains that because expectancies are predictions of one's performance based on prior experiences in related situations and on the estimates of one's ability, it becomes natural that a person would attribute expected outcomes to ability and/or to factors that give rise to similar outcomes in the past and attribute unexpected outcome to luck or unstable factors such as effort. To substantiate Feather's (1969) explanation, McMahon (1973) comments that "the greater the disparity between the subject's expectancy and his actual outcome, the greater weight he gives to effort and luck as causal factors and the less weight he gives to ability" (p. 112-113). Indeed, as each expectancy is confirmed, a new expectancy is formed; and factors leading to the previous expectancy confirmation become the causal elements for subsequent expectancies (McMahon, 1973). In sum, performance expectancies are attributed to ability and luck; and in these factors, the stability dimension occupies a crucial role in the process of attribution.

The tendency to attribute success to internal factors and failure to external factors suggest that human beings are more willing to accept causal responsibility for their posi-

tive outcomes (e.g. success) than for the negative outcomes (e.g. failures). An examination of this tendency indicates that self-attributions in the case of success serve to enhance one's self-esteem and maintain the positive affects such as pride that may result from success. Conversely, external attributions in the case of failure serves to protect one's self-esteem and alleviate some of the negative affects such as shame that may arise from failure (Weary, 1980; Harvey & Weary, 1984). Although the striving for self-enhancement appears to be the underlying motive for making internal attributions and self-protection for making external attribution in achievement situations, empirical findings indicate that such a tendency of accepting credits for success and rejecting responsibilities for failure may change across situations. Indeed, considerable reversals of such a trend have been obtained from several investigations (e.g. Arkin, Appelman, & Burger, 1980). With respect to these reversals of the trend, Weary Bradley (1978) comments that seemingly counterdefensive attributions will be made when people attempt to make themselves appear to be modest about their abilities so as to gain social approval and/or avoid public embarrassment resulting from others' invalidation of a self-enhancement that is too positive. Consequently, some characteristic patterns of causal attribution have been gathered from investigations on the relationship between performance outcomes and internal/external attributions in achievement situations.

First, the tendency to make high self-attributions following success and low self-attributions following failure is most frequent in situations where the performance is evaluated by peers or by those whose standing is similar to or lower than that of the actor (e.g. Weary, 1980). Indeed, the relationship between affect and self-attributions for positive and negative performance outcomes is clearly observed in these situations. By asking undergraduate students to make attributions about their performances which were observed by someone with a lower standing, Weary (1980) reported that while students with positive outcomes reported more positive affect and greater feelings of egotism than students with negative outcomes _during_ performance, "these differences in levels of affect were more pronounced during the _post performance_ period" (p.355).

Second, the tendency to become modest about one's abilities and to make self-effacing, rather than self-enhancing, attributions about one's positive performance outcomes increases in situations where the individual knows the performance will be evaluated by experts or in situations where social pressure is intense. In a study which asked a group of high social anxiety and a group of low social anxiety subjects to play the role of a therapist or an assistant, Arkin, Appelman, and Burger (1980) found that most of their subjects tended to portray themselves in a modest fashion and made less self-presentation attributional bias when they were informed that their performance would be evaluated by a

group of experts. In response to the finding, Arkin et al. (1980) conclude that the unflattering modest attributions of their subjects "are in part a reflection of self-presentation, or a desire to maintain or create a favorable impression" (p.34).

Third, people tend to make causal attributions about their performance according to the demands that are expected of them from society. For example, by pointing out the success and failure of the teachers' teaching method in a simulated teaching experiment, Tetlock (1980) found that teachers tended to take responsibility for failure but attributed success to their students. With respect to the counterdefensive attributions of the teachers, Tetlock (1980) specifies that the obligations and duties that one has to keep for one's role or job can be a basis for causal attributions. Since teachers are expected to transmit knowledge to their students, the claiming of causal responsibility for their students' failures but attributing success to their students becomes a way by which teachers can create an image that they are responsible individuals. Observing these three trends as derived from causal attribution research, Kelley and Michela (1980) express the view that attributions constitute an important part of human life. They enable human beings to present themselves in a favorable manner and to positively relate their activities and themselves to others. By doing so, they manage to enhance or protect their self-

esteem, maintain social acceptance, and avoid any embarrassment that may occur in situations that are beyond their control.

However, while the tendency of making self-serving attributions or making internal attributions under success but external attributions under failure is replicated in most studies involving North American majority groups, such a tendency is rarely observed in studies involving different cultural groups. In a study which examined attributions of success and failure between Asian Indian and Canadian Caucasian elementary school children of upper-middle class background, Fry and Ghosh (1980) found significant cultural differences in attribution of causality between these two groups. Unlike the Caucasian group which claimed personal credits for success and attributed failure to external factors such as luck, task difficulty, and inaccuracy of the evaluator, the Asian Indian group attributed success to luck and took responsibility for failure. In view of the fact that these subjects were matched in terms of their family and education backgrounds, Fry and Ghosh (1980) conclude that the differences in causal attributions between the Asian Indian and Caucasian children could be a result of their differences in religions and cultural backgrounds. In support of Fry and Ghosh's (1980) finding, Bond, Leung, and Wan (1982) showed that humility and making self-effacing attributions about one's abilities were seen as favorable

behaviors among the Chinese. Although the American majority groups also make self-effacing attributions (e.g. Tetlock's study) like the Chinese, Bond et al. (1982) point out that the motives behind the attributions of the two groups are different. Observing the cultural differences between Chinese and Americans, Bond et al. (1982) specify that self-effacing attributions of the Americans are reflections of their desire to gain recognition and enhance public image while self-effacing attributions of the Chinese are reflections of their desire to maintain harmonious interpersonal relationships. Indeed, the influence of culture on self-perceptions among Japanese, Hong Kong Chinese, and American college students is plainly revealed in Bond and Cheung's (1983) study. In this study, Bond and Cheung presented Kuhn and McPartland's (1954) Twenty Statements Tests to their college subjects and found significant cultural differences on self-esteem among their subjects with the Americans perceiving highly of themselves following by the Chinese and the Japanese. With respect to their findings, Bond and Cheung conclude that the self-effacement of the Japanese and the relative neutrality of the Chinese serve important social functions in their cultures. In Bond and Cheung's view, low self-esteem of the Japanese and modest self-evaluations of the Chinese are ways to maintain group cohesiveness in these cultures. Observing the effects of culture on self-perception and the relationship between causal attribution and self-perception, Bond (1983) questions the applica-

bility of attribution theory in explaining human behaviors and attributions of causality in other cultures. Since attribution theory is developed in a society where personal independence and individualism are practiced, Bond (1983) muses that most of the postulations of attribution theory are "unexportable" (p.153) to cultures or structurally tight societies where group goals, inhibition of strong feelings, and humility are fostered. In response to the weaknesses of attribution theory, Bond (1983) emphasizes that alternate models of the attribution process must be developed. To accomplish this goal, Bond (1983) indicates that less obtrusive techniques must be used to examine the attributional behavior and that the impact of culture on attribution must be observed. Finally, seeing the importance of studying the attribution process cross-culturally and developing a universal model of attributions, Bond (1983) indicates that "we must move beyond simple comparisons between cultures and focus on ferreting the personality variables common to both cultures and which are mediating the cultural differences"(p.156). In Bond's (1983) view, it is only by performing such a procedure that we can establish personality-attribution linkages that hold across cultural variation and these linkages are "essential building blocks for a universal (pan-cultural) theory of social behavior(Bond, 1983. p. 156)."

1.9 THE GOALS OF THE PRESENT STUDY

Viewing the weaknesses of the achievement models in explaining achievement behaviors and the causal attribution approach in accounting for the pattern of attributing causality in achievement situations in cultures or societies where group-goal conformity and harmonious interpersonal relationships are practiced, the goals of the present study are:(1) to refine the achievement and the causal attribution models so as to widen their applicability in explaining achievement behavior in the non-Western cultures; and (2) to investigate further the concept of achievement so as to attain a further understanding on achievement behavior and the pattern of causal attribution on achievement. These goals will be attained by conducting part of the study in a culture which differs distinctively from the culture in which these models originated and comparing these results with information that is to be gathered in a modal Western culture. Further, to maximally observe the effect of environment on achievement behavior and causal attributions, a socially and politically changing predominiantly Eastern sub-culture will be selected and results of such an effect will be compared with those that are gathered in a concurrently politically and socially stable society. To carry out this procedure, achievement behavior and causal attributions of Chinese adolescents in Hong Kong (a predominantly Eastern culture in a politically-and-socially changing society due

to the impending takeover of Hong Kong by Communist China in 1997) will be compared with Chinese adolescents in Canada (individuals with a Eastern cultural background living in a predominantly Western, politically stable society). The results of these two groups will then be compared with those of the Euro-Canadian adolescents. By doing so, the effects of culture and environmental changes on achievement behavior and causal attribution will be observed. Furthermore, the weaknesses of the achievement and the causal attribution models in explaining achievement behavior will be identified and ways to improve these models will be presented.

Chapter II

CULTURAL CHARACTERISTICS, PERCEPTION OF CAUSALITY, AND ACHIEVEMENT OF THE CHINESE

2.1 THE CHINESE: TRADITIONS AND CONTEMPORARY EVENTS

The Chinese culture, one of the oldest cultures in the world, has its roots extended back to the days of Confucius (552- 479 B.C.). In presenting a historical view of Chinese developmental psychology, Liu (1982) indicates that the Chinese culture and the influence of the Confucian thought in the Chinese culture are plainly revealed from the way Chinese people view human growth and development and observe their duties both inside and outside their families. As Liu (1982) specifies, the Chinese culture has formed "some of the sources of the ideas in modern Chinese developmental psychology, and indeed in psychology as a whole" (p.391). Consequently, understanding the Chinese culture becomes the first step in understanding the psychological development of the Chinese people.

Although studying the behavioral and attitudinal pattern of an ethnic group within its cultural context is seen as an important step in understanding human behavior (e.g. Pedersen, 1979), Schwartz (1981) emphasizes that psychologists

should also attend to the immediate environment of an ethnic group. By observing culture broadly so as to include "contemporaneous innovation, productivity, and variation" (p.13) into the meaning of culture, Schwartz (1981) indicates that the pre-existing component of a culture along with the events that are structured by other enculturated persons must be observed in order to understand the cognitive and personality development of an individual. Thus, to meaningfully study achievement behavior and causal attributions in achievements among Chinese-Canadian and Hong Kong Chinese adolescents, the Chinese culture as well as the social and political scenes of the Hong Kong and the Canadian societies must be observed.

2.2 THE CHINESE CULTURE AND PATTERN OF SOCIALIZATION

The traditional Chinese society was agricultural in nature and practiced beliefs and values that were crucial to the maintenance of an agricultural way of life. Today, many of these beliefs and values are still observed by the traditionally-oriented Chinese even when modernization and urbanization have replaced their traditional agricultural life pattern.

Since the yield of a good crop was believed to be controlled by the skies, ancient Chinese farmers observed the heavens as the absolute power which determined their posi-

tions in society and regulated everything on earth, including rain and drought, life and death, and wealth and destitution. To please the heavens so as to avoid chaotic events such as rainstorms or droughts that might destroy crops and human lives, the Chinese believed that strict social or interpersonal harmony must be practiced and that they must do good in their lifetimes so that their descendents would benefit from their good behaviors. In their views, harmony assured good fortune and disharmony brought misfortune. Consequently, the saying "prosperity in everything begins with harmony in the family" is constantly mentioned by the Chinese.

Within a traditional Chinese family, every member must address each other by ordinal position in the generation and perform the expected role to preserve family peace and harmony. The way an individual should behave in parent-child, husband-wife, sibling, superior-subordinate, and peer relationships (also termed five cardinal relations by the Chinese) as defined in Confucius' time is still observed and practiced by the Chinese today. In a Chinese family, the father is seen as the highest authority who plays the role of the disciplinarian in the home (Ho, 1981) and whose behavior in relationship to other family members is generally dignified, authoritative, remote, and aloof (Sue, 1973). The mother has often been characterized as being kind. She serves as an "intermediary" (Ho, 1981, p.88) between her

husband and children and conveys her children's wishes to her husband if the wishes may displease her husband. The role of a son is to assure the continuation of the family line, look after his parents in their old age, and carry out the duties of his father. The role of a daughter is to perform domestic duties, get married, be an obedient daughter-in-law, and bear children, especially males. Since the daughter will bear the surname of her husband after her marriage and will no longer be a member of the family into which she was born, female children are generally less favored than the males and the preference of having a male child over a female is often openly expressed in a Chinese family.

In the traditional Chinese family, ancestors and elders are viewed with great reverence. Conforming to the demands of the parents and other family elders is expected of each one in the younger generation. To carry out this commitment, children must yield unquestioned obedience to the elderly, achieve well, maintain a good family name, and bring credit to the family. Bad or unexpected behaviors such as misconduct, laziness, and disobedience are considered as shameful, will disgrace the entire family and thus, must be suppressed by the ruthless use of shame. Consequently, to become a good son or a good daughter, an individual must obey the parental wishes and mobilize thoughts and actions to conform to the family goals. In sum, the Chinese are best described as

"situation-centered" in contrast to "individual-centered" (Tseng & Hsu, 1970).

In presenting a comprehensive view on the traditional patterns of socialization in Chinese society, Ho (1981) points out that because the term "childrearing" implies nurturance and the presence of an intimate parent-child relationship in the development of personality formation, the term "educating the young" may be a more appropriate term in describing socialization in Chinese families than "childrearing". From the Chinese' point of view, education and the development of a moral character are the key steps to make children learn and understand their duties both inside and outside their families and must be fostered as soon as children are old enough to understand. Generally speaking, children at preschool ages are considered as too young to learn and can be exempted from duties and punishments. At this stage, children must be indulged and treated leniently without demands or expectations to be put on them as one would with older children. Reporting the Chinese socialization pattern, Sollenberger (1968) expresses that Chinese children younger than four years old can eat and sleep according to their wishes and not according to the clock. There is no punishment for lapses in toilet training and when they have to be disciplined, the punishment employed is normally withdrawal from the social life of the family and deprivation of special privileges or objects, rather than physical punish-

ment. In response to the care and attention that young children receive from their caretakers, Sollenberger (1968) indicates that the gentle treatments of the first few years of life serve to establish a sense of security and confidence in the young children, which may serve to counteract or reduce the frustrations of rigid discipline that they have to receive later on.

Parent's attitude toward their children changes abruptly when the children reach school age around six or seven years old. At this stage, education is emphasized and pressures are imposed on the children to achieve academic success. To fulfil these goals, children are expected to reduce their playing activities to a minimum and spend most of their time learning how to read and write. At home, parental tolerance for poor performance decreases, and commands and prohibitions are rigidly enforced. At school, strict discipline is imposed to make sure that school children would pay maximal attention in class and devote themselves to their school work. Thus, both parents and teachers are responsible for educating the young; and the saying "rearing without education is the fault of the father; teaching without strictness is the negligence of the teacher" is frequently heard among the Chinese.

While classroom education takes place at school, family education also occurs at home. According to the Chinese, family education is crucial to the formation of moral char-

acter and children without a proper family education can ruin the reputation of their families and bring disgrace to their parents. Practicing humility and self-respect, controlling aggression and unwanted impulses, and yielding absolute obedience to the parents and honoring the ancestors (i.e. filial piety) are the major aspects that children must observe in their family education. Traditionally, all major decisions in a child's life, including marriage and career choice, were made by the parents; and the child had to conform to these decisions in order to show respect for the parents. Obedience to parents was expected to continue throughout one's life. "While one's parents are still living, one does not claim the status of old age", thus remains as a popular saying among the Chinese of today.

Expressing anger openly and actively is strongly discouraged. Children are not to misbehave outside the home as misconducts are indicators of lacking in family education and would bring disgrace to the family. Older children must set an example for their siblings in academic excellence, obedience to parents and elders, manners, interpersonal harmony, and control of impulses. All children must learn to present themselves humbly in front of others and attribute credits and achievements to their parents or families. Thus, while children learn that they must perform well and attain academic success, they learn not to brag about themselves but to attribute their success to their parents. Because bringing honor to the family and acting according to parental

aspirations are one's primary duties, acting contrary to these duties is considered selfish and not showing gratitude to the parents. In sum, humility plays a crucial role in the formation of personality among the Chinese; and filial piety serves as the guiding principle in their socialization.

Summary: Age, sex, and generation status determine an individual's position in a traditional Chinese family. With these determinants, an individual's role and behavior within the family are fixed. Children younger than seven years of age and people in the advanced years are exempt from punishment regardless of their wrong-doings. However, once children reach school age or the age of understanding things, strict discipline is imposed on them to ensure that they learn their duties and obligations both inside and outside their families. They are expected to restrain and inhibit personal feelings, obey their parents, achieve academic excellence, attain outstanding occupational status, bring credit to their families, practice humility, and maintain interpersonal harmony. Failure to carry out these obligations will be strongly punished through the use of shame. Grouping these together, Chinese are generally more deferential, less autonomous and exhibitionistic than people of other cultures (Sue & Sue, 1973). As the family in effect has set up a psychological boundary for its growing children, misconducts in the children's later developmental stages could be easily suppressed and the period of adoles-

cence would be less likely be marked by turmoil and rebelliousness as one would expect from adolescents in many Western societies (Ho, 1981).

2.3 CHINESE IN CANADA: THEIR PAST AND PRESENT

In presenting his argument that the occupational structure and ethnic stratification of Canada were not simply a result of the cultural heritages of its ethnic groups but also a result of the institutional racism that Canada practiced in the nineteenth and the early part of the twentieth century, Li (1979) indicated that the occupational structure of the Chinese in Canada was largely a result of the institutional racism which "limited the range of choices available to the Chinese, and imposed constraints upon their economic institution" (p. 330). Consequently, Li (1979) suggests that observing the specific historical experience of each ethnic group is a precondition to understand the ethnic stratification in Canada. Similar to Li's (1979) view, Sue (1973) also expresses that cultural and historical forces of racism have shaped and defined the Asian-American identity and that understanding the impact of racism on the behavior of ethnic minorities constitutes the fundamental importance in studying the personality characteristics, academic abilities, and vocational interests of Asians in America.

A. Chinese in the Historical Past of Canada

Chinese have been present in Canada for over one hundred years. Initially, they came to Canada from California where they had worked as laborers and miners in the Gold Rush of 1849. Later, they came to Canada directly from China where they were recruited by the agents of the coolie brokers of Hong Kong. They were hired as cheap laborers to complete a section of the Canadian Pacific Railroad (CPR) and to return to China at the end of their contracts. Thus, massive importation of Chinese labor did not take place until the early 1880s when CPR was constructed between 1881 and 1885 to link British Columbia with eastern Canada (Krauter & Davis, 1978; Li, 1979; Chow, 1976). According to the Report of the Royal Commission on Chinese Immigration (1885), the total number of Chinese arrived in Canada directly from China between 1876 and 1880 was 2,326. However, this number rose to 2,939 in 1881 and 8,083 in 1882 resulting with 9,126 in 1891. Together with other Chinese who came to Canada from the U.S., the total number of Chinese laborers in the province of British Columbia between 1881 and 1884 was over 15,700 (Royal Commission of Canada, 1969). Open anger against the Chinese occurred when British Columbia experienced economic hardship and when many Chinese could not accumulate enough fortune or money to pay for their return fare to go back to China. Although some Chinese managed to return to their homeland and joined their families in China, many Chinese remained behind. They were in Port Hammond, Victoria, and in

the coastal areas around Vancouver. In complete destitution, they took jobs at almost any wage (Krauter & Davis, 1978). Since economic conditions were poor when the CPR was completed in 1885, the presence of the Chinese laborers in the job market was seen as a threat to the white laborers. Chinese were regarded as enemies who snatched away employment and undercut wage agreements. As anti-Chinese sentiments intensified, union organizers and politicians used the issue of anti-Orientalism as a means to consolidate union organization as well as to win political support or to advance political careers (Li, 1979). Consequently, the parliament of Canada enacted its first anti-Chinese legislation in 1885 to prevent Chinese from entering Canada. With this enactment, a head tax of fifty dollars was levied on every Chinese entering Canada. According to the reports of Canada Year Book (1930), over 600 thousand dollars were collected from 12,197 Chinese who paid the head tax and entered Canada between 1886 and 1894. In 1901, the head tax was increased to one hundred dollars, and to five hundred in 1904. All Chinese immigrants had to pay the head tax except "consular officers, merchants and clergymen and their families, tourists, men of science, students, and teachers" (Canada Year Book, 1930, p.175). Consequently, the Canadian government collected nearly $19 million in head taxes from the Chinese between the period of 1885 to 1923 (Baureiss, 1985). Anti-Chinese sentiment reached a climax in 1923 when the parlia-

ment of Canada passed the Chinese Immigration Act (also known as the Chinese Exclusion Act) which prevented virtually all Chinese from entering Canada. This Act also prevented the Chinese men in Canada to bring their wives and children to Canada. With this Act, the Chinese population in Canada dropped with the sex-ratio of 7.8 males to one female in 1941 (Census of Canada, 1946). This Act was perceived as a necessary measure to protect white Canadian laborers from the Chinese since the imposition of the head tax was not adequate to stem the flow of the Chinese immigrants into Canada due to the political unrest, famine, and social and natural calamities that Chinese peasants had to suffer in China. The effectiveness of the Chinese Immigration Act was apparent when one considered that between 1925 and 1947, when the Act was repealed, only 16 Chinese immigrants entered the country (Baureiss, 1985).

The federal head tax, anti-Chinese laws, and public hatred against the Chinese made the lives of the Chinese in Canada harsh and difficult. As Krauter and Davis (1978) specified, "Prejudice, discrimination, and scapegoating dogged the Chinese" throughout the Canadian history (p.63). They were stereotyped as "opium-smokers", "heathens", and "gamblers". Their mode of living was seen as undesirable and detrimental to the well-being of Canada (Chow, 1976). They were denied voting rights, not allowed to sell liquors or buy property, and not allowed to practice law or pharmacy. The legislative control of the Chinese forced many Chinese

to leave the regular labor market and enter into the marginal or peripheral market (Li, 1979). In view of the fact that Chinese were prevented from skilled occupations and were forced into the unskilled labor sector, Li (1979) expressed that "The emergence of Chinese laundries and restaurants may be viewed as survival adaptations, on the part of the Chinese, to develop alternate economic opportunities amidst a hostile labor market" (p.328). In sum, the discrimination against Chinese had produced considerable undesirable effects. It restricted the rights of the Chinese as Canadian citizens, crippled their ability to compete in the labor market, promoted a system of inequality in the Canadian society, and encouraged the ideology of white supremacy/ oriental inferiority in Canada (Smith, 1920; Angus, 1937; Li, 1979).

B. Chinese in Canada Today

Chinese today are often stereotyped as obedient, introverted, and hardworking. Although anti-Chinese sentiment still exists in Canada, it exists in a much subtler form than that of the past. According to Sue (1973), Chinese are considered as a "model minority" and they carry a "whiter than white" image in North America (Daniels and Kitano, 1970). Indeed, the negative stereotypes of the Chinese began to change to those of general approval by the 1930's and the effort of the Chinese in Canada in fighting in the Second

World War also won for themselves much respect and admiration from the people in North America (Chow, 1976).

Along with the attitudinal changes of the general public toward the Chinese after World War II, Chinese communities and the composition of the Chinese in Canada also underwent drastic changes. With the repeal of the Chinese Immigration Act and the relaxation of the Canadian immigration restrictions in 1947, new immigrants comprising of the wives and children of Chinese residents of Canada entered the country. The relaxation of immigration laws in the 1950's also permitted the entry of independent Chinese. Unlike earlier immigrants who were mainly farmers, artisans, and workers in rural China, these "newcomers", who possessed the occupational skills suitable for Canada, were largely former residents of cosmopolitan Hong Kong and other areas of China. Along with this flow of Chinese immigrants, the second generation of Canadian-born and educated Chinese emerged in Canada. These second-generation Chinese-Canadians struggled to claim their birthright as first-class citizens and their accomplishments in their scholastic careers brought in much changes in the Chinese communities (Chow, 1976). By 1961, while Chinese were most over-represented in service and recreational occupations, they were also slightly over-represented in professional and technical occupations (Royal Commission on Bilingualism and Biculturalism, 1969). The scholastic accomplishments of the Chinese in Canada became

more prominent by 1962 when the "point system" was introduced in the Immigration Act. Under the point system, immigrants of any nationality could come to Canada as long as they could pass the immigration assessment in the area of education and training, occupational skills and demands, knowledge of English and French, personal assessment, age, arranged employment, and employment opportunities in the area of destination (Statutory Orders and Regulations, 1962, 67-434). Consequently, most Chinese immigrants who entered Canada after the change in Immigration Act in 1962 were professionals who possessed occupational skills that were valued by the Canadian society. With the flow of Chinese professionals coming into Canada as a result of the change of the Canadian immigration policy, the educational profile of the Chinese in Canada also changes. Baureiss (1985) reported that the educational profile of today's Chinese-Canadian differs from that of the general Canadian population in 3 aspects; namely: (1) there are more Chinese with less than Grade 5 education than the general Canadian population (10% of the Chinese vs. 4% of the Canadian); (2) the number of Chinese holding trade certificates and diplomas is less than that of the general Canadian population (17% Chinese vs. 23% Canadian); and (3) the percentage of Chinese who have attended university is higher than that of the general Canadian (nearly 29% Chinese vs. 16% Canadian). With such an educational profile, the distribution of Chinese in the dif-

ferent occupational categories of the Canadian job market also differs from that of the general Canadian population. Amongst the fields that required specialized training, Chinese in Canada are overrepresented in natural science, engineering, and medicine; and underrepresented in social sciences and teaching. In the unskilled labor market, Chinese are overrepresented in the community and service industry, especially in the areas of accommodation and food services; and underrepresented in the construction and other primary (e.g. fishing) industries (Baureiss, 1985).

2.4 ACHIEVEMENT-RELATED BEHAVIOR OF THE CHINESE IN CANADA

The achievements and the attitude toward learning and teachers of the Chinese students in Canada reflect their cultural background and their experiences as minorities in Canada. In comparison to non-Chinese Canadians, Canadians of Chinese descent tend to take more practical and applied approaches to life problems, do better in school and present less problems in the classroom, be more submissive to authority, and take more positive attitudes toward teachers and learning (Wong, 1979; Ross, 1977; Leung and Foster, 1985). In general, Chinese-Canadians have "reputation for patience, backbreaking work, and meticulous results" (Ross, 1977, p.16) and the successes of the Chinese in North America have been seen as a result of their cultural values, obedience, hard work, and thrift (Sue & Kitano, 1973).

The Royal Commission on Bilingualism and Biculturalism (1969) reported that of all immigrant groups that entered Canada since 1960, the Chinese ranked as one of the highest in the rate of upward mobility. Although Chinese are over-represented in the community and service industry of the unskilled labor market, they are also overrepresented in the fields requiring specialized training (e.g medicine, engineering). McCarthy and Wolfe (1975) found that Chinese students were more likely to achieve academic excellence and accomplish educational distinctions than other minority groups in the United States. Vernon (1980) found that three times as many Chinese-Canadians in Calgary obtained university degrees than would be expected from their total number in the population. Baureiss (1985) reported that over 17% of the Chinese in Canada have a bachelor's degree or higher in comparison to 8% of the total Canadian population. Similar to the American studies (Weyl, 1969) which found that Chinese tended to choose academic subjects and excel in occupations that required high analytic skills such as accounting, architecture, engineering, and medicine, Vernon (1980) also found that most Chinese-Canadian graduates of the University of Calgary were engineering and physical and biological sciences majors. In view of the fact that Chinese in North America tended to obtain higher scores in quantitative tests and choose occupations predominately in the physical science and engineering fields, Watanabe (1971) indicates that both the Chinese cultural values and the economic hardships that

most Chinese had experienced in the past must be observed in understanding the vocational interests and academic performances of the Chinese. According to Watanabe (1971), the low verbal but high quantitative performances of the Chinese reflect their bilingual background, limited communication patterns in the home (especially between parent and child), and parental guidance that physical sciences provide them the skills that give them the greatest economic and social mobility in North America. In support of Watanabe's (1971) view, Sue (1973) indicates that because quantitative activities emphasize the ability to think logically and to apply a structural and concrete approach to solve problems, they become an area which is most attractive to the Chinese. As Chinese are likely to be situationally-centered and stress a concrete approach to life, quantitative activities become desirable modes of expression for the Chinese (Sue & Kirk, 1972) while people-contact professions (e.g. real-estate salesman) that require some degree of forceful self-expression or verbal-linguistic occupations (e.g. author-journalists) become less desirable for them (Sue, 1973).

Like their vocational and academic interests, achievement-related behavior and attitude toward learning and teachers of the Chinese students in Canada are also heavily influenced by their cultural values. In a study which investigated achievement behavior and perception of the importance of family name between Chinese-Canadian and Euro-Cana-

dian adolescents, Mak (1983) found that both young and old Chinese-Canadian adolescents had internalized their family goals as targets of achievement and observed failure to live up to parental expectation as a source of shame that would disgrace their families. In addition, Mak (1983) also found that the Chinese-Canadian adolescents tended to be highly concerned about their family names and expressed the importance of fulfilling duties and obligations toward their families. Mak's (1983) findings are in agreement with Yu's (1980), who studied over 400 adolescents in Taiwan to assess the cross-cultural validity of McClelland et al.'s (1953) affective arousal model for achievement. In this study, Yu (1980) observed a strong sense of collective ego identity among her subjects. Unlike most research findings on the majority groups in North America that adolescents tended to achieve and perform for personal satisfaction, Yu (1980) found that Taiwan Chinese adolescents (especially males) were most effectively aroused in competitive situations when their performances would be seen as a reflection of a larger collectivity than the self. In view of her findings, Yu (1980) states that "existence and aspirations solely for individualistic purpose is meaningless in the Chinese context" (p. 189). In sum, Chinese adolescents observed the values of inter-dependence and affiliation, not those of independence and individualism (Yu, 1980).

Research findings on students' classroom behaviors found that Canadian students of Chinese descent tended to be more inhibited and less ready to express their impulses, less socially extroverted, less individualistic, and more obedient and conforming to authority than non-Chinese students (e.g. Wong, 1979). In an experiment which investigated cultural differences in attitudes towards teachers and learning between Chinese-Canadian and non-Chinese Canadian grade-school and junior-high-school students, Leung and Foster (1985) found that Chinese-Canadian students had greater respect for their teachers and placed higher values on learning than their non-Chinese Canadian peers. Similar to Leung and Foster's (1985) findings, Lee and Trimble (1982) found that unlike non-Chinese Canadian university students who were likely to be outgoing, adventurous, expressive, talkative, and witty, Chinese-Canadian university students (especially females) tended to be shy, submissive, restricted in outlook and interests, and more disciplined and discreet in their manner. In a study which investigated the educational goals of Chinese-Canadian university students, Wong (1979) found that Chinese students were proud of their cultural background and believed that university education was necessary for a bright future. Indeed, such a view was observed among most Chinese-Canadian students regardless of the length of residency and parent's socioeconomic status in Canada.

In sum, research findings have shown that Chinese-Canadian students have a unique set of psychological characteristics. Unlike students of other ethnic groups, Chinese-Canadian students tend to be submissive to authority and loyal to their families, excel in studies that require quantitative skills, and place high values on learning and university education. Because of these characteristics, Wong (1979) indicates that it would be useful for teachers and university personnel to observe and understand the cultural background and psychological characteristics of the Chinese-Canadian students; and that it is only by means of such a process that both teachers and Chinese-Canadian students would widen their acceptance toward one another. Similar to Wong's (1979) view, Lee and Trimble (1982) observe educator's evaluation of students according to the students' cultural values as an important step to maintain multiculturalism in Canada.

2.5 HONG KONG: ITS PAST AND PRESENT

Hong Kong, a British colony situated on the south-east coast of China, is composed of three major parts; namely: the Hong Kong Island, the Kowloon Peninsula, and the New Territories. Since the beginning of its colonization, Hong Kong has been seen as a rapidly growing city. Indeed, its growth has been seen as a unique unstopable process which could withstand both internal and external conflicts (Lewis,

1982). To understand the present situation of Hong Kong and to predict Hong Kong's political future, Lewis (1982) suggests that "an understanding of Hong Kong's past is essential to an enlightened view of its prospects" (p.2). Thus, to understand the people and the way of life in Hong Kong and to predict the future of Hong Kong, a history of Hong Kong is presented.

2.6 THE HISTORICAL BACKGROUND OF HONG KONG

The cession of Hong Kong[2] to the British empire in the 19th century was a result of the eagerness of the British to open China to trade. Throughout the Chinese history, Chinese people thought highly of themselves, regarded China as a self-sufficient country that was filled with blessings from the Heavens, and refused to treat people of other countries on a level of equality. While the European traders were keen to export their products to China and import products which they valued from China (e.g. silk, tea), the attitude of the Chinese for European traders toward foreigners made it exceptionally difficult to trade with China.

During the eighteenth century, the commerce between the West and China was done largely through the hands of the British. To maintain their trading privileges with the Chinese, British merchants had to obey all Chinese laws and

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[2] Much of the information on the history of Hong Kong is cited in Endacott's (1973). A History of Hong Kong. Hong Kong: Oxford University Press.

follow all restrictions that were directed towards them. Basically, there are eight regulations that the British merchants had to follow. They were: (1) all commercial dealings had to be done through a loosely organized group of Hong merchants or Co-Hong and could never be done directly with the Chinese merchants. (2) All British merchants had to stay in the factories that were owned by the Hong merchants and could not enter the city. (3) Any communication with the emperor or Chinese officials had to be petitioned through the Co-Hong. (4) The Chinese language was the only language that was accepted by the Chinese officials and British merchants were not allowed to learn the Chinese language. (5) The use of Chinese sedan chairs or Chinese servants was forbidden. (6) No European or British women were allowed in the factories. (7) Possession of firearms was not permitted and no warship was allowed to pass the Bogue, the narrow channel leading to Canton. (8) The merchants were allowed to go to the gardens three times a month only when accompanied by a Chinese linguist. Because of these regulations, British merchants were forced to lead a very restrictive life in China. They felt that their trade with China not only should be extended but should also be subjected to less restrictions and protected by commercial agreements.

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[3] The British East India Company monopolized the British tea trade and allowed private merchants to share other trades with China. However, these private merchants must be under the control of the Company.

In 1833, the British East India Company[3] lost its monopoly. Seeing that they had more freedom to trade in Asia, British merchants believed that they should get rid of the restrictions that were imposed on them by the Chinese government. In 1834, Britain sent Lord Napier to China as the Chief Superintendent of Trade. His duties were to proceed directly to Canton through the Bogue and to persuade the Chinese government to establish diplomatic relations between the two countries so as to resolve any difficulties relating to trade. Unfortunately, the announcement of Lord Napier's arrival at Canton by letter and his direct contact with the Viceroy of Canton were seen as violations to the Chinese rules. With these violations, the Chinese officials refused to meet Napier and ordered all trades with the British to come to a complete stop. In anger, Napier ordered warships to Canton and indicated that China would never improve the conditions of trade except under force. To forcefully open China to trade, the British government believed that a Superintendent of Trade with an armed force must be sent to an island outside Canton; and Hong Kong was the ideal place to accomplish such a goal.

British desire to colonize Hong Kong was brought into the open in 1842 when the Treaty of Nanking was signed to conclude the Opium War. In the olden days, opium was seen as an important medicinal drug and was used extensively in Chinese medicine. During the seventeenth century, opium was used

outside medicine and the practice of opium smoking spread across China and became a serious national problem. Because of the addiction to opium, the morale and the productivity of the Chinese people were low while their demand for opium was high. During the eighteenth century, the supply of opium came mainly from India. Because of the British control over India at that time, the opium trade fell predominantly into British hands and brought in an annual revenue of £ 1 million to the Indian government in 1832 (Endacott, 1973). In view of the outflow of silver to pay for the imported opium, the Chinese government prohibited the importation of opium and passed edicts against the smoking of opium. With the interference of the Chinese government, opium trade was conducted outside Canton; and Lintin Island in the Pearl River estuary became the centre of the trade. Despite the fact that opium-smoking was not allowed in China, the importation of opium increased dramatically from 200 chests of opium in the early eighteenth century to 40,000 chests in 1839. To stop the illegal trade of opium, a special Imperial Commissioner, Lin Tse-hsu, was sent to Canton by the Chinese government in 1839 to stop the entry of opium into China completely.

Lin was highly devoted to the Chinese government. The seriousness of his attitude in preventing the importation of opium and outflow of silver came as a source of surprise to the British opium merchants. On March 18, 1939, Lin ordered all opium merchants to surrender all opium in their posses-

sion and to sign a bond that they would not import any opium in the future on penalty of death (Endacott, 1973). To enforce these terms, Lin demanded that all British merchants had to remain in the factories without any privileges that were listed in the regulations. Although most merchants surrendered their opium on Lin's terms, Captain Charles Elliot, the British Superintendent of Trade, refused to obey most of Lin's commands and imported opium into China through Macao. He insisted that the opium in his possession belonged to the British government and saw no reason why he should sign the bond as demanded by Lin. Elliot's importation of opium through Macao and later through Hong Kong made Lin exceptionally determined to stop the entry of opium. The conflict between Lin and Elliot was worsened when a Chinese, Lin Wei-Hi, was killed by a British shore party in July, 1839. To punish the murderer, Commissioner Lin demanded that the murderer must be handed over to the Chinese judicial system. The British refused. In response to the lack of co-operation of the British, Commissioner Lin sent fire-rafts to the coast of Hong Kong and attacked the British ships. Being defeated by the British, the Chinese government was forced to sign the Treaty of Nanking with the British on August 29, 1842. With the treaty, Britain acquired the colony of Hong Kong Island as a port of access to the China trade (Wilkinson, 1983).

After the colonization of Hong Kong, John Bowring was appointed as the Superintendent of Trade in China and Governor of Hong Kong between 1854 and 1859. While his policy was liberal and humane to the Chinese in Hong Kong, he treated the Chinese government in a most high-handed way and was ready to use threat to secure concessions (Endacott, 1973). His hostilities towards the Chinese government brought to the Second Anglo-Chinese War in October 1856 when the Arrow, a Chinese-owned lorcha that was registered in Hong Kong, refused to haul down the British flag in the Chinese waters. Without its master on board, the Chinese government imprisoned the whole crew on a charge of piracy. Bowring demanded an apology from the Chinese government and insisted that the whole crew must be released. When the Chinese refused the demand, British forces were sent to Canton and a war began. To stop the war, the Treaty of Tsientsin was signed in June 1858 and the Kowloon Peninsula and the Stonecutters Island were ceded to Britain.

Sir Henry Blake, the governor of Hong Kong from 1898 to 1903, requested in June 1898 that all lands north to the Kowloon Peninsula together with Lamma and other smaller islands to be leased to Britain for a period of 99 years to check the expansion of the Russians and the power of the Franco-Russian alliance in the Far East during the turn of the century. Such a request was granted in the Convention of Peking in 1898 and the New Territories (i.e. lands north of

the Kowloon Peninsula and all islands requested in the Convention) was to return to the Chinese government in July 1, 1997. With this agreement, the British acquired the Hong Kong Island and the Kowloon Peninsula and leased the New Territories from the Chinese government.

To sum up, the cession of the Hong Kong Island and the Kowloon Peninsula as well as the lease of the New Territories to the British in the 19th century were results of the military weakness of the Chinese government and the eagerness of the British to open China to trade. From the Chinese government's point of view, the treaties of Nanking and Tientsin were unequal treaties imposed by the imperial powers which the rulers in China in that period were forced to accept (Wilkinson, 1983). Because they were unequal treaties, they had never been formally accepted by the Chinese government (especially, the Chinese Communist government). Since 1982, China's goal of terminating all unequal treaties and regaining Hong Kong to the sovereignty of the Chinese government have been clear. To the Chinese government, the year 1997 is meaningless and the return of Hong Kong to China 'should be settled in an appropriate way when the conditions are ripe' (Miners, 1975. p.15).

2.7 THE SITUATION OF HONG KONG TODAY

After the fall of the Gang of Four in China, the Chinese government, headed by Deng Xiao-ping, observed the importance of improving China's economy and using Hong Kong as an access to Western technology, marketing and financial methods, and other techniques that are crucial to China's economic development (Wilkinson, 1983). To modernize China so as to enable China to catch up with the technology in the 20th century, the policy of the Four Modernizations has been adopted. In this policy, China bears the goals of improving and modernizing agriculture, industry, national defence, and science and technology. Because of the Four Modernizations, China postponed all major decisions concerning the British rule in Hong Kong and did not include the future of Hong Kong on its immediate agenda until October 1982 (Cheng, 1982).

Diplomatic talks about the future of Hong Kong between Britain and China did not occur until September 1982 when the British Prime Minister, Mrs. Margaret Thatcher, visited China after the British victory in the Falklands. With the victory, the British Prime Minster believed that the Chinese government would renew the lease of the New Territories and a mutually satisfactory solution will be found to settle the sovereignty problem over Hong Kong. However, such a belief was met with severe rejections when expressed to the Chinese government. Displeased with the British attitude, the Chi-

nese government re-confirmed its position on October 1, 1982 and expressed that "China is not bound by these unequal treaties and that the whole of Hong Kong area will be recovered when the conditions are ripe" (Reported in the Daily Telegraph, October 1, 1982). Observing the military strength of China and the lack of support from the U.S. government,[4] the British government waited silently for China's decision on the future of Hong Kong and adopted the strategies of making full use of Hong Kong while Hong Kong was still under its control and preparing for the worst when Hong Kong is to be returned to China (Cheng, 1982).

The position of the British government was finally modified when the crisis of confidence rocked the entire society of Hong Kong in September 1983 (Tsim, 1984). Not knowing the long-term future of Hong Kong, the stability and prosperity of Hong Kong were severely affected at that period of time. The stock market panicked, the value of Hong Kong dollars dropped, and the rich withdrew their wealth to other countries where political security was guaranteed (Wilkinson, 1983; Tsim, 1984). In view of the crisis and China's violent objections to a "British presence" after 1997, Britain modi-

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[4] Unlike the conflict between Britain and Argentina in which U.S. generously supported her British ally, the U.S. government could not do so in the British-China conflict. For many years, the U.S. government has been trying to improve its relations with China for its market and for checking Soviet expansionism in Asia. Thus, her support for the British government would jeopardize the relations with China and the benefits that may be derived from the relations.

fied her position and committed only to secure the best deal for the people of Hong Kong in the negotiation so as to maintain the stability and prosperity of Hong Kong even after her withdrawal in July 1997.

A series of negotiations[5] on the political and economic future of Hong Kong after 1997 took place in Peking during the first eight months of 1984. Sir Geoffrey Howe, the British Foreign and Commonwealth Secretary, also made two trips to Peking during that time to help form drafts of agreements that were to be signed by both the British and the Chinese leaders by the end of the year. On September 26, 1984, a Joint Declaration between China and Britain on the future of Hong Kong was established and was approved by the Hong Kong Legislative Council on October 18, 1984; the Standing Committee of the Chinese National People's Congress on November 14, 1984; and the U.K. Parliament on December 5, 1984. With these approvals, the Declaration was finally signed in Peking by the Chinese Premier, Mr. Zhao Ziyang, and the British Prime Minister, Mrs. Margaret Thatcher, on December 19, 1984. On May 27, 1985, both British and Chinese officials held a ceremony in Peking to ratify the agreements listed in the declaration.

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[5] Most information on the negotiations between China and Britain is contained in Keesing's Contemporary Archives, 1984, 30, 33093-33097; and 31, 33655-33661.

[6] Most information on the Joint Declaration between China

With the Declaration,[6] Hong Kong will be a special administrative region of the People's Republic of China after June 30, 1997; and the laws that are currently in force in Hong Kong will remain basically unchanged for 50 years. During this period, Hong Kong can retain the social and economic systems as well as the lifestyle that its people enjoy today. It will also retain its status as an international financial centre and the Hong Kong dollars will continue to circulate and remain freely convertible. Furthermore, Hong Kong citizens will have the rights and freedoms that they have today; and these include the freedoms of speech and the press, assembly, travel, strike, religious belief, choice of occupation, and academic research. To maintain economic prosperity and social stability, the British government will administer Hong Kong during the transitional period between the date when the Joint Declaration is in effect and June 30, 1997; and the government of the People's Republic of China will give its cooperation if needed.

The gloom that prevailed Hong Kong since the negotiations between China and Britain in October 1982 appeared to dispel on the day that the Prime Minster of Britain and the Premier of China signed the Joint Declaration in December 1984. In general, the Joint Declaration was calmly accepted by the citizens of Hong Kong and trades in Hong Kong also gradually returned to normal. The Hang Seng index (an indicator of

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and Britain is contained in Keesing's Contemporary Archives, 1985, 31, 33655-33661.

the trading on the Hong Kong stock exchange) recovered from 746 on July 13, 1984 to over 1,000 on September 20, 1984. It continued to rise to 1,200 by the end of 1984 and eventually to 1,650 in mid-May 1985 (Keesing's Contemporary Archives, 1985). Many large-scale investment and construction projects also began and the people of Hong Kong also regained their confidence and optimism in the future of Hong Kong.

2.8 FACTORS RELATING TO THE ACHIEVEMENT-RELATED BEHAVIOR OF HONG KONG SCHOOL CHILDREN

2.8.1 A: Preparing for the Change in 1997 and the educational System of Hong Kong

Although China has promised the citizens of Hong Kong that their present life-style would be maintained after 1997, considerable changes have taken place in Hong Kong to prepare for the takeover by the Chinese government on July 1, 1997. Informal observations and casual conversations with parents in Hong Kong have found that the curriculum of the schools in Hong Kong have undergone changes. For example, the Chinese language has replaced English in the instruction of some subjects in elementary schools. Although the educational system remains the same, the use of the Chinese language in schools has substantially increased. Indeed, Mandarin (the official language in China) is taught in many schools.

At present, the educational system in Hong Kong follows that of the British. Schools are divided into government,

grant-aided, subsidized, and private. The primary course covers a period of six years, usually from age 6 to 12; and the secondary school covers a period of seven years, usually from age 12 to 19. There are two universities that provide post-secondary education: the Chinese University and the University of Hong Kong. To struggle through the educational system of Hong Kong, children must prepare to pass both public and school examinations; and passing all examinations is the chief concern of both parents and school children. For the sake of passing the entrance examination for Grade One of some good schools, most parents send their 2 1/2-years-old children to private nurseries and kindergartens to learn to read and write at an early age. As soon as children enter primary school, they are prepared to sit for and to pass three major examinations which they must face before entering university. At the end of Grade Six, all students must write the Secondary School Entrance Examination; at the end of form Five (equivalent to Grade 11 in Canada), they must write the General Certificate of Education Examination (equivalent to the "O" level of the British General Certificate of Education Examination); and at the end of Form Seven (Equivalent to Grade 13 in Canada), they must participate and excel in the matriculation examination (equivalent to the "A" level of the British General Certificate of Education Examination). All these examinations are held city-wide and passing these examinations with outstanding performances is the only sure way to enter good schools.

In the case of the matriculation examination, students must achieve distinctive performance in order to be accepted into one of the two universities in Hong Kong. For those who cannot or are unwilling to struggle through the examinations or the educational system, studying abroad becomes the alternative. In sum, surviving and excelling in academic competitions is the goal of the school children in Hong Kong.

Many school children in Hong Kong are being described or nicknamed as "book-worms". In Canada, visa and immigrant students from Hong Kong are often described as "well-disciplined" and are seen to have "superior work habits" (Ross, 1977, p.14). To investigate the reasons for the devotion to education and the industriousness of the Hong Kong students, Ross (1977) indicates that the British educational system and the effects of the Chinese cultural values in a highly competitive industralized society are the elements that convince children in Hong Kong that they must excel in school. To observe the impact of Chinese values on the children of Hong Kong, the family structure in Hong Kong must be examined.

2.8.2 B: The Family Structure in Hong Kong

Using an urban sample of 2,270 families from the 1971 census, Wong (1975) found that most families in Hong Kong were nuclear in nature. Unlike Barnet's (1961) study which

found that only 62.9% of the families in Hong Kong were conjugal in nature, Wong (1975) found that 73.5% of his sample were composed of conjugal families which contained a married couple and unmarried children. Although 24% of his sample were stem families, composing of grandparents, parents, and unmarried children, Wong (1975) found that the extended family structure was almost non-existent in Hong Kong (1.7%). Within the nuclear family, the father is the breadearner of the family and makes all major decisions concerning the family. Sons are expected to follow the footsteps of the father; and children of both sexes "inherit from the father in the form of educational opportunity, the placement of social status, or even a direct transference of family property and rights" (Wong, 1975, p.994). Furthermore, contacts with relatives (especially paternal relatives) are maintained by making frequent visits. Thus, while nuclear families have largely replaced the traditional Chinese family structure in Hong Kong, the traditional way of maintaining the family ties in the Chinese culture is still practiced. In general, maintaining family cohesion and solidarity, placing familial interest above all things, conforming to parental expectations, and bringing credits to the family are still observed by the Chinese children in Hong Kong. Consequently, with both the pressure to survive in a competitive society and the need to observe their own cultural values, Chinese children learn the importance of attaining academic excellence and occupational success in their lives.

2.8.3 C. Psychological Characteristics of the Chinese Students in Hong Kong

In a cross-cultural study on locus of control among Hong Kong Chinese, Chinese-American, and White-American high school students, Hsieh, Shybut, and Lotsof (1969) found Hong Kong Chinese students to be more external in their belief orientation than their Chinese-American and White-American students. Observing the cultural differences, Hsieh et al. (1969) indicated that the belief orientation of the Hong Kong Chinese students was a reflection of their cultural beliefs which viewed life as being fixed and determined by factors beyond their control. In addition to their external orientation, Chinese students also learn to control aggressive impulses so as to retain order and harmony within the group or family (Bond & Wang, 1981). However, when the harmony and order of the group is disrupted by an outside group, collective acts of aggression will be exercised toward the outside group. According to Bond and Wang (1981), collective acts of aggression are group serving and will be used when the existing hierarchical arrangement and intactness of the family are disrupted among the Chinese.

Group-goal conformity and collectivity of the Chinese students in Hong Kong have been observed empirically. In a cross-cultural study between American and Hong Kong Chinese students, Leung and Bond (1984) found that Chinese students were more likely to follow the equity norm in dividing the group reward than the American students. Such a trend was

particularly obvious when the pressure of social evaluation was removed and when the subjects were told that they were sharing the reward with someone whom they would not meet. In view of the findings, Leung and Bond (1984) indicate that by following the equity norm in all situations, the Chinese maintain group solidarity and a smooth relationship with both friends and strangers. To maintain harmony in interpersonal relationships, Chinese students also make self-effacing attributions in the case of success and such a tendency increases when they are in public situations. In a study which investigated the pattern of causal attribution in Hong Kong undergraduate students, Wan and Bond (1982) found that most of their subjects accepted personal responsibilities for failure and made self-effacing attributions about their success. Grouping these studies together, it appears that the Chinese cultural values are reflected not only in the social behaviors of the Chinese in Hong Kong but also in their academic and achievement behaviors.

In sum, like the Chinese-Canadian students, Chinese students in Hong Kong also place high values on education. They are expected to conform to authority and be loyal to their families. In the highly competitive industrialized society of Hong Kong, these values enable them to survive most of the pressures (e.g. the examination-oriented educational system) that are imposed on them. In general, Chinese students in Hong Kong are hard-working and have good work hab-

its in comparison to students in other countries (Ross, 1977).

2.9 CONCLUSION

While most Chinese still observe and practice their traditional values and beliefs, they also make changes in their styles of living so as to enable themselves to favorably and maximally adjust to their environments. In Canada, Chinese-Canadians choose and excel in majors and occupations that require analytic abilities and quantitative skills. In Hong Kong, parents prepare their children to read and write at an early age so that their children can do well in the educational system and to acquire the occupational skills that are needed by society. In both Canada and Hong Kong, Chinese parents appears to have carefully examined their environments and have prepared their children for their future. However, in the case of Hong Kong, an interesting question remains to be answered. Since Hong Kong will be returned to China in 1997, one must ask, how do parents of Hong Kong prepare their children for the changes that both they and their children have to face in eleven years time? Although China has promised Hong Kong citizens that Hong Kong will remain unchanged politically, socially, and economically, other changes (such as using the Chinese rather than the English language) must be performed in order to gradually integrate Hong Kong into the system of China. Consequently,

one must question, how will parents in Hong Kong help their children cope with these changes? To answer this question, the present study will examine the pattern of socialization of Hong Kong today. Thus, investigation of children's perception of their parents' behaviors and how their parents prepare them for the change of government in 1997 becomes a goal of this study.

Chapter III

THE PRESENT STUDY

The goals of the present study are threefold. They are: first, to investigate the generalizability of the achievement models so as to improve their applicability in explaining the achievement behavior of the Chinese people; second: to observe the effect of culture on causal attributions; and third: to observe the differences in socialization on children's perception of parent behavior among Hong Kong Chinese, Euro-Canadian, and Chinese-Canadian adolescents. To carry out these goals, the following hypotheses are included in this study.

3.1 PREDICTIONS AND HYPOTHESES

Information on questionnaires that are used to test the hypotheses of the present study is contained in Appendix A.

Hypotheses 1,2, and 3: Socialization

Both maternal and paternal socialization practices are studied. The Children Report of Parent Behavior Inventory (CRPBI) Form A is used to measure maternal socialization, and Form B to measure paternal socialization. CRPBI yields three aspects of information on socialization from adoles-

cents. The information includes: (1) perceived acceptance; (2) perceived psychological control; and (3) perceived firm control.

Hypothesis 1: Socialization and Ethnicity

A. Maternal Socialization:

(a) Perceived Acceptance from mother

(i) Euro-Canadian adolescents will score higher on perceived acceptance from mother in Form A of CRPBI than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on perceived acceptance from mother in Form A of CRPBI than Hong-Kong-Chinese adolescents.

(b) Perceived Psychological Control from mother

(i) Hong-Kong-Chinese adolescents will score higher on perceived psychological control from mother in Form A of CRPBI than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on perceived psychological control from mother in Form A of CRPBI than Euro-Canadian adolescents.

(c) Perceived Firm Control from mother

(i) Hong-Kong-Chinese adolescents will score higher on perceived firm control from mother in Form A of CRPBI than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on perceived firm control from mother in Form A of CRPBI than Euro-Canadian adolescents.

B. Paternal Socialization:

(a) Perceived Acceptance from father

(i) Euro-Canadian adolescents will score higher on perceived acceptance from father in Form B of CRPBI than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on perceived acceptance from father in Form B of CRPBI than Hong-Kong-Chinese adolescents.

(b) Perceived Psychological Control from father

(i) Hong-Kong-Chinese adolescents will score higher on perceived psychological control from father in Form B of CRPBI than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on perceived psychological control from father in Form B of CRPBI than Euro-Canadian adolescents.

(c) Perceived Firm Control from father

(i) Hong-Kong-Chinese adolescents will score higher on perceived firm control from father in Form B of CRPBI than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on perceived firm control from father in Form B of CRPBI than Euro-Canadian adolescents.

Hypothesis 2: Socialization and Gender

A. Maternal Socialization:

(a) Perceived Acceptance from mother

Male adolescents will score higher on perceived acceptance from mother in Form A of CRPBI than female adolescents.

(b) Perceived Psychological Control from mother

Female adolescents will score higher on perceived psychological control from mother in Form A of CRPBI than male adolescents.

(c) Perceived Firm Control from mother

Male adolescents will score higher on perceived firm control from mother in Form A of CRPBI than female adolescents.

B. Paternal Socialization:

(a) Perceived Acceptance from father

Male adolescents will score higher on perceived acceptance from father in Form B of CRPBI than female adolescents.

(b) Perceived Psychological Control from father

Female adolescents will score higher on perceived psychological control from father in Form B of CRPBI than male adolescents.

(c) Perceived Firm Control from father

Male adolescents will score higher on perceived firm control from father in Form A of CRPBI than female adolescents.

Hypothesis 3: Socialization and Age

A. Maternal Socialization:

(a) Perceived Acceptance from mother

Older adolescents will score higher on perceived acceptance from mother in Form A of CRPBI than younger adolescents.

(b) Perceived Psychological Control from mother

Older adolescents will score higher on perceived psychological control from mother in Form A of CRPBI than younger adolescents.

(c) Perceived Firm Control from mother

Younger adolescents will score higher on perceived firm control from mother in Form A of CRPBI than older adolescents.

B. Paternal Socialization:

(a) Perceived Acceptance from father

Older adolescents will score higher on perceived acceptance from father in Form B of CRPBI than younger adolescents.

(b) Perceived Psychological Control from father

Older adolescents will score higher on perceived psychological control from father in Form B of CRPBI than younger adolescents.

(c) Perceived Firm Control from father

Younger adolescents will score higher on perceived firm control from father in Form B of CRPBI than older adolescents.

Hypothesis 4: Perception of the Importance of Family Honor and Ethnicity, Gender, and Age-Group Differences

A Questionnaire on Adolescents Perception of the Importance of Family Honor is used to measure the perceived importance of family-honor in adolescents in the present study.

(A) Perception of the Importance of Family Honor and Ethnicity

(i) Chinese-Canadian adolescents will score higher on the perceived importance of family honor in the Questionnaire on Adolescent Perception of the Importance of Family Honor than Euro-Canadian adolescents.

(ii) Hong-Kong-Chinese adolescents will score higher on the perceived importance of family honor in the Questionnaire on Adolescent Perception of the Importance of Family honor than Chinese-Canadian adolescents.

(B) Perception of the Importance of Family Honor and Gender

Male adolescents will score higher on the perceived importance of family honor in the Questionnaire on Adolescent Perception of the Importance of Family Honor than female adolescents.

(C) Perception of the Importance of Family Honor and Age Group Difference

Older adolescents will score higher on the perceived importance of family honor in the Questionnaire on Adolescent Perception of the Importance of Family Honor than younger adolescents.

Hypothesis 5: Correlation between Locus of Control and Socialization, irrespective of ethnicity, gender and age-group difference

Locus of Control is measured by the Multicontent Locus of Control Measure (MLC) which classifies adolescents belief orientations into two categories, namely: (1) internality; and (2) externality.

A. Correlation between Maternal Socialization and Locus of Control.

(i) Perceived maternal acceptance will correlate positively with internality.

(ii) Perceived maternal psychological control will correlate negatively with internality.

(iii) Perceived maternal firm control will correlate negatively with internality.

B. Correlation between Paternal Socialization and Locus of Control

(i) Perceived paternal acceptance will correlate positively with internality.

(ii) Perceived paternal psychological control will correlate negatively with internality.

(iii) Perceived paternal firm control will correlate negatively with internality.

Hypothesis 6: Locus of Control and Ethnicity

(i) Euro-Canadian adolescents will score higher on internality in MLC than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on internality in MLC than Hong-Kong-Chinese adolescents.

Hypothesis 7: Locus of Control and Gender

Male adolescents will score higher on internality in MLC than female adolescents.

Hypothesis 8: Locus of Control and Age Difference

Older adolescents will score higher on internality in MLC than younger adolescents.

Hypotheses 9, 10 and 11: Adolescent Perception of Future Certainty

Adolescent perception of future certainty is measured by A Questionnaire on Adolescent Perception of Future-Certainty. This questionnaire examines adolescent perception of future-certainty from four aspects; namely: (1) the degree of certainty in attaining the chosen occupation ten years from the present; (2) expectation of major social and political changes ten years from the present; (3) taking social and political changes into consideration when planning for

the future; and (4) how social and political changes affect adolescents' overall future-planning. Ethnicity, gender, and age-group differences on each of these aspects are examined in order to obtain a clearer understanding of adolescent perception of future-certainty.

Hypothesis 9: Perceived Future-Certainty and Ethnicity

(A) Certainty in Attaining Chosen Occupation

(i) Chinese-Canadian adolescents will report higher certainty in A Questionnaire on Adolescent perception of Future-Certainty attaining chosen occupation than Euro-Canadian adolescents.

(ii) Euro-Canadian adolescents will report higher certainty in A Questionnaire on Adolescent Perception of Future-Certainty attaining chosen occupation than Hong-Kong-Chinese adolescents.

(B) Expectation of Social-Political Changes

(i) Hong-Kong-Chinese will expect more social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than Euro-Canadian adolescents.

(ii) Euro-Canadians will expect more social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than Chinese-Canadian adolescents.

(C) Considering Social-Political Changes in Future-Planning

(i) Hong-Kong-Chinese will report that they have considered more social-political changes in future-planning in A Questionnaire on Adolescent Perception of Future-Certainty than Euro-Canadian adolescents.

(ii) Euro-Canadians will report that they have considered more social-political changes in future-planning in A Questionnaire on Adolescent Perception of Future-Certainty than Chinese-Canadian adolescents.

(D) The Degree that Social-Political Changes have affected overall Future-Planning

(i) Hong-Kong-Chinese will report that their overall future-planning is more affected by social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than Euro-Canadian adolescents.

(ii) Euro-Canadians will report that their overall future-planning is more affected by social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than Chinese-Canadian adolescents.

Hypothesis 10: Perception of Future-Certainty and Gender

(A) Certainty in Attaining Chosen Occupation

Male adolescents will report higher certainty in A Questionnaire on Adolescent perception of Future-Certainty attaining chosen occupation than female adolescents.

(B) Expectation of Social-Political Changes

Males will expect more social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than female adolescents.

(C) Considering Social-Political Changes in Future-Planning

Males will report that they have considered more social-political changes in future-planning in A Questionnaire on Adolescent Perception of Future-Certainty than female adolescents.

(D) The Degree that Social-Political Changes have affected overall Future-Planning

Males will report that their overall future-planning is more affected by social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than female adolescents.

Hypothesis 11: Perception of Future-Certainty and Age Difference

(A) Certainty in Attaining Chosen Occupation

Older adolescents will report higher certainty in A Questionnaire on Adolescent perception of Future-Certainty attaining chosen occupation than younger adolescents.

(B) Expectation of Social-Political Changes

Older Adolescents will expect more social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than younger adolescents.

(C) Considering Social-Political Changes in Future-Planning

Older Adolescents will report that they have considered more social-political changes in future-planning in A Questionnaire on Adolescent Perception of Future-Certainty than younger adolescents.

(D) The Degree that Social-Political Changes have affected overall Future-Planning

Older adolescents will report that their overall future-planning is more affected by social-political changes in A Questionnaire on Adolescent Perception of Future-Certainty than younger adolescents.

Hypothesis 12: Ethnicity, Gender, and Age-Difference on Causal Attribution

Causal attribution is measured by the Trent Attribution Profile (TAP). This profile examines causal beliefs in terms of four conditions. The conditions are: (1) ability; (2) effort; (3) luck; and (4) task difficulty. The causal beliefs are: (1) self-success; (2) self-failure; (3) other-success; and (4) other-failure.

I. Causal Attribution and Ethnicity

(A) Attributing Self-Success to:

1. Ability:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-success to ability in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-success to ability in TAP than Euro-Canadian adolescents.

2. Effort:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-success to effort in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-success to effort in TAP than Euro-Canadian adolescents.

3. Luck:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-success to luck in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-success to luck in TAP than Euro-Canadian adolescents.

4. Task Difficulty:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-success to task difficulty in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-success to task difficulty in TAP than Euro-Canadian adolescents.

(B) Attributing Self-Failure to:

1. Ability:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-failure to lack of ability in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-failure to lack of ability in TAP than Euro-Canadian adolescents.

2. Effort:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-failure to lack of effort in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-failure to lack of effort in TAP than Euro-Canadian adolescents.

3. Luck:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-failure to bad luck in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-failure to bad luck in TAP than Euro-Canadian adolescents.

4. Task Difficulty:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of self-failure to high task difficulty in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of self-failure to high task difficulty in TAP than Euro-Canadian adolescents.

(C) Attributing Self-Success to:

1. Ability:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-success to ability in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-success to ability in TAP than Euro-Canadian adolescents.

2. Effort:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-success to effort in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-success to effort in TAP than Euro-Canadian adolescents.

3. Luck:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-success to luck in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-success to luck in TAP than Euro-Canadian adolescents.

4. Task Difficulty:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-success to task difficulty in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-success to task difficulty in TAP than Euro-Canadian adolescents.

(D) Attributing Other-Failure to:

1. Ability:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-failure to lack of ability in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-failure to lack of ability in TAP than Euro-Canadian adolescents.

2. Effort:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-failure to lack of effort in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-failure to lack of effort in TAP than Euro-Canadian adolescents.

3. Luck:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-failure to bad luck in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-failure to bad luck in TAP than Euro-Canadian adolescents.

4. Task Difficulty:

(i) Hong-Kong-Chinese adolescents will score higher on attribution of other-failure to high task difficulty in TAP than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will score higher on attribution of other-failure to high task difficulty in TAP than Euro-Canadian adolescents.

II. Causal Attribution and Gender

(A) Attributing Self-Success to:

1. Ability:

Male adolescents will score higher on attribution of self-success to ability in TAP than female adolescents.

2. Effort:

Male adolescents will score higher on attribution of self-success to effort in TAP than female adolescents.

3. Luck:

Male adolescents will score higher on attribution of self-success to luck in TAP than female adolescents.

4. Task Difficulty:

Male adolescents will score higher on attribution of self-success to task difficulty in TAP than female adolescents.

(B) Attributing Self-Failure to:

1. Ability:

Male adolescents will score higher on attribution of self-failure to lack of ability in TAP than female adolescents.

2. Effort:

Male adolescents will score higher on attribution of self-failure to lack of effort in TAP than female adolescents.

3. Luck:

Male adolescents will score higher on attribution of self-failure to bad luck in TAP than female adolescents.

4. Task Difficulty:

Male adolescents will score higher on attribution of self-failure to high task difficulty in TAP than female adolescents.

(C) Attributing Other-Success to:

1. Ability:

Male adolescents will score higher on attribution of other-success to ability in TAP than female adolescents.

2. Effort:

Male adolescents will score higher on attribution of other-success to effort in TAP than female adolescents.

3. Luck:

Male adolescents will score higher on attribution of other-success to luck in TAP than Chinese-Canadian adolescents.

4. Task Difficulty:

Male adolescents will score higher on attribution of other-success to task difficulty in TAP than female adolescents.

(D) Attributing Other-Failure to:

1. Ability:

Male adolescents will score higher on attribution of other-failure to lack of ability in TAP than female adolescents.

2. Effort:

Male adolescents will score higher on attribution of other-failure to lack of effort in TAP than female adolescents.

3. Luck:

Male adolescents will score higher on attribution of other-failure to bad luck in TAP than female adolescents.

4. Task Difficulty:

Male adolescents will score higher on attribution of other-failure to high task difficulty in TAP than female adolescents.

III. Causal Attribution and Age-Group Difference

(A) Attributing Self-Success to:

1. Ability:

Older adolescents will score higher on attribution of self-success to ability in TAP than younger adolescents.

2. Effort:

Older adolescents will score higher on attribution of self-success to effort in TAP than younger adolescents.

3. Luck:

Older adolescents will score higher on attribution of self-success to luck in TAP than younger adolescents.

4. Task Difficulty:

Older adolescents will score higher on attribution of self-success to task difficulty in TAP than younger adolescents.

(B) Attributing Self-Failure to:

1. Ability:

Older adolescents will score higher on attribution of self-failure to lack of ability in TAP than younger adolescents.

2. Effort:

Older adolescents will score higher on attribution of self-failure to lack of effort in TAP than younger adolescents.

3. Luck:

Older adolescents will score higher on attribution of self-failure to bad luck in TAP than younger adolescents.

4. Task Difficulty:

Older adolescents will score higher on attribution of self-failure to high task difficulty in TAP than younger adolescents.

(C) Attributing Other-Success to:

1. Ability:

Older adolescents will score higher on attribution of other-success to ability in TAP than younger adolescents.

2. Effort:

Older adolescents will score higher on attribution of other-success to effort in TAP than younger adolescents.

3. Luck:

Older adolescents will score higher on attribution of other-success to luck in TAP than Chinese-Canadian adolescents.

4. Task Difficulty:

Older adolescents will score higher on attribution of other-success to task difficulty in TAP than younger adolescents.

(D) Attributing Other-Failure to:

1. Ability:

Older adolescents will score higher on attribution of other-failure to lack of ability in TAP than younger adolescents.

2. Effort:

Older adolescents will score higher on attribution of other-failure to lack of effort in TAP than younger adolescents.

3. Luck:

Older adolescents will score higher on attribution of other-failure to bad luck in TAP than younger adolescents.

4. Task Difficulty:

Older adolescents will score higher on attribution of other-failure to high task difficulty in TAP than younger adolescents.

Hypothesis 13: Ethnicity, Gender, and Age Differences on Minimal Standard

Minimal standard is the most amount of time an adolescent would require to complete an achievement task. In this study, adolescents will be asked to complete four achievement-related tasks in a time-limit of 4-minutes each. Thus, the more time an adolescent needs to complete an achievement-related task, the lower the minimal standard. Conversely, the less time required, the higher the minimal standard.

(A) Minimal Standard and Ethnicity

(i) Hong-Kong-Chinese adolescents will set higher minimal standard in the achievement-related tasks than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will set higher minimal standard in the achievement-related tasks than Euro-Canadian adolescents.

(B) Minimal Standard and Gender

Male adolescents will set higher minimal standard in the achievement-related tasks than female adolescents.

(C) Minimal Standard and Age Difference

Older adolescents will set higher minimal standard in the achievement-related tasks than younger adolescents.

Hypothesis 14: Ethnicity, Gender, and Age Differences on Level of Aspiration

Level of aspiration is the least amount of time an adolescent would require to complete an achievement task. Thus, the more time an adolescent needs to complete an achievement-related task, the lower the level of aspiration; the less time required, the higher the level of aspiration.

(A) Level of Aspiration and Ethnicity

(i) Hong-Kong-Chinese adolescents will set higher level of aspiration in the achievement-related tasks than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will set higher level of aspiration in the achievement-related tasks than Euro-Canadian adolescents.

(B) Level of Aspiration and Gender

Male adolescents will set higher level of aspiration in the achievement-related tasks than female adolescents.

(C) Level of Aspiration and Age Difference

Older adolescents will set higher level of aspiration in the achievement-related tasks than younger adolescents.

Hypothesis 15: Ethnicity, Gender, and Age Differences on Expectancy

Expectancy is the exact amount of time an adolescent would require to complete an achievement task. Thus, the more time an adolescent exactly needs for the completion of an achievement-related task, the lower the expectancy; the less time, the higher the expectancy.

(A) Expectancy and Ethnicity

(i) Hong-Kong-Chinese adolescents will have higher expectancy in the achievement-related tasks than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will have higher expectancy in the achievement-related tasks than Euro-Canadian adolescents.

(B) Expectancy and Gender

Male adolescents will have higher expectancy in the achievement-related tasks than female adolescents.

(C) Expectancy and Age Difference

Older adolescents will have higher expectancy in the achievement-related tasks than younger adolescents.

Hypothesis 16: Ethnicity, Gender, and Age Differences on Realism in Expectancy Estimates

Realism in expectancy estimates is the discrepancy between level of aspiration and expectancy. Thus, the lesser the discrepancy, the higher the realism; and greater the discrepancy, the lower the realism.

(A) Realism in Expectancy Estimates and Ethnicity

(i) Hong-Kong-Chinese adolescents will be more realistic in expectancy estimates in the achievement-related tasks than Chinese-Canadian adolescents.

(ii) Chinese-Canadian adolescents will be more realistic in expectancy estimates in the achievement-related tasks than Euro-Canadian adolescents.

(B) Realism in Expectancy Estimates and Gender

Male adolescents will be more realistic in expectancy estimates in the achievement-related tasks than female adolescents.

(C) Realism in Expectancy Estimates and Age Difference

Older adolescents will be more realistic in expectancy estimates in the achievement-related tasks than younger adolescents.

METHOD

3.2 SUBJECTS

The entire sample was composed of 605 adolescents from 13 to 18 years of age from three ethnic groups; namely: (1) Hong Kong Chinese; (2) Chinese-Canadian; and (3) Euro-Canadian. Adolescents between the ages of 13 and 15 were classified as younger adolescents; and adolescents between the ages of 16 and 18 were classified as older adolescents. A total of 294 females and 310 males were studied in the present research. In this study, subjects from single-parent families were excluded; and questionnaires with missing information or inconsistency in answers (e.g. fixed responses) were discarded. In the Hong-Kong-Chinese sample, English words in the questionnaires that were beyond the level of the subjects were interpreted by the experimenter during the administration of the questionnaires. The exact meaning of each word was ensured firstly by translating the word from English into Chinese by the experimenter and by re-translating the word from Chinese into English by persons who had no knowledge of the study. Changes were made until 100% consistency between translations was achieved.

The Hong-Kong-Chinese Sample: Respondents were students attending summer schools, youth centres and the Boys' Scouts Association in Hong Kong. All subjects in this sample were born and raised in Hong Kong. There was a total of 114 males --- 62 of the younger age group and 52 of the older; and 102 females --- 56 of the younger and 46 of the older.

The Chinese-Canadian Sample: Respondents were from the suburban areas of Greater Vancouver in British Columbia. The majority of this sample was born and raised in Canada and the rest had also resided in Canada since early childhood. Parents of this sample were Chinese and were born and raised in China or Hong Kong. There was a total of 98 males --- 52 of the younger age group and 46 of the older; and 98 females --- 50 of the younger and 48 of the older.

The Euro-Canadian Sample: Respondents were collected from 4 schools in a rural school division located in north-western Manitoba due to the failure of obtaining permission to perform data-collection in the urban school divisions in Winnipeg. Thus, approximately 60% of the sample were of the Ukrainian origin. Although Ukrainian-Canadians, who have their distinct culture, do not belong to the majority Canadian culture, they are recruited as subjects for the Euro-Canadian sample as a result of necessity rather than choice. In this sample, all subjects were born in Canada with Euro-Canadian parents. There was a total of 99 males --- 50 of

the younger age group and 49 of the older; and 94 females --- 49 of the younger age group and 45 of the older. Table 1 gives the age and gender distribution of the three samples.

Table 1

Distribution of Subjects in the Present Study

		Age Groups		
Ethnicity	Gender	Younger	Older	Total
Hong Kong	Male	62	52	114
Chinese	Female	56	46	102
Chinese	Male	52	46	98
Canadian	Female	50	48	98
Euro-	Male	50	49	99
Canadian	Female	49	45	94
	Total	320	287	605

Note: Younger age group composes of adolescents from ages 13 to 15
and older age group, from 16 to 18.

3.3 VARIABLES

3.3.1 Independent Variables

1) Ethnicity --- Hong Kong Chinese, Chinese-Canadian, and 3rd generation Euro-Canadian;

2) gender;

3) age group differences (younger adolescents: ages 13 to 15; older adolescents: ages 16 to 18).

3.3.2 Dependent Variables

1) socialization practice --- (a) adolescent's perception of maternal acceptance, psychological autonomy, and firm control; and (b) adolescent's perception of paternal acceptance, psychological autonomy, and firm control;

2) Locus of control --- internalilty and externality;

3) causal attribution --- the degree of attributing self-success, self-failure, other-success, and other failure to ability, effort, luck, and task difficulty;

4) adolescents' perception of the certainty or uncertainty of their future in terms of 4 aspects: (a) certainty of attaining chosen occupation ten years from present, (b) expectation of social and political changes ten years from present, (c) considering social-political changes in future-planning, and (d) the degree that social-political changes have affected overall future-planning;

5) adolescent perception of the importance of family honor; and

6) achievement behavior --- (a) minimal standard, (b) level of aspiration, (c) expectancy, and (d) realism in expectancy estimates.

3.4 INSTRUMENTS

3.4.1 Socialization

Schludermann and Schludermann's (1970) version of Children's Report of Parent Behavior Inventory (CRPBI), employed to measure socialization, was designed to assess both parent's behavior from the child's point of view. This scale has 3 factors; namely: 1) Parental Acceptance vs. Rejection; 2) Psychological Autonomy vs. Psychological Control; and 3) Firm Control vs. Lax Control. The economy and demonstrated applicability of this version of the CRPBI scale (Appendix B) on independent samples and cross-cultural studies formed the rationale for choosing it to measure socialization in this study.

3.4.2 Locus of Control

Abrahamson's (1977) Multicontent Locus of Control Measure (MLC) carries an equal number of personal, general, internal, and external statements. It was designed specifically to assess locus of control in adolescents. This scale (Appendix C) has a test-retest reliability of .834.

3.4.3 Causal Attribution

Wong, Watters, and Sproule's (1978) Trent Attribution Profile (TAP) was chosen to assess causal attribution because it considered the impact of culture on the development of causal attribution and locus of control and identified the belief systems of human beings in terms of a dual-dimensional view of control (i.e. the locus of causality--- assignment of causality to various loci; and locus of control--- assignment of responsibility regardless of behavioral instrumentality). This scale contained 12 questions identifying how human beings attribute self-success, self-failure, other-success, and other-failure to factors including: (a) ability, (b) effort, (c) luck, and (d) task difficulty. The Internal-External dimension of this scale is correlated positively with Rotter's I-E Scale ($r=.51$, $p<.001$) and its test-retest reliability coefficient ranged from .572 to .742 ($p<.001$).

(See Appendix D for the complete scale.)

3.4.4 Perception of the Importance of the Family Honor

Questionnaire on the Perception of the Importance of Family Honor (Appendix E) was designed to assess subjects' perceptions of their family honor. A total of 5 questions were asked to assess how adolescents observed their family honor in different situations. A maximum of 28 points would be attained if adolescents perceived their family honor with extreme importance. A score of 5 points would indicate unconcern of family honor.

3.4.5 Adolescent Perception of Future-Certainty

The degree of certainty adolescents perceived in their future was assessed by "A Questionnaire on Adolescent Perception of the Certainty of their Future" (Appendix F). In this questionnaire, information on adolescents' perception of future-certainty is gathered mainly from four aspects; namely: (a) degree of certainty in attaining chosen occupation ten years from the present; (b) expectation of social-political changes ten years from the present; (c) considering social-political changes in future-planning; and (d) the degree that social-political changes have affected overall future-planning.

3.4.6 Achievement-Related Behavior

In this study, achievement behavior was measured by asking subjects to copy 2 solvable and 2 unsolvable figures without lifting the pencil from the paper and without tracing a line twice (Appendix G contains these figures) These figures were individually presented and each subject was given a practice trial (Appendix H contains the practice trial). In this study, the 2 solvable figures were presented first followed by the 2 unsolvable figures. Each subject was given 4 minutes per figure. Information pertaining to success or failure condition was presented prior to the presentation of the 2nd solvable and 2nd unsolvable puzzles. Each subject was interviewed prior to each figure presentation so as to obtain information relating to achievement behavior (i.e. minimal standard, level of aspiration, expectancy, and attainment value). When each puzzle was completed, each subject was also be asked to attribute the performance outcomes.

Administration of the Experiment: This experiment was individually administered to each subject after the subject had completed all questionnaires (i.e. CRPBI, MLC, TAP, Questionnaire on Adolescent Perception of Future-Certainty Questionnaire on the Perception of the Importance of Family Honor). Subjects were subjected randomly to either a success or a failure condition in the 2nd solvable and the 2nd

unsolvable puzzles. Thus, a total of 4 conditions were derived from the combination (i.e. 1. Success-Success: subject received success condition in both solvable and unsolvable puzzles; 2. Success-Failure: received success condition in the solvable puzzle but failure condition in the unsolvable puzzle; 3. Failure-Success: received failure condition in the solvable puzzle but success condition in the unsolvale puzzle; and 4. Failure-Failure: received failure condition in both solvable and unsolvable puzzles.)

A) Set-up: A table and chair were set up in the experimental situation.

B) Experimental Sequence: After the subject had seated on the chair, the following procedure were performed.

1. Practice Trial: Instructions were as follows:

"It is a general intelligence task that I am going to ask you to do. Because how well you perform is important, I am going to give you a chance to practise it first. (Pointing at the figure on the table) I will like you to copy this figure onto this paper (pointing at the blank paper) without lifting the pencil from the paper and without tracing a line twice. You are given 4 minutes to do so. Do you have any questions ?

2. The Solvable-Figure Session:

"Now that you have an idea of how to perform this kind of task, I will give you more figures to do. (Pointing at a solvable figure) Here is a figure that I would like you to do. Again, you will be given 4 minutes to do so. But before you start, I would like you to answer some questions.

1. What is the maximum amount of time that you think you'll need to complete this task ? (The answer will be used as an indicator of the subject's minimal standard.)

2. What is the minimum amount of time that you think you'll need to complete the task ? (The answer will be used as an indicator of the subject's level of aspiration).

3. Please tell me how many minutes you think you actually need to complete the task. (The answer will be used as an indicator of the subject's expectancy.)

4. Since this is a form of intelligence test and is seen as important by many people, please tell me how important this task is to you. (The answer will be used as an indicator of the subject's attainment value.)"

High level of aspiration, high expectancy, high attainment value, high minimal standard, and little discrepancy between expectancy and level of aspiration are indicators that the subject is a high achiever. Minimal discrepancy between expectancy and level of aspiration indicated that

the subject was realistic in the level of aspiration in achievement situation.

After the answers were recorded, the subject was asked to perform the task. The actual amount of time the subject used for the completion of the task was recorded.

Interview/Experimenter-Manipulation Stage:

In this stage the following procedures were performed:

A). Interview on Subject's Attribution of Performance:

When the subject finished copying the figure or when the subject reached the 4 minute time limit, the following questions were asked:

1. How satisfied are you with your performance ? (Subject's comments on his/her performance will be recorded.)

2. How much do you think your performance is due to:

a) luck ? (The answer will indicate how much does the subject attribute his/her performance to luck.)

b) your skill in doing this kind of task ? (The answer will indicate how much does the subject attribute his/her performance to ability.)

c) your effort in performing the task ? (The answer will indicate how much does the subject attribute his/her performance to effort.)

d) the nature of the task ? (The answer will indicate how much does the subject attribute his/her performance to task difficulty.)

B). Experimenter-Manipulation: Presentation of the 2nd Solvable Figure

Success Condition:

The experimenter said:

"I am happy to tell you that your performance is above average. I would like you to perform again for the second time. (Pointing at the 2nd solvable figure) Now, I am going to give you another figure. It is similar to the one that you have just done. Again, you will be given 4 minutes. Do you have any questions ?

Before you start, I want you to tell me what is the maximum amount of time that you think you'll need to complete the task ? (The answer will provide information on how much the subject shifts his/her minimal standard as a result of previous success.)

What is the minimum amount of time that you think you'll need to complete the task ? (The answer will provide information on how much the subject shifts his/her level of aspiration as a result of previous success.)

Please tell me how many minutes you think you actually need to complete the task.(The answer will provide information on how much the subject shifts his/her expectancy after previous success.)"

After all the answers were recorded, the subject was presented with the 2nd solvable figure and the subject was also timed.

Failure Condition:

The experimenter said:

"I am sorry that your performance is below average. I would like you to perform again for the second time. (Pointing at the 2nd solvable figure) Now, I am going to give you another figure. It is similar to the one that you have just done. Again, you will be given 4 minutes. Do you have any questions ?

Before you start, I want you to tell me what is the maximum amount of time that you think you'll need to complete the task ? (The answer will provide information on how much the subject shifts his/her minimal standard as a result of previous failure.)

What is the minimum amount of time that you think you'll need to complete the task ? (The answer will provide information on how much the subject shifts his/her level of aspiration as a result of previous failure.)

Please tell me how many minutes you think you actually need to complete the task.(The answer will provide information on how much the subject shifts his/her expectancy after previous failure.)"

After all the answers were recorded, the subject was presented with the 2nd solvable figure and the subject was also timed.

Interview: Subject's Attribution of Performance after the Success/Failure Manipulation

Interview after the Success Condition:

When the subject finished copying the figure, the following was asked.

"How much do you think your successful performance is due to:

a) luck ? (The answer will indicate how much does the subject attribute his/her performance to luck after success.)

b) your skill in doing this kind of task ? (The answer will indicate how much does the subject attribute his/her performance to ability after success.)

c) your effort in performing the task ? (The answer will indicate how much does the subject attribute his/her performance to effort after success.)

d) the nature of the task ? (The answer will indicate how much does the subject attribute his/her performance to task difficulty after success.)"

Interview after the Failure Condition:

"How much do you think your below-average performance is due to:

a) luck ? (The answer will indicate how much does the subject attribute his/her performance to luck after failure.)

b) your skill in doing this kind of task ? (The answer will indicate how much does the subject attribute his/her performance to ability after failure.)

c) your effort in performing the task ? (The answer will indicate how much does the subject attribute his/her performance to effort after failure.)

d) the nature of the task ? (The answer will indicate how much does the subject attribute his/her performance to task difficulty after failure.)"

3. The Unsolvable-Figure Session: The instructions and the questions asked in this session were the same with those in the Solvable-Figure Session.

Summary: Achievement behavior was measured by the number of minutes the subject used for the completion of each task presented. The procedures of this experimental session can best be expressed as follows:

1. The practice trial stage.

2. The solvable figure session.

a) Subject was presented with the 1st solvable puzzle (4 minutes were given).

b) Subject was asked to perform the 2nd solvable puzzle after the presentation of the success or failure condition.

3. The unsolvable figure session.

a) Subject was presented with the 1st unsolvable puzzle.

b) Subject was asked to perform the 2nd unsolvable puzzle after the presentation of the success or failure condition.

3.5 PROCEDURE

Two experimental sessions were conducted.

A) Paper-and Pencil Test: Respondents were given a face sheet (Appendix I) requesting them to fill out the name, grade, sex, age, and place of birth. In the case of Chinese-Canadian subjects, their place of origin and length of residency in Canada will be asked. Along with the face sheet, CRPBI, MLC, Questionnaire on the Perception of the Impor-

tance of Family Honor, A Questionnaire on Adolescent Perception of the Certainty of their Future, and the TAP were also presented.

B) Achievement-Behavior Session: This session was carried out after the presentation of the first session. As time and space arrangements had to be set up before this session could be performed, a loss of subjects occurred. Some subjects refused to participate due to their disinterest in the research after the first session. Consequently, 535 of the entire sample participated in the achievement-behavior session. All subjects participated in this session were debriefed after their participation in the experiment. They were informed of the true nature of the achievement tasks (i.e. the fact that the unsolvable puzzles were impossible to solve) and were reassured of their capability. They were also thanked for their participation.

Chapter IV

RESULTS

4.1 SOCIALIZATION, PERCEPTION OF FAMILY-HONOR-IMPORTANCE, LOCUS OF CONTROL, ADOLESCENT PERCEPTION OF FUTURE-CERTAINTY, AND CAUSAL ATTRIBUTION

Data of socialization practice (CRPBI), perception of the importance of family-honor (FAM), locus of control (MLC), adolescent perception of future-certainty, and causal attribution (TAP) were subjected to a series of three way (ethnicity, gender, age) analyses of variance procedures. In these analyses, the factors or independent variables were: (1) ethnicity (Hong-Kong-Chinese, Chinese-Canadian, and Euro-Canadian); (2) gender (female, male); and (3) age-group (younger adolescents, older adolescents). Because of the large sample size, a p-value of <.001 (i.e. $p<.001$) was used as a criterion of statistical significance. Furthermore, an Omega Squared was also calculated on each significant finding so as to ascertain the strength of association between the independent and dependent variables. Omega Squared is an index of the amount of variance accounted for by the significant effect (e.g. Omega Squared of ethnicity=.04 indicates that about 4% of the variance is due to ethnicity). For each significant ethnicity difference (i.e.

ethnicity *F*-ratio), the Scheffe post-hoc *t*-test (thereafter referred to as *t*-test) was performed in order to identify specific groups which significantly differed from each other at the $p<.001$ level.

Hypotheses 1,2, and 3. Ethnic, Gender, and Age Differences in Socialization

A) Maternal Socialization Practice

(a) The Acceptance-Rejection Dimension (A-R)

Results relating to this dimension are in Table 2.

Of the three main effects (i.e. ethnicity, gender, and age-group), only the ethnicity effect was significant with $F(2,604)=13.67$, $p<.001$, Omega Squared=0.04. Euro-Canadian adolescents reported that they are receiving the most acceptance from their mothers, Chinese-Canadian were intermediate, and Hong-Kong-Chinese the least. Of the three comparisons, only the Euro-Canadian group and the Hong-Kong-Chinese group differed significantly with $t(367)=4.94$, $p<.001$.

(b) Psychological Control-Psychological Autonomy (PA-PC)

Table 3 contains results relating to this dimension.

TABLE 2

Perceived Acceptance-Rejection by Mother (CRPBI)

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	20.36	2.93
			OLDER	22.15	2.48
		MALE	YOUNGER	21.17	2.39
			OLDER	21.27	3.00
CHINESE	CANADIAN	FEMALE	YOUNGER	21.54	2.52
			OLDER	22.97	2.37
		MALE	YOUNGER	20.49	3.22
			OLDER	22.07	2.22
EURO	CANADIAN	FEMALE	YOUNGER	21.98	3.87
			OLDER	22.67	4.09
		MALE	YOUNGER	23.33	2.99
			OLDER	22.89	2.50

Note: The A-R dimension has a minimum score of 10 (Rejection), a neutral point of 20, and a maximum score of 30 (Acceptance).

ANOVA's Results

Ethnicity main effect: $F(2,604)=13.67$ $p<.001$ Omega Squared=.04

Euro-Canadian adolescents reported most acceptance, Chinese-Canadian were intermediate, Hong-Kong-Chinese were least. Only Euro-Canadian and Hong-Kong-Chinese groups differed significantly with $t(367)=4.94$, $p<.001$.

TABLE 3

Perceived Psychological Autonomy-Control by Mother (CRPBI)

				MEAN	S. D.
HONGKONG CHINESE	CHINESE	FEMALE	YOUNGER	19.43	2.40
			OLDER	19.92	2.78
		MALE	YOUNGER	20.36	2.36
			OLDER	20.97	3.09
CHINESE	CANADIAN	FEMALE	YOUNGER	18.26	2.65
			OLDER	18.96	2.64
		MALE	YOUNGER	19.33	2.50
			OLDER	19.96	2.58
EURO	CANADIAN	FEMALE	YOUNGER	17.81	3.44
			OLDER	17.27	3.55
		MALE	YOUNGER	17.96	2.75
			OLDER	16.32	3.25

Note: The PA-PC dimension has a minimum score of 10 (psychological autonomy), a neutral point of 20, and a maximum score of 30 (psychological control).

ANOVA's Results

Ethnicity main effect: $F(2,604)=50.82$, $p<.001$, Omega Squared=.14

Hong-Kong-Chinese reported most psychological control, Chinese-Canadian were intermediate, and Euro-Canadian were least. All three groups differed significantly from one another at $p<.001$. Hong-Kong-Chinese vs. Euro-Canadian with $t(370)=9.42$, Chinese-Canadian vs. Euro-Canadian with $t(366)=5.82$, and Hong-Kong-Chinese vs. Chinese-Canadian with $t(408)=4.01$.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=50.82$, $p<.001$, Omega Squared=0.14. The Euro-Canadian group reported to have the least psychological control from their mothers, Chinese-Canadian were intermediate, and Hong-Kong-Chinese the most. The t-tests showed that all groups (Hong-Kong-Chinese vs. Chinese-Canadian with $t(408)=4.01$ Hong-Kong-Chinese vs. Euro-Canadian with $t(370)=9.42$ Chinese-Canadian vs. Euro-Canadian with $t(366)=5.82$) were significantly different from one another at the $p<.001$ level.

(c) Firm Control-Lax Control (FC-LC)

Table 4 contains results relating to this dimension.

Of the three main effects, only the age effect was significant with $F(1,604)=162.44$, $p<.001$, Omega Squared=0.21. Younger adolescents reported more firm control from their mothers than did older adolescents.

B) Paternal Socialization Practice

(a) Acceptance-Rejection Dimension (A-R)

Table 5 contains results relating to this dimension.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=8.50$, $p<.001$, Omega Squared=0.02. Euro-Canadian adolescents reported more acceptance by their fathers than did the two Chinese groups.

TABLE 4

Perceived Firm-Control/Lax-Control by Mother (CRPBI)

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	22.19	2.29
			OLDER	19.30	2.13
		MALE	YOUNGER	22.23	2.32
			OLDER	19.29	2.20
CHINESE	CANADIAN	FEMALE	YOUNGER	21.30	2.94
			OLDER	18.77	1.47
		MALE	YOUNGER	21.03	2.22
			OLDER	18.86	2.10
EURO	CANADIAN	FEMALE	YOUNGER	21.69	3.08
			OLDER	19.42	3.31
		MALE	YOUNGER	21.96	3.34
			OLDER	18.77	2.91

Note: The FC-LC dimension has a minimum score of 10 (lax control), a neutral point of 20, and a maximum score of 30 (firm control).

ANOVA's Results

Age-group main effect: $F(1,604)=162.44$ $p<.001$ Omega Squared=.21

Younger adolescents reported higher firm control, older adolescents lower.

TABLE 5

Perceived Acceptance/Rejection by Father (CRPBI)

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	19.75	3.08
			OLDER	20.95	3.05
		MALE	YOUNGER	19.78	2.74
			OLDER	22.29	2.94
CHINESE	CANADIAN	FEMALE	YOUNGER	19.96	2.49
			OLDER	21.38	2.30
		MALE	YOUNGER	19.81	2.91
			OLDER	21.49	2.23
EURO	CANADIAN	FEMALE	YOUNGER	22.28	3.70
			OLDER	20.81	4.75
		MALE	YOUNGER	22.80	3.81
			OLDER	21.07	3.88

Note: The A-R dimension has a minimum score of 10 (rejection), a neutral point of 20, and a maximum score of 30 (acceptance).

ANOVA's Results

Ethnicity main effect: $F(2,604)=8.50$ $p<.001$ Omega Squared=.02

Euro-Canadians reported most acceptance from fathers, Hong-Kong-Chinese and Chinese-Canadian reported similar levels of acceptance. The t-tests showed that none of the three groups were significantly different from each other at the $p<.001$ level.

receive more acceptance from fathers. Both Chinese-Canadian and Hong-Kong-Chinese groups reported similar level of acceptance from fathers. However, *t*-tests showed that none of the three ethnic groups were significantly different from one another at the $p<.001$ level.

(b) Psychological Autonomy-Psychological Control (PA-PC)

Table 6 contains results relating to this dimension.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=45.53$, $p<.001$, Omega Squared=0.13. Euro-Canadian adolescents reported to have the least psychological control, Chinese-Canadians intermediate, and Hong-Kong-Chinese the most. The *t*-tests showed that the Hong-Kong-Chinese group differed significantly from the Euro-Canadian group with $t(380)=8.61$, $p<.001$, and the Chinese-Canadian group differed significantly from the Euro-Canadian group with $t(365)=6.93$, $p<.001$.

(c) Firm Control-Lax Control (FC-LC)

Table 7 contains results relating to this dimension.

Of the three main effects, only the age effect was significant with $F(1,604)=111.17$, $p<.001$, Omega Squared=0.15. Younger adolescents perceived more paternal control by physical means than did older adolescents.

TABLE 6

Perceived Psychological Autonomy/Control by Father (CRPBI)

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	19.34	3.49
			OLDER	19.27	2.90
		MALE	YOUNGER	19.65	2.73
			OLDER	19.46	2.92
CHINESE	CANADIAN	FEMALE	YOUNGER	18.09	3.08
			OLDER	18.98	2.54
		MALE	YOUNGER	19.49	2.95
			OLDER	18.92	2.30
EURO	CANADIAN	FEMALE	YOUNGER	15.83	2.67
			OLDER	16.34	3.99
		MALE	YOUNGER	16.95	3.42
			OLDER	17.48	3.64

Note: The PA-PC dimension has a minimum score of 10 (psychological autonomy), a neutral point of 20, and a maximum score of 30 (psychological control).

ANOVA's Results

Ethnicity main effect: $F(2,604)=45.53$, $p<.001$, Omega Squared=.13

Hong-Kong-Chinese reported most psychological control from father, Chinese-Canadian were intermediate, and Euro-Canadian were least. Hong-Kong-Chinese differed significantly from Euro-Canadians with $t(380)=8.61$, $p<.001$. Chinese-Canadians differed significantly from Euro-Canadians with $t(365)=6.93$, $p<.001$.

TABLE 7

Perceived Firm-Control/Lax-Control by Father (CRPBI)

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	21.62	3.18
			OLDER	19.51	2.07
		MALE	YOUNGER	22.61	2.71
			OLDER	19.15	1.74
CHINESE	CANADIAN	FEMALE	YOUNGER	21.19	3.07
			OLDER	19.81	1.98
		MALE	YOUNGER	22.00	2.88
			OLDER	17.72	1.98
EURO	CANADIAN	FEMALE	YOUNGER	20.81	3.70
			OLDER	19.85	3.64
		MALE	YOUNGER	22.39	3.35
			OLDER	19.61	3.98

Note: The FC-LC dimension has a minimum score of 10 (lax control), a neutral point of 20, and a maximum score of 30 (firm control).

ANOVA's Results

Age-group main effect: $F(1,604)=111.17$ $p<.001$ Omega Squared=.15

Younger adolescents reported more paternal firm control than older adolescents.

Table 8 contains a summary of all statistically significant results of CRPBI.

Relations between CRPBI Factors

To gain a clearer understanding on the way adolescents perceived socialization practice, factors of the CRPBI questionnaire were correlated. Three correlational trends were obtained in the present study.

1. The exercise of psychological control along with firm control: There was a positive correlation between Psychological Control and Firm Control in this study. The correlation of r=.37 between maternal Psychological Control and maternal Firm Control; and the correlation of r=.36 between paternal Psychological Control and paternal Firm Control indicated that adolescents who perceive to have received more psychological autonomy from their parents also tended to perceive that they received less firm control from them. Conversely, adolescents who perceived to have received more psychological control from their parents also perceived to have received more firm control from their parents.

Table 8

F Values of all CRPBI Factors

Variables	A-R Mo	A-R Fa	PA-PC Mo	PA-PC Fa	FC-LC Mo	FC-LC Fa
age					F=162.4 =.21 (Y=High FC; O= low FC for both Mo and fa)	F=111.2 =.15
Ethnicity	F=13.67 =.04 (Most Mo & Fa Accep for EC; least for HKC; CC in middle)	F=8.5 =.02	F=50.82 =.14 (Most Mo & Fa PC for HKC; least for EC; & CC in middle)	F=45.53 =.13		

Note: Only significant F-values at p<.001) are reported. The number under the F-value is the corresponding Omega Squared value.

Abbreviations: EC=Euro-Canadian, HKC=Hong-Kong-Chinese, CC=Chinese-Canadian. Mo=Mother, Fa=Father. Y=Younger adolescents, O=Older adolescents. Accep=Acceptance, PC=Psychological Control, FC=Firm Control.

2. The exercise of psychological control from both parents: A positive correlation of r=.45 between the maternal and the paternal Psychological Control dimensions showed that adolescents who reported to receive high psychological control from their mothers also reported to receive high psychological control from their fathers.

3. The exercise of firm control from both parents: A positive correlation of r=.41 between the paternal and the maternal Firm Control-Lax Control dimensions showed that adolescents who reported to receive firm control from their mothers also reported to receive firm control from their fathers.

Hypothesis 4: Perception of the Importance of Family Honor

Table 9 contains results relating to this hypothesis.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=54.69$, $p<.001$, Omega Squared=0.15. This result showed that of the three ethnic groups, the Chinese-Canadian group perceived the family-honor as of most importance, the Euro-Canadian group intermediate, and Hong-Kong- Chinese least. The t-tests showed that

TABLE 9

Perception of the Importance of Family Honor

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	19.35	3.68
			OLDER	20.79	3.46
		MALE	YOUNGER	18.24	3.69
			OLDER	20.23	2.73
CHINESE	CANADIAN	FEMALE	YOUNGER	23.20	4.34
			OLDER	24.46	2.69
		MALE	YOUNGER	22.52	3.96
			OLDER	23.33	2.92
EURO	CANADIAN	FEMALE	YOUNGER	22.43	3.54
			OLDER	22.46	3.57
		MALE	YOUNGER	22.22	3.24
			OLDER	19.82	5.32

Note: In this scale, 28 is the maximum score and indicates high concern of family honor. 7 is the minimum score and indicates unconcern of family honor.

ANOVA's Results

Ethnicity main effect: $F(2,604)=54.69$, $p<.001$, Omega Squared = .15

Chinese-Canadians perceived family-honor as of most important, Euro-Canadians were intermediate, Hong-Kong-Chinese were least. All three groups differed significantly from one another at the $p<.001$ level. Hong-Kong-Chinese vs. Chinese Canadian with $t(405)=10.79$, Hong-Kong-Chinese vs. Euro-Canadian with $t(380)=5.67$, and Chinese-Canadian vs. Euro-Canadian with $t(379)=4.16$.

all three groups differed significantly from one another at the $p<.001$ level. The Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(405)=10.79$, and from the Euro-Canadian group with $t(380)=5.67$. The Chinese-Canadian group differed significantly from the Euro-Canadian group with $t(379)=4.16$.

Hypothesies 5: Correlation between Locus of Control and Socialization

Table 10 contains results on locus of control in the present study. Table 10A contains information on sample size and age groups of the Euro-Canadian and Chinese-Canadian subjects in a previous study (i.e. Mak, 1983). Table 10B contains results on locus of control in that study.

Pearson-product-moment correlation analysis was conducted on the Multicontent Locus of Control Measure (MLC) and CRPBI. This analysis revealed that there was an absence of significant correlation between locus of control and socialization. MLC measured adolescents' locus of control from the areas of: politics, achievement, education, interpersonal relationships, and social responsibility; and CRPBI measured socialization in terms of parent-child interactions in different home-life situations.

TABLE 10

Scores of the Multi-Content Locus of Control Measure (MLC)

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	46.84	7.50
			OLDER	46.34	7.10
		MALE	YOUNGER	44.03	7.85
			OLDER	44.65	7.08
CHINESE	CANADIAN	FEMALE	YOUNGER	48.72	6.14
			OLDER	47.54	6.49
		MALE	YOUNGER	46.42	7.42
			OLDER	49.00	4.40
EURO	CANADIAN	FEMALE	YOUNGER	45.12	8.95
			OLDER	47.33	8.53
		MALE	YOUNGER	44.46	10.15
			OLDER	46.94	9.24

Note: 50 was the cut-off point. Scores above 50 was indicative of internality, and below 50 was externality.

ANOVA's Results

There were no significant effects obtained.

Table 10A

Age Group and Sample Size in the Previous Study (Mak, 1983)

		Age Groups		
Ethnicity	Gender	Younger	Older	Total
Chinese	Male	20	22	42
Canadian	Female	23	23	46
Euro-	Male	30	20	50
Canadian	Female	23	25	48
	Total	96	90	186

Note: Younger age group included adolescents from ages 13 to 15. Older age group included adolescents from ages 16 to 18.

TABLE 10B

Scores of the Multi-Content Locus of Control Measure (MLC) in the Previous Study (Mak, 1983)

				MEAN	S. D.
CHINESE	CANADIAN	FEMALE	YOUNGER	48.91	6.54
			OLDER	44.87	8.28
		MALE	YOUNGER	44.65	9.17
			OLDER	46.39	6.33
EURO	CANADIAN	FEMALE	YOUNGER	48.17	8.81
			OLDER	48.72	8.02
		MALE	YOUNGER	44.23	9.51
			OLDER	45.15	9.40

Note: 50 was the cut-off point. Scores above 50 was indicative of internality, and below 50 was externality.

ANOVA's Results

There were no significant effects obtained.

Hypotheses 6 to 8: Ethnicity, Gender, and Age on Locus of Control

The analysis-of-variance procedure on the MLC data showed that there was no main effects in locus of control. An examination of the data showed that although all three ethnic groups were bilocal in the locus of control, considerable differences in the extent of bilocality existed amongst them. In the present study, Hong-Kong-Chinese adolescents were most external, Euro-Canadian adolescents were in the middle, and Chinese-Canadian adolescents were least.

A comparison between the present MLC results and those in the previous study (Mak, 1983) showed a difference in the extent of externality between Chinese-Canadian adolescents residing in Winnipeg (previous study) and in Greater Vancouver (present study); and between Euro-Canadian adolescents residing in Winnipeg (previous study) and in rural Manitoba (present study). The comparison showed that Chinese-Canadian adolescents in Greater Vancouver were less external (Mean=47.92 S.D. 6.11) than their counterparts in Winnipeg (Mean=46.21 S.D.=7.58); and Euro-Canadian adolescents in Winnipeg were less external (Mean=46.57 S.D.=8.93) than their counterparts in rural Manitoba (Mean=45.96 S.D.=9.22).

Hypotheses 9, 10, and 11: Adolescent Perception of Future-Certainty

The Perception-of-the-Future questionnaire was used to gain an understanding on how certain adolescents are in fulfilling their future goals in the city/town they are currently living in and how certain they are in leaving the city/town they are living in ten years from now. Table 11 shows the number of adolescents who would like to live in or leave the city/town they are living in ten years from now. Table 11A shows the degree of certainty of those who expect to leave.

In the present study, approximately 18% (i.e. 38 out of 216 respondents) of the Hong-Kong-Chinese, 7.7% (i.e. 14 out of 196) of the Chinese-Canadian, and 83.7% (i.e. 162 out of 193) of the Euro-Canadian adolescents reported that they would not expect to live in the city or town that they are living in ten years from now. In the Hong-Kong-Chinese group, 15 (i.e. 7%) reported that they would leave Hong Kong with a high level of certainty; 16 (i.e. 7.5%) with some degree of certainty; and 7 (i.e. 3.5%) with low certainty. In the Chinese-Canadian group, 2 (i.e. 1.2%) reported that they would leave Greater Vancouver with a high level of certainty; 5 (i.e. 2.6%) with some degree of certainty; and 7 (i.e. 3.9%) with low certainty. In the Euro-Canadian group, 69 (i.e. 36%) reported that they would leave rural Manitoba with a high level of certainty, 71 (i.e. 37%) with some degree of certainty, and 22 (i.e. 10%) with low certainty.

Table 11

Total number of respondents living in/leaving the town/city currently living in ten years from present.

Hong-Kong-Chinese	Staying=178	(82%)	`
`			
Total Number=216	Leaving=38	(18%)	`
Chinese-Canadian	Staying=182	(92%)	`
`			
Total Number=196	Leaving=14	(8%)	`
Euro-Canadian	Staying=31	(17%)	`
`			
Total Number=193	Leaving=162	(84%)	`

Table 11A

Degree of Certainty in leaving the town/city currently living in ten years from present

`	Highly Certain	Somewhat Certain	Not at all Certain
Hong-Kong-Chinese Leaving total=38	15	16	` 7
% leaving in total sample of 216	7%	7.5%	` 3.5%
Chinese-Canadian Leaving total=14	2	5	` 5
% leaving in total sample of 196	1.2%	2.6%	` 3.9%
Euro-Canadian leaving total=162	69	71	` 22
% leaving in total sample of 193	36%	37%	` 10%

(1) The degree of certainty in attaining the chosen occupation ten years from the present

Table 12 contains results of this aspect of the questionnaire.

The analysis failed to obtain any significant ethnicity, gender, and age differences on this aspect of the questionnaire. The finding reflects that all adolescents in the present study are somewhat uncertain (i.e. approximately 50% of certainty) in attaining their chosen occupation ten years from the present.

(2) Expectation of social and political changes ten years from the present

Table 13 contains results of this aspect of the questionnaire.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=12.65$, $p<.001$, Omega Squared=0.04. Of the three ethnic groups, Hong-Kong-Chinese expected most social and political changes in ten years from now, Euro-Canadian were intermediate, and Chinese-Canadian were least. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(378)=4.54$, $p<.001$.

TABLE 12

Degree of certainty in attaining chosen occupation in future

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	1.54	.68
			OLDER	1.76	.67
		MALE	YOUNGER	1.58	.71
			OLDER	1.76	.70
CHINESE	CANADIAN	FEMALE	YOUNGER	1.52	.54
			OLDER	1.70	.81
		MALE	YOUNGER	2.03	.74
			OLDER	1.19	.54
EURO	CANADIAN	FEMALE	YOUNGER	1.43	.54
			OLDER	1.37	.61
		MALE	YOUNGER	1.70	.65
			OLDER	1.45	.68

Note: A score of 1 indicates high certainty, 2 indicates 50% certainty, and 3 indicates low certainty.

ANOVA's Results

There were no significant ethnicity, gender, or age-group main effects obtained.

TABLE 13

Expectation of socio-political changes 10 years from now

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	1.74	.77
			OLDER	1.51	.66
		MALE	YOUNGER	1.74	.68
			OLDER	1.62	.53
CHINESE	CANADIAN	FEMALE	YOUNGER	2.06	.82
			OLDER	1.92	.81
		MALE	YOUNGER	2.15	.83
			OLDER	1.83	.76
EURO	CANADIAN	FEMALE	YOUNGER	1.89	.47
			OLDER	1.87	.59
		MALE	YOUNGER	1.88	.66
			OLDER	1.94	.78

Note: 1 indicates expectation of a lot of changes, 2 indicates expectation of some changes, and 3 indicates no changes.

ANOVA's Results

Ethnicity main effect: $F(2,604)=12.65$, $p<.001$. Omega Squared=.04

Hong-Kong-Chinese expected most social-political changes, Euro-Canadian were intermediate, Chinese-Canadian were least. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(378)=4.54$, $p<.001$.

(3) Taking social and political changes into consideration when planning for the future occupation

Table 14 contains results of this aspect of the questionnaire.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=12.88$, $p<.001$, Omega Squared=0.04. Of the three ethnic groups, the Hong-Kong-Chinese group had considered most social and political changes when planning for future occupation, Euro-Canadian were intermediate, and Chinese-Canadian were least. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(408)=4.86$, $p<.001$.

(4) The degree the expected social and political changes have affected the adolescents' overall planning of the future

Table 15 contains results of this aspect of the questionnaire.

Of the the three main effects, only the ethnicity effect was significant with $F(2,604)=12.21$, $p<.001$, Omega Squared=0.04. Both Euro-Canadian and Chinese-Canadian groups reported that expected social and political changes had not really affected their overall planning of the future; whereas Hong-Kong-Chinese adolescents reported that the expected changes in Hong Kong had somewhat affected their overall planning of the future.

TABLE 14

Considering socio-political changes in occupational planning

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	1.94	.78
			OLDER	1.94	.79
		MALE	YOUNGER	2.13	.79
			OLDER	2.19	.74
CHINESE	CANADIAN	FEMALE	YOUNGER	2.70	.51
			OLDER	2.25	.86
		MALE	YOUNGER	2.50	.70
			OLDER	2.24	.92
EURO	CANADIAN	FEMALE	YOUNGER	2.08	.81
			OLDER	2.40	.62
		MALE	YOUNGER	2.29	.71
			OLDER	2.12	.69

Note: A score of 1 indicates taken changes into consideration, 2 taken changes somewhat into consideration, 3 did not take changes into consideration.

ANOVA's Results

Ethnicity main effect: $F(2,604)=12.88$ $p<.001$ Omega Squared=.04

Hong-Kong-Chinese considered most socio-political changes in future-planning, Euro-Canadian were intermediate, Chinese-Canadian were least. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(408)=4.86$, $p<.001$.

TABLE 15

Changes-expectation affecting overall future-planning

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.03	.75
			OLDER	1.91	.69
		MALE	YOUNGER	2.29	.82
			OLDER	2.38	.82
CHINESE	CANADIAN	FEMALE	YOUNGER	2.60	.49
			OLDER	2.35	.81
		MALE	YOUNGER	2.61	.60
			OLDER	2.37	.85
EURO	CANADIAN	FEMALE	YOUNGER	2.24	.66
			OLDER	2.69	.51
		MALE	YOUNGER	2.37	.70
			OLDER	2.61	.61

Note: 1 indicates expected changes had affected overall planning of the future, 2 indicates had somewhat affected, and 3 indicates expected changes had not affected overall planning at all.

ANOVA's Results

Ethnicity main effect: $F(2,604)=14.21$ $p<.001$ Omega Squared=.04

Hong-Kong-Chinese reported social-political changes had most affected future-planning, Euro-Canadians were intermediate, Chinese-Canadians were least. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(412)=4.41$, $p<.001$, and from Euro-Canadian with $t(406)=4.34$, $p<.001$.

The *t*-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(412)=4.41$, $p<.001$ and from the Euro-Canadian group with $t(406)=4.34$, $p<.001$.

Hypotheses 12: Ethnic, Gender, and Age Differences in Causal Attribution

The four causal beliefs (i.e. self-success, self-failure, other-success, other-failure) were investigated in terms of each of the four conditions examined in the TAP. The conditions are: (1) ability; (2) effort; (3) luck; and (4) task difficulty. Thus, four separate analysis-of-variance procedures were performed on each causal belief.

A) Causal Belief: Self-Success

1. Ability

Results relating to this condition are found in Table 16.

Of the three main effects, only the age effect was significant with $F(1,604)=73.54$, $p<.001$, Omega Squared=0.10. The result showed that older adolescents were more likely to attribute success to self on the basis of their abilities than younger adolescents.

TABLE 16

Attributing Self-Success to Ability

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	10.05	2.66
			OLDER	11.78	1.90
		MALE	YOUNGER	9.85	3.09
			OLDER	11.61	2.25
CHINESE	CANADIAN	FEMALE	YOUNGER	10.22	1.99
			OLDER	9.69	1.76
		MALE	YOUNGER	10.07	1.60
			OLDER	11.32	2.07
EURO	CANADIAN	FEMALE	YOUNGER	9.86	2.15
			OLDER	12.80	1.84
		MALE	YOUNGER	9.36	2.07
			OLDER	11.55	2.19

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-success to ability), a neutral point of 9, a maximum score of 15 (highest tendency of attributing self-success to ability).

ANOVA's Results

Age main effect: $F(1,604)=73.54$, $p<.001$, Omega Squared=.10

Older adolescents were more likely to attribute self-success to ability than younger adolescents.

2. Effort

Table 17 contains results relating to attribution of self-success to effort.

Of the three main effects, gender and age-groups were significant. The gender main effect with $F(1,604)=37.95$, $p<.001$, Omega Squared=0.05 showed that females were more likely to attribute self-success to effort than males. The age main effect with $F(1,604)=91.13$, $p<.001$, Omega Squared=0.12 showed that older adolescents were more likely to attribute self-success to effort than younger adolescents.

3. Luck

Table 18 contains results on attributing self-success to luck.

Analyses showed that there were no significant ethnicity, age, or gender differences in the way adolescents attributed self-success to luck. Results showed that all adolescents had a moderate tendency of attributing self-success to luck.

TABLE 17

Attributing Self-Success to Effort

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	11.88	2.37
			OLDER	13.12	2.38
		MALE	YOUNGER	11.72	2.13
			OLDER	10.73	2.29
CHINESE	CANADIAN	FEMALE	YOUNGER	10.50	2.03
			OLDER	13.37	1.52
		MALE	YOUNGER	9.84	1.91
			OLDER	12.83	1.86
EURO	CANADIAN	FEMALE	YOUNGER	11.82	2.02
			OLDER	12.98	1.76
		MALE	YOUNGER	9.64	2.14
			OLDER	12.47	2.65

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-success to effort), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing self-success to effort).

ANOVA's Results

Gender main effect: $F(1,604)=37.95$ $p<.001$ Omega Squared=.05

Age main effect: $F(1,604)=91.13$ $p<.001$ Omega Squared=.12

Older and female adolescents were more likely to attribute self-success to effort than younger and male adolescents, respectively.

TABLE 18

Attributing Self-Success to Luck

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	7.72	2.89
			OLDER	9.10	2.99
		MALE	YOUNGER	8.59	3.03
			OLDER	8.64	2.30
CHINESE	CANADIAN	FEMALE	YOUNGER	7.64	2.52
			OLDER	8.67	2.89
		MALE	YOUNGER	9.22	3.13
			OLDER	8.37	2.23
EURO	CANADIAN	FEMALE	YOUNGER	8.18	2.91
			OLDER	7.42	2.61
		MALE	YOUNGER	8.58	3.02
			OLDER	7.87	2.80

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-success to luck), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing self-success to luck).

ANOVA's Results

There were no significant ethnicity, age-group, or gender differences.

4. Task Difficulty

Table 19 contains results on attributing self-success to task difficulty in adolescents.

The analysis showed that there were no significant ethnicity, age, or gender differences in the way adolescents perceived task difficulty as a factor contributing to self success. Results showed that all adolescents had a moderate tendency of perceiving success of themselves as a result of task difficulty.

Summary

1. Older adolescents were more likely to attribute success to self on the basis of their ability and effort than younger adolescents.

2. Females are more likely to attribute success to self on the basis of their effort than males.

3. All adolescents had a moderate tendency of perceiving luck and task difficulty to be factors contributing to self-success.

TABLE 19

Attributing Self-Success to Task Difficulty

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	8.09	2.17
			OLDER	9.07	2.33
		MALE	YOUNGER	8.13	2.68
			OLDER	7.93	2.83
CHINESE	CANADIAN	FEMALE	YOUNGER	8.22	1.88
			OLDER	9.14	1.90
		MALE	YOUNGER	8.33	2.38
			OLDER	7.83	2.48
EURO	CANADIAN	FEMALE	YOUNGER	7.73	2.30
			OLDER	9.07	2.16
		MALE	YOUNGER	9.42	2.41
			OLDER	9.45	2.34

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-success to task difficulty), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing self-success to task difficulty).

ANOVA's Results

There were no significant ethnicity, age-group, or gender differences.

B. Causal Belief: Other-Success

1. Ability

Table 20 contains results on adolescents' attributions of other-success to others' ability.

Of the three main effects, ethnicity and age were significant. The ethnicity main effect with $F(2,604)=11.64$, $p<.001$, Omega Squared=0.04 showed that Hong-Kong-Chinese adolescents were most likely to perceive abilities of others as a basis of others' successes, Chinese-Canadian were intermediate, and Euro-Canadian were least. The t-tests showed that Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(408)=3.91$, $p<.001$, and from Euro-Canadian with $t(370)=4.17$, $p<.001$.

The age-group main effect with $F(1,604)=34.17$, $p<.001$, Omega Squared=0.05 showed that older adolescents were more likely to perceive successes of others as a result of others' abilities than younger adolescents.

2. Effort

Table 21 contains results on the way adolescents attributed successes of others' to others' effort.

TABLE 20

Attributing Other-Success to Ability

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	12.23	2.24
			OLDER	12.95	2.42
		MALE	YOUNGER	12.76	2.04
			OLDER	12.20	2.30
CHINESE	CANADIAN	FEMALE	YOUNGER	11.64	2.19
			OLDER	11.34	2.43
		MALE	YOUNGER	10.80	2.76
			OLDER	12.73	2.25
EURO	CANADIAN	FEMALE	YOUNGER	10.92	1.99
			OLDER	11.02	1.54
		MALE	YOUNGER	9.90	2.35
			OLDER	10.64	2.06

Note: This scale has a minimum score of 3 (lowest tendency of attributing other-success to others' ability), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing other-success to others' ability).

ANOVA's Results

Ethnicity effect: $F(2,604)=11.64$ $p<.001$ Omega Squared=.04

Age main effect: $F(1,604)=34.17$ $p<.001$ Omega Squared=.05

Hong-Kong-Chinese most frequently attributed other-success to ability, Chinese-Canadian were intermediate, Euro-Canadian were least. Hong-Kong-Chinese differed from Chinese-Canadians with $t(408)=3.91$, $p<.001$ and from Euro-Canadians with $t(370)=4.17$, $p<.001$. Older adolescents attributed other-success more to ability than did younger adolescents.

TABLE 21

Attributing Other-Success to Effort

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	11.46	2.92
			OLDER	11.71	2.86
		MALE	YOUNGER	11.19	2.95
			OLDER	10.86	2.47
CHINESE	CANADIAN	FEMALE	YOUNGER	12.54	1.95
			OLDER	11.84	2.56
		MALE	YOUNGER	11.49	2.40
			OLDER	11.29	1.97
EURO	CANADIAN	FEMALE	YOUNGER	12.10	2.21
			OLDER	12.16	2.30
		MALE	YOUNGER	8.46	2.83
			OLDER	12.21	2.46

Note: This scale has a minimum score of 3 (lowest tendency of attributing other-success to effort), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing other-success to effort).

ANOVA's Results

Gender main effect: $F(1,604)=24.96$ $p<.001$ Omega Squared=.04

Females were more likely to attribute other-success to effort than males.

Of the three main effects, only gender was significant with $F(1,604)=24.96$, $p<.001$, Omega Squared=0.04. This main effect showed that females were more likely to attribute other-successes to efforts than males.

3. Luck

Table 22 contains results on attributing other-success to luck.

The analyses showed that there were no significant ethnicity, age, or gender differences in the way adolescents perceived luck as the factor leading to others' successes. Results suggested that all adolescents perceived luck to be somewhat important in the successes of others.

4. Task Difficulty

Table 23 contains results on attribution of other-success to task-difficulty.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=21.07$, $p<.001$, Omega Squared=0.07. Euro-Canadian adolescents were most likely to attribute others' successes to task difficulty, Chinese-Canadian were intermediate, and Hong-Kong-Chinese were least. The t-tests showed that Euro-Canadian adolescents differed significantly from Chinese-Canadian with $t(366)=4.70$, $p<.001$, and from Hong-Kong-Chinese with $t(370)=5.98$, $p<.001$.

TABLE 22

Attributing Other-Success to Luck

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	7.67	2.35
			OLDER	8.12	2.68
		MALE	YOUNGER	8.39	2.15
			OLDER	7.48	2.45
CHINESE	CANADIAN	FEMALE	YOUNGER	8.66	2.46
			OLDER	7.43	2.02
		MALE	YOUNGER	7.58	2.21
			OLDER	7.56	2.71
EURO	CANADIAN	FEMALE	YOUNGER	8.22	2.40
			OLDER	8.73	2.73
		MALE	YOUNGER	7.96	2.79
			OLDER	8.55	2.50

Note: This scale has a minimum score of 3 (lowest tendency of attributing other-success to luck), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing other-success to luck).

ANOVA's Results

There were no significant ethnicity, age-group, or gender differences.

TABLE 23

Attributing Other-Success to Task Difficulty

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	8.00	2.85
			OLDER	6.79	2.36
		MALE	YOUNGER	7.69	2.32
			OLDER	7.98	2.08
CHINESE	CANADIAN	FEMALE	YOUNGER	8.76	2.04
			OLDER	7.25	1.90
		MALE	YOUNGER	7.73	1.72
			OLDER	8.22	1.92
EURO	CANADIAN	FEMALE	YOUNGER	9.57	2.19
			OLDER	8.49	2.59
		MALE	YOUNGER	8.94	1.85
			OLDER	9.06	2.51

Note: This scale has a minimum score of 3 (lowest tendency of attributing other-success to task-difficulty), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing other-success to task-difficulty).

ANOVA's Results

Ethnicity main effect: $F(2,604)=21.07$, $p<.001$, Omega Squared=.07

Euro-Canadian adolescents were most likely to attribute other-success to task-difficulty, Chinese-Canadian were intermediate, and Hong-Kong-Chinese were least likely. Euro-Canadians differed significantly from Chinese-Canadians with $t(366)=4.70$, $p<.001$ and from Hong-Kong-Chinese with $t(370)=5.98$, $p<.001$.

Summary

1. Hong-Kong-Chinese adolescents were most likely to attribute successes of others to the abilities of others, Chinese-Canadian were intermediate, and Euro-Canadian were least.

2. Euro-Canadian adolescents were most likely to attribute successes of others to task difficulty, Chinese-Canadian were intermediate, and Hong-Kong-Chinese were least likely.

3. Older adolescents were more likely to attribute successes of others to others' abilities than were younger adolescents.

4. Female adolescents were more likely to attribute successes of others to efforts of others than were male adolescents.

C. Causal Belief:Self-Failure

1. Ability

Table 24 contains results relating to adolescents' self-failure attributions to ability.

The analyses showed that there were no significant ethnicity, age, or gender differences in the attributions of self-failure relating to ability. Results suggested that all adolescents tended to perceive self-failures to be related to their abilities.

TABLE 24

Attributing Self-Failure to Ability

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	9.14	2.64
			OLDER	10.75	2.34
		MALE	YOUNGER	9.30	2.22
			OLDER	10.86	2.59
CHINESE	CANADIAN	FEMALE	YOUNGER	9.46	2.29
			OLDER	11.53	2.10
		MALE	YOUNGER	11.04	2.29
			OLDER	10.07	1.90
EURO	CANADIAN	FEMALE	YOUNGER	10.55	2.91
			OLDER	9.91	2.02
		MALE	YOUNGER	10.28	2.85
			OLDER	9.87	2.21

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-failure to ability), a neutral point of 9, a maximum score of 15 (highest tendency of attributing self-failure to ability).

ANOVA's Results

There were no significant ethnicity, age-group, or gender differences.

2. Effort

Table 25 contains results relating to adolescents' attributions of self-failure to effort.

Of the three main effects, ethnicity and age-group were significant. The ethnicity main effect with $F(2,604)=25.98$, $p<.001$, Omega Squared=0.08 showed that of the three ethnic groups, Chinese-Canadian adolescents were most likely to attribute their failures to their lack of efforts, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least. The t-tests showed that the Euro-Canadian group differed significantly from the Hong-Kong-Chinese group with $t(370)=3.70$, $p<.001$, and from the Chinese-Canadian group with $t(366)=7.10$, $p<.001$.

The age main effect with $F(1,604)=25.54$, $p<.001$, Omega Squared=0.04 showed that older adolescents were more likely to attribute self-failures to lack of effort than were younger adolescents.

TABLE 25

Attributing Self-Failure to Effort

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	11.11	2.74
			OLDER	12.79	2.09
		MALE	YOUNGER	10.57	2.48
			OLDER	11.63	2.14
CHINESE	CANADIAN	FEMALE	YOUNGER	12.38	2.10
			OLDER	12.73	2.03
		MALE	YOUNGER	11.14	2.34
			OLDER	13.37	1.46
EURO	CANADIAN	FEMALE	YOUNGER	9.80	2.87
			OLDER	11.44	2.44
		MALE	YOUNGER	11.00	2.97
			OLDER	10.21	2.19

Note:This scale has a minimum score of 3 (least attributing self-failure to lack of effort), a neutral point of 9, and a maximum score of 15 (most attributing self-failure to lack of effort).

ANOVA's Results

Ethnicity main effect: $F(2,604)=25.98$, $p<.001$. Omega Squared =.08

Age-group main effect: $F(1,604)=27.54$ $p<.001$ Omega Squared = .04

Chinese-Canadians most frequently attributed self-failure to lack of effort, Hong-Kong-Chinese were intermediate, and Euro-Canadians the least. Euro-Canadian differed from Hong-Kong-Chinese with $t(370)=3.70$, $p<.001$ and from Chinese-Canadian with $t(366)=7.10$, $p<.001$. Older adolescents attributed self-failures more to lack of effort than did younger adolescents.

3. Luck

Table 26 contains results relating to adolescents' attributions of self-failures as a result of bad luck.

Of the three main effects, only gender was significant with $F(1,604)=31.63$ $p<.001$, Omega Squared=0.05. This result showed that male adolescents were more likely to attribute self-failure to bad luck than were female adolescents.

4. Task Difficulty

Table 27 contains results on attributions of self-failure to task difficulty.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=19.27$, $p<.001$, Omega Squared=0.06. This result showed that of the three ethnic groups, Euro-Canadian adolescents were most likely to attribute self-failures to task difficulty, Chinese-Canadian adolescents were intermediate, and Hong-Kong-Chinese were least. The t-tests showed that the Euro-Canadian group differed significantly from the Hong-Kong-Chinese group with $t(370)=5.86$, $p<.001$, and from the Chinese-Canadian group with $t(367)=4.64$, $p<.001$.

Summary

1. Chinese-Canadian adolescents were most likely to attribute self-failures to lack of effort, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least.

TABLE 26

Attributing Self-failure to Luck

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	6.74	2.36
			OLDER	6.59	2.49
		MALE	YOUNGER	7.72	3.10
			OLDER	8.25	1.97
CHINESE	CANADIAN	FEMALE	YOUNGER	7.32	2.41
			OLDER	6.49	2.05
		MALE	YOUNGER	7.24	2.78
			OLDER	8.07	2.13
EURO	CANADIAN	FEMALE	YOUNGER	6.33	2.31
			OLDER	6.71	2.54
		MALE	YOUNGER	8.34	2.97
			OLDER	7.68	3.12

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-failure to luck), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing self-failure to luck).

ANOVA's Results

Gender main effect: $F(1,604)=31.63$, $p<.001$, Omega Squared = .05

Males were more likely to attribute self-failure to bad luck than were females.

TABLE 27

Attributing Self-Failure to Task Difficulty

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	7.58	2.47
			OLDER	8.48	2.40
		MALE	YOUNGER	8.15	2.02
			OLDER	7.93	2.35
CHINESE	CANADIAN	FEMALE	YOUNGER	8.58	2.54
			OLDER	8.27	2.19
		MALE	YOUNGER	8.16	2.23
			OLDER	8.15	2.46
EURO	CANADIAN	FEMALE	YOUNGER	8.04	2.79
			OLDER	9.62	2.31
		MALE	YOUNGER	9.90	1.89
			OLDER	10.17	1.76

Note: This scale has a minimum score of 3 (lowest tendency of attributing self-failure to task-difficulty), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing self-failure to task-difficulty).

ANOVA's Results

Ethnicity main effect $F(2,604)=19.27$, $p<.001$, Omega Squared=.06

Euro-Canadian most frequently attributed self-failure to task difficulty, Chinese-Canadian were intermediate, and Hong-Kong-Chinese were least. The Euro-Canadian group differed significantly from the Hong-Kong-Chinese group with $t(370)=5.86$, $p<.001$, and from the Chinese-Canadian group with $t(367)=4.64$, $p<.001$.

2. Older adolescents were more likely to attribute self-failures to lack of effort than younger adolescents.

3. Male adolescents were more likely to attribute self-failures to bad luck than female adolescents.

4. Euro-Canadian adolescents were most likely to attribute self-failures to task difficulty, Chinese-Canadian were intermediate, and Hong-Kong-Chinese were least.

D. Causal Belief: Other-Failure

1. Ability

Table 28 contains results on attributing others' failures to lack of ability.

Of the three main effects, only the age effect was significant with $F(1,604)=11.25$, $p<.001$, Omega Squared=0.02. Results showed that older adolescents were more likely to attribute failures of others' to lack of ability than were younger adolescents.

2. Effort

Table 29 contains results on attributing other-failures to others' lack of effort.

TABLE 28

Attributing Other-Failure to Ability

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	9.40	2.73
			OLDER	11.41	3.16
		MALE	YOUNGER	10.20	1.61
			OLDER	10.25	2.28
CHINESE	CANADIAN	FEMALE	YOUNGER	9.74	2.54
			OLDER	11.06	2.07
		MALE	YOUNGER	10.51	2.05
			OLDER	10.54	2.40
EURO	CANADIAN	FEMALE	YOUNGER	10.47	1.75
			OLDER	9.64	2.44
		MALE	YOUNGER	9.40	2.53
			OLDER	10.28	1.36

Note: This scale has a minimum score of 3 (least attribute other-failures to ability), a neutral point of 9, and a maximum score of 15 (most attribute other-failures to ability).

ANOVA's Results

Age main effect: $F(1,604)=11.25$, $p<.001$, Omega Squared=.02

Older adolescents were more likely to attribute other-failure to ability than were younger adolescents.

TABLE 29

Attributing Other-Failure to Effort

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	11.70	3.21
			OLDER	11.69	2.75
		MALE	YOUNGER	10.67	2.99
			OLDER	11.68	2.32
CHINESE	CANADIAN	FEMALE	YOUNGER	11.78	1.81
			OLDER	11.73	2.25
		MALE	YOUNGER	11.6 2	2.20
			OLDER	14.02	4.38
EURO	CANADIAN	FEMALE	YOUNGER	10.67	2.07
			OLDER	11.38	2.42
		MALE	YOUNGER	11.30	2.99
			OLDER	10.51	2.07

Note: This scale has a minimum score of 3 (least attribute other-failure to lack of effort), a neutral point of 9, and a maximum score of 15 (most attribute other-failure to lack of effort).

ANOVA's Results

Ethnicity main effect $F(2,604)=10.51$, $p<.001$, Omega Squared=.03

Chinese-Canadians most frequently attributed other-failure to lack of effort, Hong-Kong-Chinese were intermediate, Euro-Canadian were least. The Euro-Canadian group differed significantly from the Chinese-Canadian group with $t(367)=4.56$, $p<.001$.

Of the three main effects, only the ethnicity effect was significant with $F(2,604)=10.51$, $p<.001$, Omega Squared=0.03. Chinese-Canadian adolescents were most likely to attribute others' failures to lack of effort, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least likely. The t-tests showed that the Euro-Canadian group differed significantly from the Chinese-Canadian group with $t(367)=4.56$, $p<.001$.

3. Luck

Table 30 contains results on adolescents' attributions of others' failures to bad luck.

The analysis showed that there were no significant ethnicity, age, or gender differences on the way adolescents attributed failures of others to bad luck. Results showed that all adolescent groups had a moderate tendency of attributing others' failures to bad luck.

4. Task Difficulty

Table 31 contains results on attributions of others' failures to task difficulty.

TABLE 30

Attributing Other-Failure to Luck

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	6.88	2.88
			OLDER	7.34	2.89
		MALE	YOUNGER	7.86	2.37
			OLDER	7.25	2.74
CHINESE	CANADIAN	FEMALE	YOUNGER	7.08	2.20
			OLDER	6.96	2.58
		MALE	YOUNGER	7.11	2.90
			OLDER	8.19	2.80
EURO	CANADIAN	FEMALE	YOUNGER	7.06	3.42
			OLDER	6.69	2.61
		MALE	YOUNGER	5.68	2.50
			OLDER	7.27	3.26

Note: This scale has a minimum score of 3 (lowest tendency of attributing other-failure to bad luck), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing other-failure to bad luck).

ANOVA's Results

There were no significant ethnicity, age-group, or gender differences.

TABLE 31

Attributing Other-Failure to Task Difficulty

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	8.00	2.39
			OLDER	8.34	2.20
		MALE	YOUNGER	8.89	1.86
			OLDER	7.31	2.43
CHINESE	CANADIAN	FEMALE	YOUNGER	8.74	1.45
			OLDER	8.35	2.09
		MALE	YOUNGER	7.49	2.70
			OLDER	8.36	3.04
EURO	CANADIAN	FEMALE	YOUNGER	9.48	1.59
			OLDER	8.69	2.48
		MALE	YOUNGER	7.94	2.37
			OLDER	9.00	2.06

Note: This scale has a minimum score of 3 (lowest tendency of attributing other-failure to task difficulty), a neutral point of 9, and a maximum score of 15 (highest tendency of attributing other-failure to task difficulty).

ANOVA's Results

There were no significant ethnicity, age-group, or gender differences.

The analysis showed that there were no significant ethnicity, age, or gender differences in adolescent attributions of others' failures to task difficulty. Results showed that all adolescent groups had a rather high tendency of attributing others' failures to task difficulty.

Summary

1. Older adolescents were more likely to attribute others' failures to lack of ability than younger adolescents.

2. Chinese-Canadian adolescents were most likely to attribute others' failures to lack of effort, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least.

3. All adolescent groups showed a moderate tendency of attributing others' failures to bad luck; and a rather high tendency to task difficulty.

Table 32A contains a summary of all statistically significant results on attributions of self-success and others' successes; and Table 32B on attributions of self-failure and others' failures.

Table 32A

F and Omega-Squared Values of Self-Success and Other-Success Attributions

		Self-Success	Other-Success
Ability	Ethnicity		F=11.64 Omega=.04 HKC(most) ;EC(Least)
	Age	F=73.54 Omega= .10 Old(more);Young(less)	F=34.17 Omega=.05 Old(more);Young(less)
Effort	Ethnicity		
	Age	F=91.13 Omega=.12 Old(more) Young(less)	
	Gender	F=37.95 Omega=.05 Fem(more);Male(less)	F= 24.96 Omega=.04 Fem(more);Male(less)
Luck			
Task Diff.	Ethnicity		F=21.07 Omega=.07 EC(most); HKC(least)

Note: Only *F*-values significant at *p*-values of <.001 are reported.

Abbreviations: Fem=Females; Old=Older adolescents

Young=Younger adolescents; EC=Euro-Canadian

HKC=Hong-Kong-Chinese; Diff.=Difficulty.

Table 32B

F and Omega-Squared Values of Self-Failure and Other-Failure Attributions

		Self-Failure	Other-Failure
Ability	Ethnicity		
	Age		F=11.25 Omega=.02 Old(more);Young(less)
Effort	Ethnicity	F=25.98 Omega=.08 CC(most); EC(least)	F=10.51 Omega=.03 CC(Most);EC(least)
	Age	F=27.54 Omega=.04 Old(more) Young(less)	
	Gender		
Luck		F=31.63 Omega=.05 Male(more);Fem(less)	
Task Diff.	Ethnicity	F=21.07 Omega=.07 EC(most);HKC(least)	

Note: Only *F*-values significant at *p*-values of <.001 are reported.

Abbreviations: Fem=Females; Old=Older adolescents

Young=Younger adolescents; EC=Euro-Canadian

HKC=Hong-Kong-Chinese; Diff.=Difficulty.

4.2 SUMMARY ON SOCIALIZATION, PERCEPTION OF FAMILY-HONOR-IMPORTANCE, LOCUS OF CONTROL, ADOLESCENT PERCEPTION OF FUTURE-CERTAINTY, AND CAUSAL ATTRIBUTION

I. Socialization:

A. The Acceptance-Rejection Dimension (A-R)

Significant ethnicity differences were obtained in both maternal and paternal Acceptance-Rejection dimensions. Of the three ethnic groups, Euro-Canadian adolescents reported most acceptance from both parents, Chinese-Canadian adolescents were intermediate, and Hong-Kong-Chinese reported least acceptance.

B. Psychological Autonomy-Psychological Control (PA-PC)

Significant ethnicity differences were obtained in both maternal and paternal Psychological Autonomy-Psychological Control dimensions. Amongst the three ethnic groups, Euro-Canadian adolescents Hong-Kong-Chinese reported most psychological control from both parents, Chinese-Canadians were intermediate, and Euro-Canadians reported least psychological control.

C. Firm Control-Lax Control (FC-LC)

Significant age main effects were obtained in both maternal and paternal Firm Control-Lax Control dimensions. In comparison to older adolescents, younger adolescents reported more firm control from both parents.

II. Perception of the Importance of Family-Honor

For Chinese-Canadian adolescents, the family-honor was most important, followed by Euro-Canadian adolescents, and lastly, for Hong-Kong-Chinese adolescents, family-honor was least important.

III. Locus of Control

Ethnicity, age-group, and gender differences in locus of controlwere not significant. Data analyses reflected that most adolescents in the present study were external in their belief orientations.

IV. Adolescent Perception of Future-Certainty

Four trends were observed:

a) All adolescents were somewhat uncertain in attaining their chosen occupations ten years from the present.

b) Hong-Kong-Chinese adolescents expected most social-political changes in the city they are living in ten years from now, Euro-Canadian were intermediate, and Chinese-Canadian were least expected.

c) Hong-Kong-Chinese adolescents had considered most social-political changes when planning for their future occupations, Euro-Canadian were intermediate, and Chinese-Canadian were least considered.

d) Hong-Kong-Chinese adolescents reported that the expected social-political changes had somewhat affected their overall planning of the future. Both Euro-Canadian and Chinese-Canadian adolescents did not really perceive social-political changes to have affected the overall planning of their future.

V. Causal Attribution

A. Self-Success

1. Older adolescents were more likely to attribute self-success to ability and effort than were younger adolescents.

2. Females were more likely to attribute self-success to effort than were males.

B. Other-Success

1. Hong-Kong-Chinese were most likely to attribute other-success to ability, Chinese-Canadians were intermediate, and Euro-Canadians were least likely.

2. Euro-Canadians were most likely to attribute other-success to task difficulty, Chinese-Canadians were intermediate, and Hong-Kong-Chinese were least likely.

3. Older adolescents were more likely to attribute other-success to ability than were younger adolescents.

4. Females were more likely to attribute other-success to effort than were males.

C. Self-Failure

1. Chinese-Canadian adolescents were most likely to attribute self-failure to lack of effort, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least likely.
2. Euro-Canadian adolescents were most likely to attribute self-failure to task difficulty, Chinese-Canadian were intermediate, and Hong-Kong-Chinese were least likely.
3. Older adolescents were more likely to attribute self-failure to lack of effort than were younger adolescents.
4. Males were more likely to attribute self-failure to bad luck than were females.

D. Other-Failure

1. Chinese-Canadian adolescents were most likely to attribute other-failure to lack of effort, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least likely.

2. Older adolescents attributed other-failure more to lack of ability than did younger adolescents.

4.3 ACHIEVEMENT BEHAVIOR

Hypotheses 13: Minimal Standard

A. Solvable Puzzle #1

Table 33 contains results relating to minimal standard in this trial.

Of the three main effects, ethnicity and gender were significant. The ethnicity main effect with $F(2,535)=30.06$, $p<.001$, Omega Squared=0.09 showed that of the three ethnic groups, Hong-Kong-Chinese adolescents set the highest minimal standard, Chinese-Canadian adolescents were intermediate, and Euro-Canadian adolescents lowest. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(332)=6.08$, $p<.001$, and from the Euro-Canadian group with $t(292)=7.03$, $p<.001$.

The gender main effect with $F(1,535)=39.0$, $p<.001$, Omega Squared=0.06 showed that male adolescents set higher minimal standard than female adolescents.

B. Solvable Puzzle #2 (Presented with Reinforcement)

Table 34 contains results relating to this trial.

Of the three main effects, gender and age group were significant. The gender main effect with $F(1,534)=583.8$, $p<.001$, Omega Squared=0.46 showed that female adolescents set lower minimal standard than male adolescents.

TABLE 33

Minimal standard for Solvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	1.02	.48
			OLDER	1.44	.57
		MALE	YOUNGER	.87	.41
			OLDER	.88	.52
CHINESE	CANADIAN	FEMALE	YOUNGER	1.54	.72
			OLDER	1.69	.85
		MALE	YOUNGER	1.34	.77
			OLDER	1.26	.61
EURO	CANADIAN	FEMALE	YOUNGER	1.75	.78
			OLDER	1.68	.82
		MALE	YOUNGER	1.31	.53
			OLDER	1.35	.49

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results

Ethnicity main effect: $F(2,535)=30.06$ $p<.001$ Omega Squared=.09

Gender main effect: $F(1,535)=39.0$ $p<.001$ Omega Squared=.06

Hong-Kong-Chinese set highest minimal standard, Chinese-Canadians intermediate, Euro-Canadians lowest. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(332)=6.08$, $p<.001$, and from Euro-Canadian with $t(292)=7.03$, $p<.001$. Males set higher minimal standard than females.

TABLE 34

Minimal standard for Solvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	3.65	.48
			OLDER	2.61	.91
		MALE	YOUNGER	1.24	.52
			OLDER	1.00	.41
CHINESE	CANADIAN	FEMALE	YOUNGER	3.03	.99
			OLDER	2.26	.88
		MALE	YOUNGER	1.25	.46
			OLDER	1.26	.62
EURO	CANADIAN	FEMALE	YOUNGER	2.59	1.02
			OLDER	2.31	.71
		MALE	YOUNGER	1.63	.72
			OLDER	1.44	.52

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results

Gender Main effect: $F(1,534)=583.8$, $p<.001$ Omega Squared=.46

Age group main effect: $F(1,534)=52.62$, $p<.001$ Omega Squared=.04

Males set higher minimal standard than females. Older adolescents set higher minimal standard than younger adolescents.

The age main effect with $F(1,534)=52.62$, $p<.001$, Omega Squared=0.04 showed that younger adolescents set lower minimal standard than older adolescents.

C. Unsolvable Puzzle #1

Table 35 contains results relating to this trial.

Of the three main effects, only gender was significant with $F(1,534)=58.5$, $p<.001$, Omega Squared=0.09. Female adolescents set lower minimal standard in the unsolvable puzzle than male adolescents.

D. Unsolvable Puzzle #2 (Presented with Reinforcement)

Table 36 contains results relating to this trial.

Of the three main effects, ethnicity and gender were significant. The ethnicity main effect with $F(2,534)=7.76$, $p<.001$, Omega Squared=0.02 showed that Hong-Kong-Chinese adolescents set the highest minimal standard, Euro-Canadian were intermediate, and Chinese-Canadian lowest. However, the t-tests showed that none of the three groups differed significantly from one another at the $p<.001$ level.

TABLE 35

Minimal standard for Unsolvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.95	.76
			OLDER	2.93	.92
		MALE	YOUNGER	3.06	.75
			OLDER	2.67	1.01
CHINESE	CANADIAN	FEMALE	YOUNGER	3.30	.94
			OLDER	3.41	.70
		MALE	YOUNGER	2.43	.68
			OLDER	2.19	.80
EURO	CANADIAN	FEMALE	YOUNGER	3.02	.82
			OLDER	3.26	.78
		MALE	YOUNGER	2.83	.77
			OLDER	2.47	.63

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Result

Gender main effect: $F(1,534)=58.5$, $p<.001$, Omega Squared=.09

Males set higher minimal standard than females.

TABLE 36

Minimal standard for Unsolvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	3.34	.64
			OLDER	3.57	.58
		MALE	YOUNGER	3.43	.67
			OLDER	3.36	.79
CHINESE	CANADIAN	FEMALE	YOUNGER	3.85	.36
			OLDER	3.77	.46
		MALE	YOUNGER	3.49	.62
			OLDER	3.50	.55
EURO	CANADIAN	FEMALE	YOUNGER	3.63	.54
			OLDER	3.52	.76
		MALE	YOUNGER	3.35	.86
			OLDER	3.42	.57

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results

Ethnicity main effect: $F(1,534)=7.76$, $p<.001$, Omega Squared=.02

Gender main effect: $F(1,534)=13.5$, $p<.001$ Omega Squared=.02

Hong-Kong-Chinese set highest minimal standard, Euro-Canadians intermediate, and Chinese-Canadians lowest. The t-tests showed that none of the three groups differed significantly from one another at the $p<.001$ level. Males set higher minimal standard than females.

The gender main effect with F (1,534)=13.5, p<.001, Omega Squared=0.02 showed that like all previous trials, female adolescents set lower minimal standards than male adolescents.

Summary

Analyses on minimal standard yielded the following trends.

I. Ethnic Difference:

1. Of the three ethnic groups, Hong-Kong-Chinese adolescents set the highest minimal standard in the first trial, presented without reinforcement; and in the fourth trial, presented with reinforcement administered after an unsolvable puzzle trial (i.e. the third trial).

2. In the first trial, the minimal standard of the Chinese-Canadian adolescents was between those of the Hong-Kong-Chinese and the Euro-Canadian groups. In the fourth trial, the minimal standard of the Chinese-Canadian adolescents was the lowest of the three ethnic groups.

3. Euro-Canadian adolescents set the lowest minimal standard in the first trial. In the fourth trial, their minimal standard was in between those of the Hong-Kong-Chinese and the Chinese-Canadian groups.

4. There was no significant ethnicity difference in minimal standards in both the second and the third trials.

II. Age Difference

A significant age difference in minimal standard in the second trial was obtained. The age difference showed that older adolescents set higher minimal standard than younger adolescents. There was no significant age difference in minimal standard in other trials (i.e. first, third, and fourth trials).

III. Gender Difference

Significant gender differences in minimal standard across all four trials were obtained. These gender differences showed that males set higher minimal standard for performances than females in the present study.

Hypothesis 14: Level of Aspiration

A. Solvable Puzzle #1

Table 37 contains results relating to level of aspiration in this trial.

Of the three main effects, ethnicity and gender were significant. The ethnicity main effect with $F(2,535)=24.87$, $p<.001$, Omega Squared=0.07 showed that Hong-Kong-Chinese adolescents had the highest level of aspiration, followed by Chinese-Canadian, and lastly by Euro-Canadian adolescents. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with

TABLE 37

Level of aspiration for Solvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	.80	.26
			OLDER	1.06	.35
		MALE	YOUNGER	.60	.31
			OLDER	.59	.35
CHINESE	CANADIAN	FEMALE	YOUNGER	1.02	.49
			OLDER	1.15	.58
		MALE	YOUNGER	.89	.38
			OLDER	.78	.32
EURO	CANADIAN	FEMALE	YOUNGER	1.11	.48
			OLDER	1.21	.63
		MALE	YOUNGER	.88	.25
			OLDER	.99	.29

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results:

Ethnicity main effect: $F(2,535)=24.87$ $p<.001$ Omega Squared=.07

Gender main effect: $F(1,535)=59$, $p<.001$, Omega Squared=.09

Hong-Kong-Chinese had highest level of aspiration, Chinese-Canadians intermediate, and Euro-Canadians lowest. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(350)=4.86$, $p<.001$, and from Euro-Canadian with $t(302)=6.52$, $p<.001$. Males had higher level of aspiration than females.

$t(350)=4.86$, $p<.001$, and from the Euro-Canadian group with $t(302)=6.52$, $p<.001$.

The gender main effect with $F(1,535)=59.0$ $p<.001$ Omega Square=0.09 showed that females had lower level of aspiration than males in this trial.

B. Solvable Puzzle #2

Table 38 contains results on level of aspiration in this trial.

Of the three main effects, only gender was significant with $F(1,534)=455.0$, $p<.001$, Omega Squared=0.37. The result showed that male adolescents had higher levels of aspiration than female adolescents.

C. Unsolvable Puzzle #1

Table 39 contains results on level of aspiration in this trial.

Of the three main effects, only gender was significant with $F(1,534)=82.5$, $p<.001$, Omega Squared=0.12. The result showed that male adolescents had higher levels of aspiration than female adolescents.

TABLE 38

Level of aspiration for Solvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.58	.62
			OLDER	1.95	.87
		MALE	YOUNGER	.74	.41
			OLDER	.52	.33
CHINESE	CANADIAN	FEMALE	YOUNGER	1.86	.88
			OLDER	1.38	.56
		MALE	YOUNGER	.78	.30
			OLDER	.82	.36
EURO	CANADIAN	FEMALE	YOUNGER	1.55	.65
			OLDER	1.45	.58
		MALE	YOUNGER	1.06	.47
			OLDER	1.03	.45

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Result:

Gender main effect: $F(1,534)=455.0$, $p<.001$, Omega Squared=.37

Males had higher level of aspiration than females.

TABLE 39

Level of aspiration for Unsolvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.36	.82
			OLDER	1.66	.78
		MALE	YOUNGER	1.92	.73
			OLDER	1.67	.91
CHINESE	CANADIAN	FEMALE	YOUNGER	2.44	.78
			OLDER	2.71	.88
		MALE	YOUNGER	1.53	.52
			OLDER	1.47	.51
EURO	CANADIAN	FEMALE	YOUNGER	2.33	.81
			OLDER	2.38	.69
		MALE	YOUNGER	2.04	.67
			OLDER	1.81	.47

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Result:

Gender main effect: $F(1,534)=82.5$, $p<.001$, Omega Squared=.12

Males had higher level of aspiration than females.

D. Unsolvable Puzzle #2 (Presented with Reinforcement)

Table 40 contains results relating to level of aspiration in this trial.

Of the three main effects, only gender was significant with $F(1,534)=63.0$, $p<.001$, Omega Squared=0.09. The result showed showed that males had higher levels of aspiration than females in this trial.

Summary

Analyses on level of aspiration yielded the following trends.

I. Ethnicity Difference

1. Of the three ethnic groups, Hong-Kong-Chinese adolescents had the highest level of aspiration in the first trial. In this trial, Euro-Canadian adolescents had the lowest level of aspiration, and Chinese-Canadian adolescents were intermediate.

2. There was no significant ethnicity difference in level of aspiration in the second, third, and fourth trials.

TABLE 40

Level of aspiration for Unsolvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.68	.74
			OLDER	3.06	.72
		MALE	YOUNGER	2.51	.65
			OLDER	2.35	.77
CHINESE	CANADIAN	FEMALE	YOUNGER	3.09	.77
			OLDER	3.17	.74
		MALE	YOUNGER	2.55	.68
			OLDER	2.58	.71
EURO	CANADIAN	FEMALE	YOUNGER	3.15	.73
			OLDER	3.09	.75
		MALE	YOUNGER	2.77	.78
			OLDER	2.74	.54

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Result:

Gender main effect: $F(1,534)=63.0$, $p<.001$, Omega Squared=.09

Males had higher level of aspiration than females.

II. Age Difference

There was no significant age difference in level of aspiration in all four trials.

III. Gender Difference

Male adolescents set higher level of aspiration for performances in all four trials than female adolescents.

Hypothesis 15: Expectancy

A. Solvable Puzzle #1

Table 41 contains results relating to expectancy in this trial.

Of the three main effects, ethnicity and gender were significant. The ethnicity main effect with $F(2,535)=41.52$, $p<.001$, Omega Squared=0.12 showed that Hong-Kong-Chinese adolescents had the highest level of expectancy (i.e. expected to complete task in the least amount of time), Chinese-Canadian intermediate, and Euro-Canadian lowest. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(316)=7.20$, $p<.001$, and from the Euro-Canadian group with $t(280)=8.22$, $p<.001$.

The gender main effect with $F(1,535)=44.8$, $p<.001$, Omega Squared=0.07 showed that male adolescents expected to complete the task in less time than female adolescents.

TABLE 41

Expectancy for Solvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	.89	.37
			OLDER	1.25	.43
		MALE	YOUNGER	.61	.31
			OLDER	.65	.39
CHINESE	CANADIAN	FEMALE	YOUNGER	1.28	.56
			OLDER	1.54	.82
		MALE	YOUNGER	1.16	.68
			OLDER	1.10	.58
EURO	CANADIAN	FEMALE	YOUNGER	1.40	.51
			OLDER	1.49	.84
		MALE	YOUNGER	1.16	.49
			OLDER	1.26	.51

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results:

Ethnicity main effect: $F(2,535)=41.52$, $p<.001$, Omega Squared=.12

Gender main effect: $F(1,535)=44.8$, $p<.001$, Omega Squared=.07

Hong-Kong-Chinese had the highest level of expectancy, Chinese-Canadians intermediate, and Euro-Canadians the lowest. Hong-Kong-Chinese differed from Chinese-Canadian with $t(316)=7.20$, $p<.001$, and from Euro-Canadian with $t(280)=8.22$, $p<.001$. Males had higher expectancy than femles.

B. Solvable Puzzle #2 (Presented with Reinforcement)

Table 42 contains results relating to expectancy in this trial.

Of the three main effects, gender and age-group were significant. The gender main effect with $F(1,534)=511.7$, $p<.001$, Omega Squared=0.44 showed that males expected to complete the task in less time than females.

The age group main effect with $F(1, 534)=24.23$, $p<.001$, Omega Squared=0.02 showed that older adolescents expected to complete the task in less time than younger adolescents.

C. Unsolvable Puzzle #1

Table 43 contains results relating to expectancy in this trial.

Of the three main effects, ethnicity and gender were significant. The ethnicity main effect with $F(2,534)=14.5$, $p<.001$, Omega Squared=0.04 showed that Hong-Kong-Chinese adolescent maintained to complete the task in the shortest time-period in this trial, followed by the Chinese-Canadian adolescents, and finally by the Euro-Canadian adolescents. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(377)=3.68$, $p<.001$, and from the Euro-Canadian group with $t(348)=4.56$, $p<.001$.

TABLE 42

Expectancy for Solvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	3.03	.64
			OLDER	2.30	.89
		MALE	YOUNGER	.89	.39
			OLDER	.74	.34
CHINESE	CANADIAN	FEMALE	YOUNGER	2.50	.97
			OLDER	2.06	.87
		MALE	YOUNGER	1.11	.52
			OLDER	1.08	.55
EURO	CANADIAN	FEMALE	YOUNGER	2.11	.80
			OLDER	2.04	.68
		MALE	YOUNGER	1.43	.56
			OLDER	1.31	.57

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results:

Gender main effect: $F(1,534)=511.7$ $p<.001$ Omega Squared=.44

Age main effect: $F(1,534)=24.23$ $p<.001$ Omega Squared=.02

Males had higher level of expectancy than females. Older adolescents had higher level of expectancy than younger adolescents.

TABLE 43

Expectancy for Unsolvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.58	.68
			OLDER	2.00	.99
		MALE	YOUNGER	2.49	.74
			OLDER	2.25	1.03
CHINESE	CANADIAN	FEMALE	YOUNGER	3.04	.77
			OLDER	3.22	.79
		MALE	YOUNGER	2.29	.62
			OLDER	2.06	.69
EURO	CANADIAN	FEMALE	YOUNGER	2.91	.79
			OLDER	3.00	.79
		MALE	YOUNGER	2.67	.73
			OLDER	2.35	.59

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results:

Ethnicity main effect: $F(2,534)=14.5$, $p<.001$, Omega Squared=.04

Gender main effect: $F(1,534)=40.6$, $p<.001$, Omega Squared=.06

Hong-Kong-Chinese had the highest expectancy, Chinese-Canadian intermediate, and Euro-Canadian lowest. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(377)=3.68$, $p<.001$, and from Euro-Canadian with $t(348)=4.56$, $p<.001$. Males had higher expectancy than females.

The gender main effect with $F(1,534)=40.6$ $p<.001$ showed that males expected to complete the task in this trial in a shorter time-period than females.

D. Unsolvable Puzzle #2 (Presented with Reinforcement)

Table 44 contains results relating to expectancy in this trial.

Of the three main effects, only ethnicity and gender were significant. The ethnicity main effect $F(2,534)=20.8$, $p<.001$, Omega Squared=0.06 showed that Hong-Kong-Chinese adolescents expected to use the least amount of time to complete the task, Euro-Canadian were intermediate, and Chinese-Canadian the most. The t-tests showed that the Hong-Kong-Chinese group differed significantly from the Chinese-Canadian group with $t(358)=5.91$, $p<.001$, and from the Euro-Canadian group with $t(344)=3.61$, $p<.001$.

The gender main effect with $F(1,534)=12.9$, $p<.001$, Omega Squared=0.02 showed that males expected to complete the task in a shorter time-period in this trial than females.

TABLE 44

Expectancy for Unsolvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	3.05	.75
			OLDER	3.37	.66
		MALE	YOUNGER	3.08	.74
			OLDER	3.07	.87
CHINESE	CANADIAN	FEMALE	YOUNGER	3.70	.45
			OLDER	3.67	.51
		MALE	YOUNGER	3.40	.68
			OLDER	3.40	.54
EURO	CANADIAN	FEMALE	YOUNGER	3.55	.55
			OLDER	3.47	.75
		MALE	YOUNGER	3.25	.84
			OLDER	3.42	.57

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results:

Ethnicity main effect: $F(2,534)=20.8$, $p<.001$, Omega Squared= .06

Gender main effect: $F(1,534)=12.9$, $p<.001$, Omega Squared=.02

Hong-Kong-Chinese had the highest expectancy, Euro-Canadian were intermediate, and Chinese-Canadian lowest. Hong-Kong-Chinese differed significantly from Chinese-Canadian with $t(358)=5.91$, $p<.001$, and from Euro-Canadian with $t(344)=3.61$, $p<.001$. Males set higher level of expectancy than females.

Summary

Analyses on expectancy yielded the following trends.

I. Ethnic Difference

1. Of the three ethnic groups, Hong-Kong-Chinese adolescents had the highest expectancy in the first, third, and fourth trials. Euro-Canadian adolescents had the lowest expectancy in the first and third trials, and intermediate in the fourth trial. Chinese-Canadian adolescents were intermediate in the first and the third trials, and the lowest in the fourth trial.

2. There was no significant ethnicity differences in expectancy in the second trial.

II. Age Difference

1. Older adolescents had higher expectancy in the second trial than younger adolescents.

2. There was an absence of significant age difference in expectancy in the first, third, and fourth trials.

III. Gender Difference

Males set higher expectancy for performance in all trials than females in the present study.

Hypothesis 16: Realism in Expectancy Estimates

A. Solvable Puzzle #1

Table 45 contains results on realism in expectancy estimates.

Of the three main effects, only the ethnicity effect was significant with $F(2,534)=24.91$ $p<.001$, Omega Squared=0.06. Hong-Kong-Chinese group were most realistic in their expectancy estimates (i.e. least discrepancy between level of aspiration and expectancy), Euro-Canadian were intermediate, and Chinese-Canadian were least. The t-tests showed that the Chinese-Canadian group differed significantly from the Euro-Canadian group with $t(339)=6.48$, $p<.001$.

B. Solvable Puzzle #2 (Presented with Reinforcement)

Table 46 contains results relating to this trial.

Of the three main effects, ethnicity and gender were significant. The ethnicity main effect with $F(2,534)=11.18$, $p<.001$, Omega Squared=0.06 showed that Hong-Kong-Chinese adolescents were most realistic, Euro-Canadian were intermediate, and Chinese-Canadian were least. The t-tests showed that the Euro-Canadian group differed significantly from the Chinese-Canadian group with $t(33)=6.35$, $p<.001$.

The gender main effect with $F(1,534)=59.4$, $p<.001$, Omega Squared=0.05 showed that males adolescents were more realistic than female adolescents.

TABLE 45

Realism in Expectancy Estimates for Solvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	1.85	3.80
			OLDER	0.21	.36
		MALE	YOUNGER	1.96	3.97
			OLDER	0.07	.16
CHINESE	CANADIAN	FEMALE	YOUNGER	0.34	.43
			OLDER	0.38	.39
		MALE	YOUNGER	0.30	.44
			OLDER	0.33	.37
EURO	CANADIAN	FEMALE	YOUNGER	2.13	3.79
			OLDER	1.81	3.57
		MALE	YOUNGER	2.24	3.93
			OLDER	2.26	3.96

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results

Ethnicity main effect: $F(2,534)=24.91$ $p<.001$ Omega Squared=.06

Hong-Kong-Chinese adolescents were most realistic, Euro-Canadian were intermediate, and Chinese-Canadian were least. Chinese-Canadian differed significantly from Euro-Canadian with $t(339)=6.48$, $p<.001$. Chinese-Canadian differed significantly from Euro-Canadian with $t(339)=6.48$, $p<.001$.

TABLE 46

Realism in Expectancy Estimates for Solvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.07	3.71
			OLDER	0.32	.41
		MALE	YOUNGER	2.39	3.79
			OLDER	0.73	.55
CHINESE	CANADIAN	FEMALE	YOUNGER	0.60	.61
			OLDER	0.51	.57
		MALE	YOUNGER	0.82	.59
			OLDER	0.82	.62
EURO	CANADIAN	FEMALE	YOUNGER	2.16	3.77
			OLDER	1.87	3.56
		MALE	YOUNGER	2.42	3.84
			OLDER	2.58	3.82

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results

Ethnicity main effect: $F(2,534)=11.18$ $p<.001$ Omega Squared=.06

Gender main effect: $F(1,534)=59.4$ $p<.001$ Omega Squared=.05

Hong-Kong-Chinese were most realistic, Euro-Canadians were intermediate, Chinese-Canadians were least. Euro-Canadian differed significantly from Chinese-Canadian with $t(339)=6.35$, $p<.001$. Males more realistic than females.

C. Unsolvable Puzzle #1

Table 47 contains results relating to this trial.

Of the three main effects, only the ethnicity effect was significant with $F(534)=20.48$ $p<.001$, Omega Squared=0.07. This main effect showed that Chinese-Canadian adolescents were most realistic in their expectancy estimates, Hong-Kong-Chinese were intermediate, and Euro-Canadian were least. The t-tests showed that the Chinese-Canadian group differed significantly from the Euro-Canadian group with $t(339)=6.53$, $p<.001$.

D. Unsolvable Puzzle #2 (Presented with Reinforcement)

Table 48 contains results relating to this trial.

Of the three main effects, only ethnicity and gender were significant. The ethnicity main effect with $F(2,534)=7.89$, $p<.001$, Omega Squared=0.05 showed that the Hong-Kong-Chinese group was most realistic in their expectancy estimates, Euro-Canadian was intermediate, and Chinese-Canadian was least. The t-tests showed that the Chinese-Canadian group differed significantly from the Euro-Canadian group with $t(339)=5.81$, $p<.001$.

The gender main effect with $F(1,534)=34.3$ $p<.001$, Omega Squared=0.03 showed that females were less realistic in their expectancy than males.

TABLE 47

Realism in Expectancy Estimates for Unsolvable Puzzle #1

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	1.94	3.76
			OLDER	0.34	.58
		MALE	YOUNGER	2.39	3.79
			OLDER	0.58	.52
CHINESE	CANADIAN	FEMALE	YOUNGER	0.63	.57
			OLDER	0.50	.58
		MALE	YOUNGER	0.73	.43
			OLDER	0.59	.45
EURO	CANADIAN	FEMALE	YOUNGER	2.33	3.69
			OLDER	2.08	3.46
		MALE	YOUNGER	2.54	3.79
			OLDER	2.47	3.87

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Results

Ethnicity main effect: $F(2,534)=20.48$ $p<.001$ Omega Squared=.07

Chinese-Canadians were most realistic, Hong-Kong-Chinese were intermediate, and Euro-Canadians were least. Chinese-Canadian differed significantly from Euro-Canadian with $t(339)=6.53$, $p<.001$.

TABLE 48

Realism in Expectancy Estimates for Unsolvable Puzzle #2

				MEAN	S. D.
HONGKONG	CHINESE	FEMALE	YOUNGER	2.16	3.66
			OLDER	0.35	.41
		MALE	YOUNGER	2.07	3.92
			OLDER	0.21	.26
CHINESE	CANADIAN	FEMALE	YOUNGER	0.77	.67
			OLDER	0.67	.61
		MALE	YOUNGER	0.34	.39
			OLDER	0.29	.36
EURO	CANADIAN	FEMALE	YOUNGER	2.33	3.69
			OLDER	2.06	3.16
		MALE	YOUNGER	2.30	3.99
			OLDER	2.28	3.96

Note: The performance was measured in terms of minutes. 4 minutes was the maximum amount of time allowed.

ANOVA's Result:

Ethnicity main effect: $F(2,534)=7.89$, $p<.001$, Omega Squared=.05

Gender main effect: $F(1,534)=34.3$, $p<.001$, Omega Squared=.03

Hong-Kong-Chinese were most realistic, Euro-Canadians were intermediate, Chinese-Canadians were least. Chinese-Canadian differed significantly from the Euro-Canadian with $t(339)=5.81$, $p<.001$. Males were more realistic than females.

Summary

Analyses on the realism in expectancy estimates yielded the following trends:

I. Ethnic differences

1. Of the three ethnic groups, Hong-Kong-Chinese adolescents were most realistic in their expectancy estimates in the first, second, and fourth trials; Chinese-Canadian adolescents were least realistic in these trials; and Euro-Canadian adolescents were intermediate.

2. Chinese-Canadians were most realistic in the third trial, followed by the Hong-Kong-Chinese, and lastly by the Euro-Canadian adolescents.

II Age Difference

There was an absence of significant age difference in realism in expectancy estimates across all trials.

III. Gender Difference

1. There was a significant gender difference in the second and fourth trials showing that males were more realistic in their expectancy estimates than females.

2. There was no significant gender difference in realism in expectancy estimates in the first and third trials.

4.4 SUMMARY ON ACHIEVEMENT BEHAVIOR

Table 49A contains a summary of all statistically significant results on achievement behavior in the first and second trials. Table 49B contains results on the third and fourth trials.

I. Minimal Standard

1. Hong-Kong-Chinese adolescents set the highest minimal standard in both the first and fourth trials. Euro-Canadian adolescents set the lowest minimal standard in the first trial but in between the Hong-Kong-Chinese and Chinese-Canadian adolescents in the fourth trial. Chinese-Canadians' minimal standard was in between those of the Euro-Canadian and Hong-Kong-Chinese adolescents in the first trial but the lowest in the fourth trial.

2. Older adolescents set higher minimal standard than younger adolescents in the second trial.

3. Males set higher minimal standard in all trials than females.

II. Level of Aspiration

1. In the first trial, Hong-Kong-Chinese had the highest level of aspiration, Chinese-Canadian intermediate, and Euro-Canadian lowest.

Table 49A

F and Omega-Squared Values of Achievement Variables for the 1st and 2nd Trials.

		First Trial	Second Trial
M.S.	Ethnicity	F=30.06 Omega=.09 HKC(H);EC(L);CC(M)	
	Age		F=52.62 Omega=.04 Old(H); Young(L)
	Gender	F=39.0 Omega=.06 Male(H);Female(L)	F=583.8 Omega=.46 Male(H);Female(L)
L. A.	Ethnicity	F=24.87 Omega=.07 HKC(H);EC(L);CC(M)	
	Gender	F=59.0 Omega=.09 Male(H);Female(L)	F=455.0 Omega=.37 Male(H);Female(L)
EX.	Ethnicity	F=41.52 Omega=.12 HKC(H);EC(L);CC(M)	
	Age		F=24.23 Omega=.02 Old(H); Young(L)
	Gender	F=44.8 Omega=.07 Male(H);Female(L)	F=511.7 Omega=.44 Male(H);Female(L)
R. EX.	Ethnicity	F=24.90 Omega=.06 HKC(H);CC(L);EC(M)	F=11.18 Omega=.06 HKC(H);CC(L);EC(M)
	Gender		F=59.41 Omega=.05 Male(H);Female(L)

Note: Only F-values significant at p-values of <.001 are reported. Abbreviations: HKC=Hong-Kong-Chinese, CC=Chinese-Canadian, EC=Euro-Canadian. H=High, L=Low, M=Middle. M.S.=Minimal Standard L.A.=Level of Aspiration; EX=Expectancy; R.EX=Realism in Expectancy Estimates. Omega=Omega Squared Value. Old=Older adolescents; Young=Younger adolescents.

Table 49B

F and Omega-Squared Values of Achievement Variables for 3rd and 4th Trials.

		Third Trial	Fourth Trial
M.S.	Ethnicity		F=7.76 Omega=.02 HKC(H);EC(L);CC(M)
	Gender	F=58.5 Omega=.09 Male(H);Female(L)	F=13.5 Omega=.02 Male(H);Female(L)
L.A.	Gender	F=82.5 Omega=.12 Male(H);Female(L)	F=63.00 Omega=.09 Male(H);Female(L)
EX.	Ethnicity	F=14.50 Omega=.04 HKC(H);EC(L);CC(M)	F=20.8 Omega=.06 HKC(H);CC(L);EC(M)
	Gender	F=40.6 Omega=.06 Male(H);Female(L)	F=12.90 Omega=.02 Male(H);Female(L)
R. EX	Ethnicity		F=7.89 Omega=.05 HKC(H);CC(L);EC(M)
	Gender		F=34.30 Omega=.03 Male(H);Female(L)

Note: Only F-values significant at p-values of <.001 are reported. Abbreviations: HKC=Hong-Kong-Chinese, CC=Chinese-Canadian, EC=Euro-Canadian. H=High, L=Low, M=Middle. M.S.=Minimal Standard, L.A.=Level of Aspiration, EX=Expectancy, R.EX=Realism in Expectancy Estimates. Omega=Omega Squared Value. Old=Older adolescents, Young=Younger adolescents.

2. There was an absence of significant ethnicity difference in level of aspiration in the second, third, and fourth trials.

3. There was an absence of significant age difference in level of aspiration across all trials.

4. Males had higher level of aspiration in all trials than females.

III. Expectancy

1.In the first and the third trials, Hong-Kong-Chinese had the highest expectancy, followed by the Chinese-Canadian, and finally by the Euro-Canadian adolescents.

2. In the fourth trial, Hong-Kong-Chinese adolescents maintained to have the highest level of expectancy, followed by the Euro-Canadian adolescents, and finally by the Chinese-Canadian adolescents.

3. Older adolescents had higher level of expectancy than younger adolescents.

4. Males had higher level of expectancy than females.

IV. Realism in Expectancy Estimates

1. Hong-Kong-Chinese were most realistic in expectancy estimates in the first, second, and fourth trials. Chinese-Canadians were most realistic in the third trial.

2. Chinese-Canadian were least realistic in the first, second, and fourth trials. In these trials, Euro-Canadians were in the middle. Euro-Canadians were least realistic in the third trial.

3. There was an absence of significant age difference in realism in expectancy estimates across all trials.

4. Males were more realistic in their expectancy estimates than females.

Correlations between TAP and Achievement Behavior

I. Correlations between Causal Attributions in TAP and in each Achievement Trial

Data of both TAP and information on how adolescents attributed their performances in the four interviews in the achievement behavior session were correlated (Pearson-Product-Moment Correlations). All significant correlations between TAP and attributions in the achievement session are reported in Table 50. Three trends are derived from the correlations:

1. Attributing achievements to ability: Adolescents who have attributed self-success to ability in TAP also attributed their achievement outcomes to ability in the first (r=.18) and the third (r=.16) trials in the achievement-

TABLE 50

Correlations in Causal Attributions between TAP and each Achievement Trial

	Achievement Trials				
	Trial 1(A)	Trial 1(TD)	Trial 2(L)	Trial 3(A)	Trial 4(A)
SSA	r=.18			r=.16	
SSE		r=.15			
SSTD		r=.15			
SFL		r=-.16			
OFA			r=-.16		r=.16

Note: Only correlations that were significant at the $p<.001$ level are reported here.

Abbreviations: SS=Self-Success; SF=Self-Failure; OF=Other-Failure.

A=Ability; TD= Task Difficulty; L=Luck; E=Effort.

behavior session. Adolescents who attributed others' failures to low ability in the TAP also attributed their own achievement performances to ability in the fourth trial in the achievement behavior session (r=.16).

2. Attributing achievements to task difficulty: Adolescents who attributed their performances in the first trial to task-difficulty in the achievement behavior session also attributed self-success to task-difficulty (r=.15) and to effort (r=.15) in the TAP. Adolescents who attributed self-failures to bad luck in the TAP were less likely to attribute their achievement outcomes in the first trial to task-difficulty in the achievement behavior session (r=-.16).

3. Attributing achievements to luck: Adolescents who attributed other-failure to low ability in the TAP were less likely to attribute their achievements in the second trial to luck in the achievement behavior session (r=-.16).

There was an absence of significant correlations between attributing achievements to effort and the TAP.

II. Correlations between achievement trials

Data on how adolescents attributed their performances in each trial in the achievement session were correlated (Pearson-Product-Moment Correlations). Significant correlations between achievement trials are reported in Table 51. Four trends are derived from these correlations:

TABLE 51

Correlations in Causal Attributions between Achievement Trials

	Achievement Trials							
`	T1(A)	T1(E)	T1(TD)	T1(L)	T3(A)	T3(E)	T3(TD)	T3(L)
T2(A)	r=.33							
T2(E)		r=.16						
T2(TD)			r=.23					
T2(L)				r=.19				
T4(A)					r=.21			
T4(E)						r=.27		
T4(TD)							r=.34	
T4(L)								r=.25

Note: Only correlations that were significant at the $p<.001$ level are reported here.

Abbreviations: T=Trial.

A=Ability; TD= Task Difficulty; L=Luck; E=Effort.

1. Attributing performances to ability across trials: Significant positive correlations were found in the attributions of performances to ability in the first and second trials (r=.33) and in the third and fourth trials (r=.21). These correlations indicated that subjects who attributed their performances to ability in the first and the third trials also tended to do so in the second and the fourth trials, respectively. There was an absence of significant correlation between the second and the third trials.

2. Attributing performances to effort across trials: The significant positive correlations between the first and second trials (r=.16) and between the third and fourth trials (r=.27) in the attribution of performances to effort showed that adolescents who attributed their performances to effort in the first and the third trials would also do so in the third and the fourth trials, respectively. Performance on the second and third trials did not correlate significantly.

3. Attributing performances to task-difficulty across trials: The significant positive correlations between the first and second trials (r=.23) and between the third and fourth trials (r=.34) in the attribution of performance to task-difficulty showed that adolescents who attributed their performances to task-difficulty in the first trial would also do so in the second trial. Adolescents who attributed their performances to task-difficulty to the third trial would

also do so in the fourth trial. Performance on the second and third trials did not correlate significantly.

4. Attributing performances to luck across trials: There existed positive correlations in the attribution of performance to luck in the first and second trials (r=.19) and in the third and fourth trials (r=.25). These correlations showed that adolescents who attributed their performances to luck in the first trial would also do so in the second trial. Similarly, adolescents who attributed their performances to luck in the third trial would also do so in the fourth trial. Performance on the second and third trials did not correlate significantly.

III. Correlation between TAP and the pooled Achievement Attribution Data

In view of the positive correlation between first and second trials and between third and fourth trials in the way adolescents attributed their performances in the achievement behavior session, data on these correlated trials were pooled (i.e. pooled first trial with second trial; and pooled third trial with fourth trial) and correlated with each condition in the TAP. Results of the correlation procedure revealed a significant positive correlation of r=.18 between attribution of self-success to ability in the TAP and attribution of performance to ability in the pooled first and second trials. Such a correlation indicated that adolescents who perceived self-success to be a result of

ability also perceived their performances in the solvable puzzle trials (i.e. first and second trials) in the the achievement behavior session to be a result of their abilities.

There was an absence of significant correlation between the TAP and other pooled trials in the achievement behavior sessions.

Chapter V

DISCUSSION

5.1 SOCIALIZATION

A. Ethnicity-related Difference

The significant difference in socialization practices among Hong-Kong-Chinese, Chinese-Canadian, and Euro-Canadian parents as reported by their adolescent children in the CRPBI gives rise to two major findings in the present study. First, there exists a cultural difference in socialization techniques between Chinese (both Hong-Kong-Chinese and Chinese Canadian) and Euro-Canadian parents with Chinese parents utilizing low acceptance and high psychological control and Euro-Canadian parents utilizing high acceptance and low psychological control to control their adolescent children. Second, the finding that Chinese-Canadian parents are perceived to utilize more acceptance and less psychological control in their socialization practices than Hong-Kong-Chinese parents reflects that Chinese-Canadian parents have relaxed the traditional Chinese socialization practice to some extent and have adopted some western socialization techniques to control their adolescent children in the contemporary Canadian society. The discussion of these findings follows.

1. Cultural difference in socialization techniques: The significant difference in the perceived parental acceptance and psychological control as reported by the Euro-Canadian and Chinese adolescents reflects that the pattern of parent-child interactions and socialization goals are different between Euro-Canadian and Chinese parents. The CRPBI data clearly point out that within Euro-Canadian families, parent-child interactions are characterized by the parental use of nurturance and love-oriented techniques; and within these interactions, self-reliance and individualism are encouraged in the children. Within Chinese families (both Hong-Kong-Chinese and Chinese-Canadian), parent-child interactions are characterized by the parental use of guilt and power to control children; and within these interactions, conforming to parental wishes as well as controlling aggression and unwanted wishes are expected of the children. Consequently, while Euro-Canadian adolescents perceived their parents as warm and accepting, Chinese adolescents perceived their parents as restrictive and distant. In sum, the tradition pattern of exercising authority vertically and strictly from top to bottom or from parents to children in Chinese families is plainly revealed in the CRPBI data in the present study.

2. Socialization practice of Chinese-Canadian parents: The implication, that Chinese-Canadian parents have somewhat relaxed the traditional Chinese socialization practice and have incorporated some Euro-Canadian socialization tech-

niques in the practice, is based on two reasons. First, since most of the Chinese-Canadian parents have resided in Canada for more than fifteen years (based on the fact that most Chinese-Canadian adolescents in the present study were born in Canada), it is likely that they have been influenced by the views and goals of child-rearing in the dominant Euro-Canadian culture. With these influences, they adopt some of the Euro-Canadian socialization techniques by granting their children the acceptance and psychological control which differs from the traditional Chinese socialization practice. Second, in view of the fact that most Chinese-Canadian adolescents in the present study were born and raised in Canada, it is likely that they had acquired and accepted some of the Euro-Canadian values as a basis of their beliefs and behavioral standards. As integrating some of the Euro-Canadian values, especially independence and individuality, into the traditional Chinese culture can also help these Chinese-Canadian adolescents to gain acceptance from their Euro-Canadian peers, Chinese-Canadian parents must adjust their socialization practice in such a manner that these Euro-Canadian values can be practiced by their adolescent children. Since Chinese-Canadian parents still perceive the preservation of traditional Chinese cultural values as their socialization goal,[7] they can only grant

[7] The view that Chinese-Canadian parents would like to preserve Chinese cultural values is based not only on findings in CRPBI; but also on locus of control, causal attribution, and adolescent' perception of the importance of the family-honor.

their children the level of acceptance and psychological control that is just adequate for them to develop the extent of independence and individuality for gaining acceptance from their Euro-Canadian peers. Consequently, while the CRPBI data reflected that Chinese-Canadian parents had relaxed the traditional Chinese socialization practice on their children when compared with the Hong-Kong-Chinese parents, Chinese-Canadian adolescents still perceived their parents as distant, restrictive, and authoritative in comparison to Euro-Canadian adolescents.

B. Age-related difference in firm-control

The finding that younger adolescents perceived their parents to exercise more firm control on them than older adolescents suggested that children's age or level of cognitive maturity constituted an important factor in determining the type of discipline parents would need to employ to control their children. Such a finding clearly shows that the use of physical means to control children is more frequently practiced by parents when their children are in the stage of early adolescence than in later adolescence. Based on the age-difference in cognitive capabilities between younger and older adolescents, the rationale for parents to exercise more firm control on their younger adolescents than older adolescents can be observed. That is, as younger adolescents have not acquired the level of self-discipline to control their impulses and have not developed the cognitive level to

understand rules and to perceive possible consequences of their behaviors, parental use of firm control appears to be necessary to curb undesirable behaviors in these children. However, as older adolescents have reached the cognitive level by which verbal reasoning can be used to help them perceive the principles of the rules and restrictions as well as the negative aspects of their misbehaviors, the use of physical means to control their behavior becomes unnecessary. Consequently, while parents have to use firm control as a disciplining technique on their younger adolescent children, the use of psychological control is more effective in controlling their older adolescent children.

Summary

Data of the CRPBI yielded three major trends in the present study. First, patterns of parents-child interactions and socialization goals are different between Euro-Canadian and Chinese families. Euro-Canadian parents encourage self-reliance and independence; and utilize nurturance and love-oriented techniques in their child-rearing practice. Chinese parents expect their children to conform to parental wishes; and utilize guilt and power to control their children. Second, Chinese-Canadian parents have adopted some Euro-Canadian values in their socialization practice while still perceive the preservation of traditional Chinese values as the socialization goal. Third, younger adolescents

receive more firm control from their parents than older adolescents as a result of their cognitive immaturity or inability to understand rules and to perceive consequences of their behavior.

5.2 PERCEPTION OF FAMILY-HONOR-IMPORTANCE

The finding that Chinese-Canadian adolescents perceive their family-honor as of most importance, followed by Euro-Canadian adolescents, and finally by Hong-Kong-Chinese adolescents can be seen as a result of the contrast-group effect which generally occurs in a society containing different ethnic groups which treasure values that are different not only from one another but also from those of the majority group. In general, the greater the difference between an ethnic group and other groups (including the majority group), the greater the contrast-group effect between these groups. A direct result of this effect is to encourage members of each ethnic group to observe and to preserve its unique cultural characteristics in society. The tendency that both Chinese-Canadian and Euro-Canadian adolescents perceived their family-honor to be more important than their Hong-Kong-Chinese counterparts in the present study clearly shows that the contrast-group effect is more salient in the multicultural Canadian society than in the mostly Chinese-populated society of Hong Kong. Furthermore, the finding that Chinese-Canadian adolescents per-

ceive their family-honor to be more important than the Euro-Canadian adolescents also reflects that the cultural difference between the Chinese ethnic group and the majority group is greater than the cultural difference between the Euro-Canadian group (composed largely of Ukrainian-Canadians in the present study) and the majority group in the Canadian society. These cultural differences in turn affect the way Chinese-Canadian and Euro-Canadian adolescents develop their sense of cultural identity and belongingness in Canada.

The finding that Chinese-Canadian adolescents perceive their family-honor with more importance than their Hong-Kong-Chinese counterparts reflects the role of the family-honor in helping Chinese-Canadian adolescents develop and preserve their cultural identity and values that are distinctly different from those of other groups in Canada. Such a tendency of the Chinese-Canadian adolescents to utilize their family-honor as a tool to develop their cultural identity is obvious when one considers the value of family-honor in the traditional Chinese culture and observes the fact that these adolescents are residing in a society in which the cultural values of other groups are different from theirs and in which the availability of means and activities that would help them develop and maintain their cultural identity is low. Since the family-honor is seen as the root of one's ancestry and is always seen as a source of pride in the Chinese people, it becomes natural for the Chinese-Cana-

dian adolescents to utilize their family-honor as a means to preserve their ties with the traditional Chinese culture. Moreover, such a need of the Chinese-Canadian adolescents to observe the value and role of their family-honor is more intense when they do not have the traditional Chinese family and kinship system to relate themselves with. Consequently, unlike the Hong-Kong-Chinese adolescents who can establish their cultural identities through their relationships with their peers, relatives, and their extended kinship ties as well as through the various activities relating to the Chinese culture (e.g. celebrating Chinese New Year) in Hong Kong, Chinese-Canadian adolescents can mostly rely on their family-honor to establish their cultural identity.

Like the case of the Chinese-Canadian adolescents, the reasons why Euro-Canadian adolescents utilize their family-honor to establish their cultural identity could again be a result of their cultural difference from the majority group in Canada. Although these Euro-Canadian adolescents are largely Ukrainian-Canadians and are also residing in the part of Manitoba that has the highest number of Ukrainian-Canadians in the province whereupon they can identify themselves with their own cultural group without much awareness, it is their cultural difference from the majority group residing in other parts of the province that make them realize their cultural uniqueness. Since the cultural difference between Ukrainian-Canadian and the majority Canadian host group is smaller than that of the Chinese-Canadian and the

majority group, it is likely that these Ukrainian-Canadian adolescents would perceive their cultural identity to be less different from the majority group than the Chinese-Canadian adolescents. With these perceived cultural differences, the result that Chinese-Canadian adolescents perceive their family-honor with greater importance than their Euro-Canadian counterparts becomes a finding that one would expect in the present study.

Summary

The contrast-group effect between the majority and the Chinese-Canadian groups and between the majority and the Ukrainian-Canadian groups offers an explanation on the significant cultural difference in the perception of family-honor-importance among the Chinese-Canadian, Euro-Canadian, and Hong-Kong-Chinese adolescents in the present study. Chinese-Canadian adolescents perceive their family-honor as of most importance because of their distinct cultural difference from other ethnic groups in Canada (i.e. a strong contrast-group effect) and the fact that their family-honor, being perceived as the roots of their ancestry, offer them a means to help them develop their sense of cultural identity. Euro-Canadian adolescents perceive their family-honor with less importance in comparison to Chinese-Canadian adolescents because the cultural difference between Ukrainian-Canadian and the majority group in Canada is not as strong as

that between Chinese-Canadian and the majority group (i.e. weaker contrast-group effect). Finally, Hong-Kong-Chinese adolescents perceive their family-honor with least importance because they can establish their sense of cultural identity not only by means of their family honor but also by their relationships with their peers, relatives, and kinship ties.

5.3 LOCUS OF CONTROL

The finding that most adolescents in the present study, irrespective of age, gender, and ethnicity, are bilocal in their belief orientation can be explained in terms of: (1) the cognitive development that usually takes place in adolescence; and (2) the effects (i.e. social reality) of environment on the development of locus of control in these adolescents.

1. Cognitive development in adolescence: The bilocal belief of the adolescents as observed in the present study leads to an examination to the cognitive capability of these adolescents and the extent that their capability would enable them to develop a sense of personal control in the areas of education, politics, home-life, community affairs, and interpersonal relationships as covered by the Multicontent Locus of Control Measure. In this examination, the adolescents' ages and their levels in the formal operations stage are

considered. Being departed from the concrete operations stage and entered into the initial formal operational stage, younger adolescents are likely to have limitaticns on their capability and can only perform hypothetical thoughts on events closely relating to their daily-life experience. Since the Multicontent Locus of Control Measure gathers information on how adolescents perceive control of events that are beyond their concrete experience, it becomes difficult for these adolescents to utilize their newly-developed formal operational thinking to understand and to perceive control of these events. Consequently, with their cognitive limitations, they experience difficulty in conceptualizing the exact nature of these events as well as perceiving control of these events.

Lacking of opportunities to practice formal operational thinking in real-life situations as well as dependency on parents in areas of financial support and daily living in older adolescents are seen as factors leading to their bilocal beliefs. Although these adolescents are well in the formal operational stage and have the ability to conceptualize and reason abstractly in order to deal with the increasingly complex academic subjects at school, they may not have the opportunity to apply their cognitive ability to solve actual problems relating to the social, political, and educational systems in their society. As a result, these adolescents tended to have fairly strong external beliefs in

areas that required their cognitive and decision-making abilities.

2. Environmental effects on locus of control: The bilocal belief of the adolescents can also be explained in terms of the impact of their environment on them. The finding that both Hong-Kong-Chinese and Chinese-Canadian adolescents have fairly strong external beliefs reflects the presence of the traditional Chinese cultural values in these adolescents and the need of these adolescents to conform to the expectations placed on them in these values. As Hong Kong is a society in which the practice of the Chinese cultural values is performed by almost everyone, it is likely that adolescents of the Hong Kong society are more affected by the Chinese values than Chinese adolescents in Canada in which the practice of the Chinese cultural values is performed only by the Chinese members in the Canadian society. Since Chinese culture emphasizes on conformity to authority, parental wishes, and group-goal to maintain harmony in interpersonal relationships, Hong-Kong-Chinese adolescents, being more affected by these values, would be more situationally-oriented than Chinese-Canadian adolescents. With such a difference in the situation-centered orientation between Hong-Kong-Chinese and Chinese-Canadian adolescents, the difference in the degree of bilocality between the Hong-Kong-Chinese and the Chinese-Canadian respondents in the present study is explained. Indeed, the relationship between the practice of the Chinese cultural values and the bilocal belief orientation of the

Chinese-Canadian adolescents is clearly shown after comparing the locus of control scores of the Chinese-Canadian adolescents in the Greater Vancouver area (i.e. present study) and in Winnipeg (i.e. Mak, 1983); and finding that the Chinese-Canadian adolescents in the Greater Vancouver area are less externally-oriented than those in Winnipeg. The reason for the difference in externality between these adolescents is clear. Unlike Winnipeg, Vancouver is more urbanized and exposes its people to more modern western influences (e.g. modern clothing and music in teenagers). As a result of this continued exposure to these influences, it is less likely for the Chinese-Canadian adolescents in Vancouver to conform to all cultural expectations of the Chinese tradition. Consequently, these adolescents have a less external locus of control in comparison to their Chinese-Canadian counterparts in Winnipeg.

Agricultural life in rural Manitoba may be the factor responsible for the fairly strong external belief of the Euro-Canadian adolescents in the present study. Although modern machinery is used by today's farmers, much of their success in farming is still dependent on positive weather conditions and cooperation of the family members. Today, the elements of "togetherness" (Rosenblatt & Anderson, 1981) and of subordinating one's personal goal to that of the family or group (Schumm & Bollman, 1981) are still essential to ensure the continuity of farming in future generations and

to overcome difficulties associated with farming. Since these Euro-Canadian adolescents were born and raised in the rural farming communities, the value of these elements would be imposed on them early in life. They would be expected to observe or solve problems and to share responsibilities relating to farming. Having learned early in life to understand the importance of group-goals in farming and the fact that success in farming is dependent on external factors, such as good weather, farm children are generally externally-oriented individuals. The finding of the present study that Euro-Canadian adolescents are bilocal in their locus of control clearly reflects the presence of externality in addition to internality in the belief orientation in farm children in Manitoba. Indeed, the relationship between agricultural life and externality is clearly observed after comparing the locus of control scores of the Euro-Canadian adolescents in rural Manitoba (i.e. present study) and the city of Winnipeg (i.e. Mak, 1983); and finding that the Euro-Canadian adolescents in the city of Winnipeg are less externally-oriented than those in rural Manitoba. Since children in the city are less bound by responsibilities and external factors directly affecting their survival or quality of life, they perceive themselves to be less controlled by the environment. Having a less situationally-oriented belief, Euro-Canadian adolescents in the city are likely to have a less external locus of control than their Euro-Canadian counterparts in rural Manitoba.

Summary

Cognitive changes, opportunities to apply the abilities arising from the cognitive growth and environment are seen as major factors responsible for the bilocal locus of control of the adolescents in the present study. The fairly strong external belief in adolescents is seen as a result of a lack of opportunities to fully apply formal operational thinking to solve real-life problems as well as social reality (e.g. dependency on parents in essential areas of life) being imposed on these adolescents. Difference in externality between Hong-Kong-Chinese and Chinese-Canadian adolescents is seen to be related to the expectation of practicing Chinese cultural values in both Hong Kong and Chinese communities in Canada. External beliefs in Euro-Canadian adolescents is believed to a result of the agricultural life in Canada.

5.4 ADOLESCENT PERCEPTION OF FUTURE-CERTAINTY

1. Attaining chosen occupation ten years from present: The finding that all adolescents of the present study, irrespective of age, gender, and ethnicity, report moderate levels of uncertainty in attaining their chosen occupations may indicate that ten years from now, these adolescents will still be at school (e.g. attending university) or in a position in which they will be receiving training for their cho-

sen future occupations. Since most occupations in the modern world require an extended period of training, most young people must prepare themselves for the training relating to their chosen occupations before they can assure themselves of secure employment in the competitive world. As the adolescents in the present study will be in their twenties and in their training processes ten years from now, it is difficult for them to foresee with full certainty that they will attain their chosen occupations without the completion of their training. Consequently, they can only report with a moderate degree of certainty that they will attain their chosen occupations ten years from the present.

2. Expectations of social/political changes and considering these changes in future-planning: The findings that Hong-Kong-Chinese adolescents have: (1) expected most social and political changes ten years from the presents; (2) considered most of these changes in the planning of their future; and (3) perceived these changes as barriers affecting their future-planning support the predictions as hypothesized in the present study. With the takeover of Hong Kong by the Communist Chinese government in 1997, people in Hong Kong will be living in a social-political system which differs from that of the present Hong Kong society. They will have to practice a new set of social-political values and ideology as well as to adjust their present way of life to that which is typically found in most communist societies. Since most people in Hong Kong have never lived in a communist

society and have little understanding of the communist system, it is difficult for the younger generation to seek guidance on the planning of their future in a new society which begins in July 1997. Without adequate help, future-planning becomes an extremely complex and challenging task to the Hong-Kong-Chinese adolescents. The difficulties they experience can be seen in the present study from the way they expect social-political changes in Hong Kong, consider these changes in their future-planning, and perceive these changes as barriers affecting their overall planning.

Two reasons are gathered to explain why Chinese-Canadian adolescents of the present study expect the least social-political changes in their future and have least considered these changes as barriers affecting the overall planning of their future. First: these adolescents may be comparing the relatively stable social-political situation of the present Canadian society with that of the Hong Kong society. Although most Chinese-Canadian adolescents were born and raised in Canada, most of them still have relatives in Hong Kong and maintain contact with them. Through these contacts, the Chinese-Canadian adolescents could clearly observe the social-political changes that are taking place in Hong Kong and the difference in social-political situation between Canada and Hong Kong. Their awareness of the changes in Hong Kong further increases when they realize in Vancouver the presence of a high number of new immigrants from Hong Kong. With the knowledge that Hong Kong is undergoing social and

political changes, Chinese-Canadian adolescents could be comparing themselves with their Hong-Kong-Chinese counterparts when reporting expected social and political changes in Canada. Since the present Canadian society is more stable socially and politically than the present Hong Kong society, it becomes appropriate for Chinese-Canadian adolescents to expect least social-political changes in Canada and have least considered these changes as barriers affecting their future-planning.

Second: living in a large metropolitan city with more job opportunities may constitute a reason why Chinese-Canadian adolescents do not perceive social-political changes as a major problem affecting their future. As success of one's future is partly dependent on the availability of employment and the opportunity to challenge one's abilities, the presence of more job opportunities in Vancouver enables these adolescents to develop a sense of confidence that they will experience less difficulty in accomplishing their goals in the future. As a consequence, they do not perceive the need of leaving Vancouver to other places for their future and do not perceive social-political problems in Canada as major problems affecting their future-planning.

Economic difficulties associated with today's farming in Canada and low employment opportunities in rural communities are believed to be reasons why Euro-Canadian adolescents expect more social-political changes in their future and

consider more of these changes as barriers affecting their future-planning than their Chinese-Canadian counterparts in Vancouver. In addition to the fact that low economic opportunities in rural communities usually make finding appropriate employment difficult for young people, such a difficulty further increases when the major industry in these communities (i.e. farming) is affected by low grain prices as a result of the competitive foreign market in recent years. In view of low job opportunities and difficulties in the farming industry, most young people in rural Manitoba are leaving their communities for employment or better job opportunities in big cities. As they have to move to other places to establish their future, they will also experience more changes and adjustments in life. With these foreseeable difficulties in their future, it is reasonable for these Euro-Canadian adolescents to report that they expect much social and political changes in their life; and that these changes are also barriers to the overall planning of their future.

Summary

The moderate uncertainty of the adolescents to attain their chosen occupations ten years from the present indicates that they may still be attending school at that point and they cannot predict with full certainty at present that they will attain their chosen occupations in the future. The perception of social-political changes as a source of prob-

lem to their future by the Hong-Kong-Chinese adolescents reflects the major changes these adolescents may have to undergo in order to adapt to the new society of Hong Kong after the takeover by the Communist Chinese government in 1997. Chinese-Canadian adolescents consider social-political changes in Canada as a relatively small problem to their future as they may have compared the social-political situation of the present Canadian society with that of the Hong Kong society. More job opportunities in a large metropolitan city also enable them to have higher chances of securing employment. Euro-Canadian adolescents perceive some social-political changes in their future due to economic difficulties in today's farming and the need of most adolescents in rural areas to move to big cities for employment.

5.5 CAUSAL ATTRIBUTION

A. Cultural differences in attribution style

The significant cultural difference in the way Euro-Canadian and Chinese (i.e. both Hong-Kong-Chinese and Chinese-Canadian) adolescents attributed successes of others and failures of themselves in the present study clearly reflected the tendencies of making self-serving attributions to maintain self-esteem in the Euro-Canadian culture and of making self-effacing attributions to maintain harmony in interpersonal relationships in the traditional Chinese culture. The findings that Euro-Canadian adolescents attributed

self-failures to high task difficulty and others' successes to low task difficulty; and that Chinese adolescents (i.e. both Hong-Kong-Chinese and Chinese-Canadian) attributed self-failures to their lack of effort and others' successes to others' abilities demonstrated that Euro-Canadian adolescents blamed others for their failures and did not give others the credits for successes; and Chinese adolescents took responsibility for their failures and perceived the capability of others as a cause of others' successes. Such a cultural difference in the way Chinese and Euro-Canadian adolescents perceived causes of self-failures and other-successes must be examined in the context of cultural values as practiced by these adolescents. As the Euro-Canadian culture treasures independence and individuality, feelings of self-reliance and self-sufficiency for the development of a strong sense of self-esteem are fostered in Euro-Canadian children early in life. These children also learn to enhance the growth of self-esteem and avoid obstacles that would negatively affect its growth. By making external attributions in the case of failures, Euro-Canadian adolescents do not have to accept personal responsibility for their own failures and can also alleviate themselves from some of the negative affects associated with failure (e.g. shame, embarrassment). By doing so, they protect themselves as well as their self-esteem from the unpleasant consequences of failure. Such a tendency to protect their self-esteem is further observed from the way these adolescents

perceived successes of others. They do not accept others' successes as due to others' abilities or efforts but attribute success to external factors such as task difficulty. These Euro-Canadian adolescents protect their personal pride from the embarrassment arising from the fact that they do not work as hard and utilize as much of their abilities as others in their achievements. Thus, Euro-Canadian adolescents tend to perceive those causes that are least threatening to their personal pride and self-esteem in both self-failure and other-success attributions.

The attribution style of the Chinese adolescents in the present study can be explained in terms of the Chinese cultural values which treasure interdependence and cohesiveness between group members as well as placement of group goals before personal goals. By attributing their own personal failures to their lack of effort, Chinese adolescents practice their cultural expectation of not blaming others but accepting responsibility for failures. Based on this cultural expectation, Chinese adolescents practice humility and express gratitude for all good things others, especially their parents, have done for them. By being humble, responsible for their own failures, and grateful for the good deeds from others, Chinese adolescents gain group-approval and maintain harmony in the group. Such a tendency of strengthening group cohesiveness and acceptance from the group is also observed from the internal attributions of

others' successes by Chinese adolescents. Unlike Euro-Canadian adolescents who do not give others the credit for success by perceiving successes of others as results of easy task difficulty, Chinese adolescents give others the credit for success by perceiving abilities of others as causes for others' successes. Consequently, by accepting successes of others and giving others the credit for successes, Chinese adolescents accept others within their groups and do much to maintain the harmony in their groups.

B. Age Differences in Causal Attribution

1. Attributing success and failure to ability:

The finding that older adolescents are more likely to perceive ability as a determinant for their personal success as well as others' successes and failures than younger adolescents can be explained in terms of the difference in cognitive capability between younger and older adolescents. The belief of the older adolescents that ability is crucial to success and failure suggests the presence of cognitive expansion in the late adolescence stage and the awareness of the older adolescents that they must utilize their ability in order to attain success and to avoid failure. Since younger adolescents are less capable than older adolescents, younger adolescents generally receive help in their work (e.g. teachers' and parents' help in problem-solving) and are encouraged to overcome their cognitive limitations by spending more efforts in their work. With less capability,

more external help, and the encouragement to try hard in work, it is difficult for younger adolescents to sort out if the cause of their successes and failures is on their ability, effort, or external factors, such as help from parents. As a result, while older adolescents can clearly perceive the effectiveness of their ability as a determinant of their successes and failures, younger adolescents fail to identify the exact cause of their successes and failures. Since older adolescents realize that their successes and failures are dependent on the extent they utilize their ability, it is appropriate for them to attribute success of themselves as well as success and failure of others to ability.

2. Attributing success and failure to effort:

The perception of the older adolescents that their personal success and failure are related to the amount of effort they spent can be seen as a result of the increasingly complex work at school and the awareness that they must try their best as well as to utilize the most of their abilities in order to accomplish success. Since most academic work in senior high school years require adolescents to perform independently in individual work and to contribute personal efforts and capability in group work, older adolescents clearly observe the effectiveness of their efforts in achievement. With the understanding that their success is partly determined by the amount of effort they spent, it

becomes reasonable for these adolescents to attribute their personal success and failure to their efforts in the present study.

C. Gender Differences in Causal Attribution

1. Attributing success to efforts:

The finding that female adolescents are more likely to attribute success of themselves and others to effort than male adolescents supports most research findings on how societal sex-role expectations determine gender differences in achievement. As early as infancy, a child's identification is shaped by the societal definition of masculinity and femininity. In general, independence and autonomy are expected of boys; and conformity, dependence, and passivity are expected of girls. These sex-role characteristics are expected to be stabilized in an individual during adolescence in which preparation for adulthood takes place. To carry out the feminine traits and to gain social approval, female adolescents generally are less aggressive and set lower standard in achievement situations than male adolescents. In some cases, females may even deny success and ability in order to maintain a feminine image that is acceptable by society. By humbly attributing success to effort rather than to ability, female adolescents practice the socialized trait of dependability which, in turn, helps them to gain acceptance from both peers and society.

2. Attributing failures to bad luck:

The attribution of self-failures to bad luck in male adolescents reflect: (1) the tendency of the male adolescents to make self-serving attributions in the case of failure in order to protect self-esteem; and (2) their belief that ability and effort are important for success. Since these adolescents are brought up in a society (i.e. both Hong Kong and Canada) in which males are expected to be achievement-oriented individuals, these adolescents are likely to experience the pressure of accomplishing success in achievement. In view of the fact that failures are often results of not spending enough effort and/or not utilizing most of their ability, male adolescents tend to avoid the shame or uncomfortable feelings in achievement by attributing self-failures to external or unstable factors (e.g. bad luck). Consequently, male adolescents protect their self-esteem by attributing their failures to bad luck, an uncontrollable cause.

D. Causal Attribution and the Inadequacy of Locus of Control

Despite the fact that the Multicontent locus of Control Measure showed that there was an absence of significant cultural, age, and gender difference in locus of control in the present study and that most of the adolescents had fairly strong external beliefs in their belief orientation, the

Trent Attribution Profile showed that these adolescents did not merely attribute success and failure outcomes to external factors. Instead, they attributed outcomes to both internal-external as well as stable-unstable factors depending on the nature of the situation (e.g. success/failure of self vs. success/failure of others). In view of the fact that individuals with rather strong external beliefs (assessed by a locus of control scale) do not always perceive external factors as causes of outcomes, the adequacy of explaining human behaviors simply in terms of locus of control becomes questionable. On the basis of the present findings, locus of control is seen as inadequate in terms of two aspects; namely: (1) human beings cannot be categorized simply into internals and externals; and (2) human beings do not attribute event outcomes simply in terms of internal/external factors.

1. Categorizing human beings into internals and externals: In view of the fact that the adolescents attribute event outcomes to both internal-external as well as stable-unstable factors and the fact that their scores in the Multicontent Locus of Control Measure fall close to the mid-point of the internality-externality dimension reflecting a low level of externality, these adolescents can be classified as bilocals whose belief orientations are not in the extremes of the internality-externality dimension. As these adolescents have a flexible belief orientation which can be switched between internality and externality, it is inadequate to

study their locus of control simply by relying on their scores in the Multicontent Locus of Control Measure which classifies belief orientation of human beings as either internal or external. In view of the fact that much of the information revealing the presence of bilocally-oriented individuals in the present study would be lost if only the scores in the Multicontent Locus of Control Measure were used to interpret the belief orientation of these adolescents, it is suggested that a more thorough examination of a locus of control score must be performed in order to determine the belief orientation of an individual. Finally, it is also suggested that locus of control exists beyond the categories of internals and externals. It can be categorized into internal, externals, and bilocals.

2. Attributing event outcomes beyond internal/external factors: The way adolescents attribute success and failure outcomes in the present study clearly reflects how the variability in attribution styles in adolescents is affected by culture, sex-role expectations, and age-difference. Since all human beings are socialized according to their cultural and social expectations, it is likely that they would develop an attribution style that is acceptable by both their culture and society. To maximize acceptance from culture and society, human beings must carefully examine event outcomes and assign appropriate causes to outcomes. As causes can occur along the dimensions of internality-externality and stability-unstability, an externally-oriented individual may

assign causes that are both internal and stable (e.g. ability); and an internally-oriented individual may assign causes that are both external and unstable (e.g. luck). In view of the fact that the assignment of causes to an event outcome is often governed by the nature of the event outcome (e.g. self-failure situations) and the consequences following the assignment of the causes (e.g. to reduce embarrassment), attribution styles cannot be predicted simply in terms of locus of control. Instead, factors such as cultural background, social expectations, and cognitive capacity must be considered. Consequently, it is suggested that locus of control alone is not sufficient to provide the necessary information for the understanding of how human beings attribute event outcomes.

Summary

The cultural difference in attribution style between Euro-Canadian and Chinese (both Hong-Kong--Chinese and Chinese-Canadian) adolescents is seen as a result of their cultural values. The self-serving attributions of the Euro-Canadian adolescents reflected the importance of maintaining self-esteem in the Euro-Canadian culture. The self-effacing attributions of the Chinese adolescents reflected the importance of maintaining group-harmony in the Chinese culture. Older adolescents attributed event outcomes to ability and effort because of their cognitive expansion in late adoles-

cence and the need to work hard to meet demands placed on them at school. Female adolescents attributed success to effort more than male adolescents because females tended to downplay cognitive capabilities to gain social approval and acceptance. Male adolescents attributed failure to bad luck in order to protect their self-esteem in case of failure. An examination of the locus of control scores and the attribution styles of the adolescents reflected the need of categorizing human beings beyond the categories of internals and externals. It is suggested that the categories of internal, externals, and bilocals should be considered. Furthermore, the attribution styles of the adolescents also pointed out the insufficiency of locus of control as a predictor of attribution style. In addition to locus of control, factors such as cultural background, sex-role expectations, cognitive capacity, nature of the event outcome, and consequences following the assignment of causes to the event outcome are also determinants of how an individual would attribute event outcomes.

5.6 ACHIEVEMENT BEHAVIOR

I. Ethnicity-related Difference

A. Hong-Kong-Chinese Adolescents

The achievement-oriented tendency of the Hong-Kong-Chinese adolescents as reflected in their high minimal stan-

dard, level of aspiration, and realism in expectancy estimates can be explained in terms of: (1) the education system of Hong Kong; and (2) the attribution style of the Hong-Kong-Chinese adolescents.

1. Education system of Hong Kong: The high level of expectation of the Hong-Kong-Chinese adolescents in all achievement trials in the present study clearly reflects their serious attitude in performance and their need of achieving well in competitions. In Hong Kong, the pyramidal education system provides these adolescents with extremely limited opportunities for higher training. In addition, Hong-Kong-Chinese adolescents are required to pass extremely competitive examinations in order to enter schools and programs of their choice. Therefore, Hong-Kong-Chinese adolescents learn at an early age the importance of achieving excellence in school work. To attain the goal of accomplishing success and avoiding failure in competitions, they would likely observe the demands of each competition and carefully estimate their abilities in relationship to the demands. Since the achievement tasks of the present study are within their abilities and since they learn to set high levels of performance in competitions at an early age, it is likely that they also set high minimal standards in all achievement trials in the present study. Furthermore, by expecting of themselves to utilize the best of their abilities in achievements, these adolescents use their ability as a basis to calculate the amount of time they may need to use in order

to complete tasks in achievement situations. In the present study, as these adolescents estimated their task-performance according to their ability levels, they not only were realistic in their expectancy estimates in all achievement trials but also had the highest expectancy and level of aspiration in comparison to their Chinese-Canadian and Euro-Canadian counterparts.

2. The attribution of the Hong-Kong-Chinese adolescents: The perception of the Hong-Kong-Chinese adolescents that self-failures are not results of task difficulty but of one's not trying hard enough in the achievement situation (a tendency reflected in the Trent Attribution Profile) also explains their achievement-oriented tendency in the present study. With the perception that utilizing the best of their abilities and efforts is important for the accomplishment of success, Hong-Kong-Chinese adolescents set out to challenge their abilities and efforts in all achievement situations. By placing on themselves the demand of doing well and believing that they should be responsible for their own failures in achievement, Hong-Kong-Chinese strive for excellence in achievement as well as accept difficulties in achievement by performing their best to solve and to overcome them. Indeed, such an achievement tendency is clearly reflected in their high minimal standard, expectancy, and level of aspiration in achievement tasks in the present study.

B. Chinese-Canadian Adolescents

The achievement-oriented tendency of the Chinese-Canadian adolescents can be seen as a result of the Canadian education system which places less emphasis on examinations in comparison to the Hong Kong education system. Being educated in a more relaxed education system, Chinese-Canadian adolescents are less likely to engage in competitive situations in which they have to challenge their abilities in order to avoid failure in these situations. As Chinese-Canadian adolescents also have more educational opportunities in Canada, they do not have to participate in as many competitive examination as the Hong-Kong-Chinese adolescents before they can enter college and universities for higher education. Consequently, with less exposure to competitions which challenge their abilities, Chinese-Canadian adolescents do not have to demand highly of themselves in achievement situations. They may also place a lower level of expectation on their performance and place less value on achieving well in achievement situations. Thus, in comparison to the Hong-Kong-Chinese adolescents, the Chinese-Canadian adolescents set lower minimal standard, expectancy, and level of aspiration in all achievement trials in the present study.

The achievement-oriented tendency of the Chinese-Canadian adolescents may also be explained in terms of their inadequate understanding of the importance of achieving and striving for excellence in order to gain upward mobility and

higher socio-economic status in the Canadian society. Their inadequate understanding could directly be related to their belief that the expected social-political changes in Canada do not really interfere with their future-planning and to their perceived certainty in attaining their future occupations in Vancouver ten years from the present (findings from the "Adolescent Perception of Future-Certainty" questionnaire). By comparing the concurrent social-political situation of Canada with the possible social-political changes in Hong Kong ten years from the present and by having an optimistic view of their future in Canada, Chinese-Canadian adolescents may not be aware of the subtleties existing in the socio-economic system in the Canadian society. Some of the subtleties include strengthening of abilities in order to secure employment and to raise socio-economic status in society, and the ability to function as well as to explore opportunities on one's own. With the simplistic view of the socio-economic system of the Canadian society and with the perception that they will not have to experience as much difficulties in attaining their future occupations in Canada as adolescents in other countries (e.g. Hong Kong), Chinese-Canadian adolescents are likely to be less serious in their achievements in comparison to adolescents in countries which do not have as much job opportunities as in Canada. With a less serious attitude in achievement, Chinese-Canadian adolescents are likely to exhibit a weak approach tendency in achievement situations. Indeed, their weak achievement ten-

dency is plainly revealed in their low estimates in minimal standard, expectancy, and level of aspiration in the present study.

C. Euro-Canadian Adolescents

The achievement-tendency of the Euro-Canadian adolescents can be explained in terms of their attribution style as reflected in the data of the Trent Attribution Profile. Their attribution of self-failure to task difficulty not only indicates their tendency of making self-serving attributions in the case of failures so as to protect their self-esteem in these situations but also points out their reluctance of accepting responsibility for failures and of challenging their abilities to overcome difficulties in achievement. Since setting high standards of performance for oneself usually involves the yielding of greater effort to meet the standards, more chances of failing the standards, and greater likelihood of facing undesirable consequences associated with failures, it is generally easier for oneself if lower standards of performance are set for achievement. In the case of the Euro-Canadian respondents whose goal in achievement is to avoid failures (as inferred from the Trent Attribution Profile data), setting lower standards for achievement becomes a means to help them fulfil this goal. Extending from this goal, they set lower min-

imal standard, expectancy, and level of aspiration on achievement tasks in the present study.

II. Age Difference in Achievement

The difference in approach tendencies between younger and older adolescents in achievement with older adolescents setting higher minimal standard than younger adolescents supported the age-related or stage-related concept in achievement. As a risk-taking behavior, achievement behavior requires people to challenge their abilities so as to maximize success and to minimize failures in achievement situations. Thus, to attain success, individual must possess self-confidence as well as the skills required for the accomplishment of the task. Since the achievement tasks of the present study requires visual-spatial ability (an ability that develops over time), it is within the expectation that the older adolescents would set a higher level of expectation on their performances than their younger counterparts. Indeed, the self-confidence and the perceived capability of the older adolescents are clearly reflected in their responses in the Trent Attribution Profile. By reporting that success and failure are directly related to ability and effort in the Trent Attribution Profile, older adolescents imply that they have more skills and capabilities as a result of their cognitive development in the late adolescence stage and that they are aware of the importance of using their skills and capabilities in achievement situ-

ations in order to attain success and to avoid failure. Consequently, with greater awareness of their cognitive capability, greater self-confidence that occurs along with this awareness, and the realization of utilizing their capability to do well in achievement, it is likely for the older adolescents to be more achievement-oriented than the younger adolescents in the present study.

III. Gender Difference in Achievement

Gender difference in achievement as observed in the present study could be a result of two factors; namely: (i) task preference and perceived importance of the task; and (ii) effects of socialization on achievement.

1. Task preference and perceived importance of task: Research on Developmental Psychology that finds difference in cognitive performance between male and female children is due to difference in task preference rather than cognitive abilities between the two genders supports present study. Results of the present study show that the observed gender difference in achievement behavior is largely a result of task preference rather than differences in problem-solving strategies between the male and the female respondents. Responses relating to the attainment values indicated that the achievement tasks of the present study were strongly preferred by the male respondents. Since the achievement tasks were composed of geometric puzzles requiring visual-

spatial reasoning skills, they tended to favor male adolescents and not female adolescents. Indeed, studies have shown that as early as infancy, girls seem to have a relative advantage in verbal tasks and boys in visual-spatial tasks; and such a difference in tendencies have led to much difference in academic goals and occupational choices between males and females. In general, girls are expected to concentrate on verbal skills and social relations; and boys on mechanical and scientific matters. Since male adolescents have learned to perform well in visual-spatial task and to perceive these tasks with importance since early life, it becomes natural for males to expect good performance by means of setting high minimal standard, expectancy, and level of aspiration in these tasks. Such a tendency to expect high performance in these tasks was plainly revealed in the present study. In sum, the gender difference in achievement as observed in the present study supported the view (i.e. the Crandall model) that there exists a positive relationship between approach-tendency and attainment value in achievement.

2. Effects of socialization on achievement: The low achievement-oriented tendency of the female adolescents in the present study can also be seen as a result of sex-role expectations in society. Having socialized since early life that femininity means being less competitive in achievement situations, being conforming to restrictions and authority, and being modest of one's ability, females learn to be pas-

sive and less achieving in order to gain social approval and acceptance. They also place lower expectations on their performances and tend to deny success in achievement (Horner, 1976). Since female adolescents do not expect high achievement for themselves generally (due to cultural stereotypes), it is reasonable for them to set low minimal standard, expectancy, and level of aspiration in the achievement tasks in the present study. Indeed, the effasiveness of the female adolescents in achievement situations is clearly reflected in their attribution styles as examined by the Trent Attribution Profile. Unlike male adolescents who attributed self-failures to bad luck, female adolescents claimed responsibility for their failures by attributing their failures to their lack of efforts. By perceiving self-failures as their own failures, female adolescents imply that they would take a passive role in achievement situations and would accept, rather than reject, blames for failures. In order to minimize failures so as to reduce chances of self-blames, it is likely that females would avoid situations in which competitions and evaluations may occur. Consequently, the low achievement-oriented tendency of the female adolescents can be seen as a result of their avoidance of achievement situations.

Summary

The high achievement-oriented tendency of the Hong-Kong-Chinese adolescents is seen as a result of their attribution style and the education system of Hong Kong. The low achievement tendency of the Chinese-Canadian adolescents is believed to be a result of the more relaxed education system of Canada and the inadequate understanding of the Chinese-Canadian adolescents about the socio-economic system of the Canadian society. Since Euro-Canadian adolescents are reluctant to accept responsibilities associated with failures in achievement situations, it would be easier for them to set a low level of expectation on their performance in order to avoid chances of failures. The age difference in achievement is seen as a result of cognitive growth in late adolescence. Sex-role expectations in society and task preference are believed to be reasons for the gender difference in achievement.

5.7 SUMMARY ON ALL FINDINGS OF THE PRESENT STUDY

Several trends emerged from the present study pointing out the presence of an interactive framework essential for achievement behavior in adolescence. Within this framework, parental socialization practice, adolescent perception of family-honor-importance, perception of future-certainty, locus of control, style of attributing success and failure of self versus others, task preference, nature of achieve-

ment task, cognitive capability in relationship to the achievement task, and goals to be reached in the achievement situations have all played an important role in achievement behavior in adolescents. Within the area of socialization, parents employ socialization techniques that help them to curb undesirable behaviors from their children as well as enable their children to practice traditional values that are treasured by their cultures. CRPBI data showed that Chinese parents (both Hong-Kong-Chinese and Chinese-Canadian) use guilt and power to control their children and expect their children to conform to their wishes. Euro-Canadian parents use love-oriented techniques on their children and encourage self-reliance and independence in their children. Such a difference in socialization practice between Chinese and Euro-Canadian parents leads to much difference in areas of identity development and belief orientation in their adolescent children. These differences in turn affect achievement behavior in their adolescents.

In the area of identity development, the distinct cultural influences transmitted through the process of socialization shape the cultural identity of adolescents and encourage them to exercise those values that are perceived to be important by their own culture. The awareness of cultural distinctiveness is strong in the multicultural society of Canada in which contrast-group effect is present. The present study shows that cultural values as well as adolescents' perceived importance of their family-honor are essen-

tial to the function of cultural identity in adolescents residing in the Canadian society in which activities crucial to the preservation of their cultural values are rare. Cultural identity has shown to play an important role on adolescent behavior and belief orientation. Being influenced by the traditional Chinese cultural values and by their perceived importance of their family-honor, Chinese adolescents (both Hong-Kong-Chinese and Chinese-Canadian) place group-goals before their own personal goals and achieve so as to bring credit to their own families. The tendency of conforming to group goals in Chinese adolescents leads them to develop a belief orientation that event outcomes are controlled by external factors rather than by themselves. Their practice of maintaining group-harmony as well as bringing credits to the group leads them to develop an attribution style of perceiving self-failures to be their own faults of not trying hard enough in achievement situations and others' successes as results of others' abilities. Consequently, while there exists a difference in achievement tendencies between Hong-Kong-Chinese and Chinese-Canadian adolescents in the present study (the difference is explained below), much of their achievement behavior can be understood in terms of their attribution styles.

The maintenance of the cultural identity of the Euro-Canadian adolescents by practicing those aspects of the cultural values which involve the development of individuality and achievement to attain credits for themselves leads Euro-Can-

adians to practice self-reliance and to develop a belief orientation that event outcomes are partly within their control. They also develop an attribution style of attributing self-failures and others' successes to external factors (e.g. task difficulty) and failures of others to internal factors (e.g. lack of effort). With such an attribution style, Euro-Canadian adolescents protect their self-esteem in situations where others are performing better than them as well as prevent themselves from shame and embarrassment in the case of self-failures. Thus, with the goal of avoiding failures in order to maintain their self-esteem, Euro-Canadian adolescents set lower minimal standard, expectancy, and level of aspiration in their achievement tasks in the present study. Indeed, their achievement-oriented tendency is clearly understood in terms of their attribution styles.

Besides cultural values, environment also plays an essential role on achievement. In the present study, environment has shown to have an impact on adolescent achievement in terms of three areas; namely, (1) sex-role expectations; (2) social-political stability; and (3) education system. The societal expectations that females are to be less competitive than males in achievement situations has led to significant gender differences in attribution style and achievement tendencies in the present study. The Trent Attribution Profile has shown that female respondents have a more passive attribution style than male respondents. Unlike male

adolescents who attributed self-failures to bad luck and other-success to easy task-difficulty, female adolescents attributed self-failures to their lack of effort and other-success to others' effort. Being socialized to be less aggressive in competitive situations, females hold lower internal expectations on their achievement. Such a low expectation is clearly reflected in the low minimal standard, expectancy, and level of aspiration in achievement in the present study.

The perception of the Chinese-Canadian adolescents that Canada is a more stabilized society and offers more job opportunities than Hong Kong contributes to the difference in achievement behavior between Hong-Kong-Chinese and Chinese-Canadian adolescents in the present study. Despite the fact that both Chinese-Canadian and Hong-Kong-Chinese adolescents are being influenced by the traditional Chinese cultural values and have similar belief orientations and attribution styles, they do not have similar approach tendencies in achievement situations. The low achievement tendencies of the Chinese-Canadians in the present study can be seen as a result of their optimistic view of the socio-economic system of the Canadian society. By perceiving Canada to be more stabilized and to have a less competitive job market than Hong Kong, Chinese-Canadian adolescents exhibited lower achievement tendencies than their Hong-Kong-Chinese counterparts who understand that achievement and hard work are the keys to a good future in the competitive and less

stabilized society of Hong Kong. In sum, socio-political stability of a country and availability of opportunities for future advancement seem to have an impact on achievement orientation of adolescence.

The difference in the Hong Kong and the Canadian education systems is also a factor responsible for differences in achievement tendencies of the Hong-Kong-Chinese, Chinese-Canadian, and Euro-Canadian respondents. Being educated in an education system which focuses on competitions and does not offer adequate educational opportunities, Hong-Kong-Chinese adolescents learn the importance of achieving well by setting standards for themselves in each achievement since their early life. Their high standards of performance are clearly revealed in the achievement task in the present study.

Cognitive maturity is another factor which has an impact on achievement in adolescence. The age difference in achievement tendencies in the present study shows that achievement in adolescents is not only affected by socialization and environmental factors but also by the cognitive capacity of the adolescents. Since younger adolescents had less cognitive capability for the achievement tasks than older adolescents, younger adolescents set lower standard for their performance and expected to complete the tasks in longer time-periods than older adolescents. By doing so,

younger adolescents displayed a weaker achievement tendency than older adolescents.

Task preferences, influenced by early socialization and abilities tend to favor certain cognitive tasks, and therefore are determinants for achievement behavior in adolescence. The low achievement tendency of the female respondents is seen as a result of their low preference of the achievement task. Along with the societal expectation that females are to be less competitive in achievement situations, their low task preference simply further reduces their approach tendencies in the achievement situation in the present study.

Finally, the satisfaction of the self-imposed standard of excellence is also seen as a factor affecting achievement behavior in adolescents. The performance of the adolescents in the achievement-task session of the present study clearly reflects that achievement behavior was a result of a series of cognitive processes. In these processes, adolescents set for themselves limits on their performances as well as targets to be attained in achievement situations. In this study, replies of the adolescents in response to the experimenter's questions relating to their expectations of their performances showed that before the actual execution of the tasks, adolescents had already made careful calculations on their performances based on their own skills and capacities

in the achievement tasks. They set a time limit for the completion of task (i.e. minimal standard), established a self-imposed standard to gauge their own performance (i.e. level of aspiration), and set for themselves the expected performances in the achievement situation (i.e. expectancy). Persistence and a change of strategy in solving the puzzles occurred when the actual performance failed to reach the self-imposed standards. In sum, setting up a standard for oneself and challenging the standard in the achievement situation so as to maximize the affective value of success and to acquire a new sense of effectiveness forms a basis of achievement behavior in adolescence.

In summary, findings of the present study clearly demonstrated a link between achievement behavior in adolecents and factors affecting the overall development of adolescents. Some of these factors have their impact on the adolescents since early childhood. These factors include: cultural values and identity, parental socialization techniques, sex-role expectations of society, belief orientation, and attribution style. Other factors include: adolescents' perceived social-political stability and job opportunities in their future, task preference, cognitive capability, as well as self-imposed standards in achievement situations and the extent they can reach their standards in these situations.

5.8 IMPLICATIONS OF THE FINDINGS AND DIRECTIONS SUGGESTED FOR FUTURE RESEARCH

Two major implications were derived from the findings of the present study. First: achievement behavior is a highly complex phenomenon which is determined by several factors. In disagreement with the postulations of the achievement models, the findings show that achievement behavior is not determined simply by the interaction between the motive to approach success, incentive value of the task, and probability of success (i.e. the Atkinson model), the perceived controllability of event outcomes (i.e. the locus of control model), nor by the interaction between the attainment value of the task and the discrepancy between the minimal standard and expectancy (i.e. the Crandall model). Instead, achievement behavior is also strongly governed by cultural values, societal expectations, parental socialization techniques, and attribution styles which have an impact on an individual since early life. When the adolescence stage is reached, achievement behavior is further governed by the perceived future social-political stability and job opportunities in society. Despite the fact that the present study has shown that these factors have played a significant role in achievement behavior in adolescents, it does not eliminate the possibility that there may still be other factors which are essential to adolescent achievement behaviors. The exploration of these factors has to be performed in future research.

Second: the achievement models fail to adequately explain achievement behavior in adolescents. Since the achievement models did not include those variables which have been shown to have an impact on achievement behavior in adolescents, explaining achievement-oriented tendencies strictly in terms of the postulations of the achievement models will only give rise to a partial understanding of the concept of achievement behavior in adolescents. Both the Crandall and the Atkinson models place heavy emphasis on the impact of achievement situations on achievement behavior and neglect those variables which occupy an equally important role on adolescent achievement. Specifically, they overlook the role of culture and environmental influences on adolescent achievement. In addition to those weaknesses which the Crandall and the Atkinson models have, the locus of control model ignored how stability-unstability factors could affect achievement behavior. By postulating that achievement behavior is a function of internality-externality, the locus of control model cannot thoroughly explain achievement behavior in adolescents. In sum, all three achievement models have been shown to have a very narrow view of achievement behavior.

In view of the implications derived from the findings, it is the thrust of the present study to suggest that achievement behavior of different cultural groups should be studied in the future in order to explore achievement factors that

are not included in the achievement models. Since achievement behavior begins early in life and continues through life, a longitudinal study on achievement behavior would also be fruitful to the understanding of the concept. Finally, as achievement behavior is also influenced by social-political stability, comparisons in achievement behavior between people from different societies in future research would yield valuable information toward the understanding of achievement behavior.

5.9 CONTRIBUTION OF THE PRESENT STUDY

The present study has two major contributions. They are: (1) it broadens our view of achievement behavior; and (2) it reminds educators to observe the cultural background of their students in order to gain a meaningful understanding of the achievement tendencies of their students.

(i) Broadening our view of achievement behavior: The present study can be seen as of value to future research in the area of achievement behavior. The findings pinpoint the importance of looking beyond the limited domains of the achievement models and exploring other achievement-related variables that are not included in the models.

(ii) Considering cultural background of students in achievement: The present study can be seen as of value to the Canadian education system which has a student population

of different cultural backgrounds. Since cultural value is a determinant of achievement behavior, understanding of the cultural background of each student by teachers would enable teachers to understand their students' attitudes, approach-tendencies, and goals in achievement situations. They would also utilize appropriate teaching methods to facilitate the learning process of the students (e.g. team-work versus individual work). Such an approach to understanding students' cultural backgrounds by teachers is particularly important in today's Canadian education system due to the increasing number of new immigrant children in the education system. By understanding the cultural backgrounds of these immigrant school children, teachers not only help these students adjust to the Canadian education system but also help these students to reduce cultural conflicts which usually occur when they have to adjust to a new society.

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Appendix A

INFORMATION ON INSTRUMENTS OF PRESENT STUDY

Instruments:

(a) Questionnaires; and

(b) Achievement-related tasks.

1. Children Report of Parent Behavior Inventory (CRPBI):

-measures ethnicity, gender, and age-group difference in socialization along the dimensions of:

(i) perceived maternal and paternal acceptance;

(ii) perceived maternal and paternal psychological control;

(iii) perecieved maternal and paternal firm control.

2. Multicontent Locus of Control Measure (MLC):

-measured ethnicity, gender, and age-group differeences in locus of control. MLC classifies locus of control in terms of:

(i) internality; and

(ii) externality.

3. Trent Attribution Profile (TAP):

-measured ethnicity, gender, and age-group differences in causal attribution. TAP identifies how human beings attribute self-success, self-failure, other-success, and other-failure to:

(a) ability;

(b) effort;

(c) luck; and

(d) task difficulty.

4. A Questionnaire on the Perception of the Importance of Family Honor:

-measured ethnicity, gender, and age-differences in adolescent perception of the importance of family honor.

5. A Questionnaire on Adolescent Perception of Future-Certainty:

-measured ethnicity, gender, and age-group differences in perception of future-certainty in terms of:

(a) certainty in attaining chosen occupation ten years from the present;

(b) expectation of social-political changes ten years from the present;

(c) considering social-political changes in planning of the future; and

(d) the degree that the social-political changes have affected overall future-planning.

6. Achievement-related tasks:

The achievement-related were two solvable and two unsolvable puzzles. Adolescents were given a time-limit of 4 minutes to solve each puzzle. In these tasks, ethnicity, gender, and age-group differences in four achievement-related variables were measured. These variables included:

(a) minimal standard;

(b) level of aspiration;

(c) expectancy; and

(d) realism of expectancu estimates.

Appendix B

CHILDREN'S REPORT OF PARENT BEHAVIOR INVENTORY

Instructions

Please read each statement on the following pages and circle the answer that most closely describes the way your parents acts toward you. BE SURE TO MARK EACH ANSWER FOR EACH PARENT.

If you think the statement is LIKE your parent, circle L.

If you think the statement is SOMEWHAT LIKE your parent, circle SL.

If you think the statement is NOT LIKE your parent, circle NL.

FORM A: Form for MOTHER

	Like	Some-what Like	Not Like
1. Makes me feel better after talking over my worries with her.	L	SL	NL
2. Isn't very patient with me.	L	SL	NL
3. Sees to it that I know exactly what I may or may not do.	L	SL	NL
4. Wants to know exactly where I am and what I am doing.	L	SL	NL
5. Soon forgets a rule she has made.	L	SL	NL
6. Is very easy with me.	L	SL	NL

7. Doesn't talk with me very much	L	SL	NL
8. Will not talk to me when I displease her.	L	SL	NL
9. Is very strict with me.	L	SL	NL
10. Feels hurt when I don't follow advice.	L	SL	NL
11. Is always telling me how I should behave.	L	SL	NL
12. Usually doesn't find out about my misbehavior.	L	SL	NL
13. Spends very little time with me	L	SL	NL
14. Almost always speaks to me with a warm and friendly voice	L	SL	NL
15. Is always thinking of things that will please me.	L	SL	NL
16. Believes in having a lot of rules and sticking to them.	L	SL	NL
17. Tells me how much she loves me.	L	SL	NL
18. Is always checking on what I've been doing at school or at play.	L	SL	NL
19. Punishes me for doing something one day, but ignores it the next.	L	SL	NL
20. Allows me to tell her if I think my ideas are better than hers.	L	SL	NL
21. Lets me off easy when I do something wrong.	L	SL	NL
22. Sometimes when she disapproves, doesn't say anything but is cold and distant			

for awhile.	L	SL	NL
23. Forgets to help me when I need it.	L	SL	NL
24. Sticks to a rule instead of allowing a lot of exceptions.	L	SL	NL
25. Tells me exactly how to do my work.	L	SL	NL
26. Doesn't pay much attention to my misbehavior.	L	SL	NL
27. Likes me to choose my own way of doing things.	L	SL	NL
28. If I break a promise, doesn't trust me again for a long time.	L	SL	NL
29. Doesn't seem to think of me very often	L	SL	NL
30. Doesn't tell me what time to be home when I go out.	L	SL	NL
31. Gives me a lot of care and attention.	L	SL	NL
32. Believes that all my bad behavior should be punished in some way.	L	SL	NL
33. Asks me to tell everything that happens when I'm away from home.	L	SL	NL
34. Doesn't forget very quickly the things I do wrong.	L	SL	NL
35. Wants me to tell her about it if I don't like the way she treats me.	L	SL	NL
36. Worries about me when I'm away.	L	SL	NL
37. Gives hard punishments.	L	SL	NL
38. Believes in showing her love for me.	L	SL	NL
39. Feels hurt by the things I do.	L	SL	NL

40. Lets me help to decide how to do things we're working on.	L	SL	NL
41. Says some day I'll be punished for my bad behavior.	L	SL	NL
42. Gives me as much freedom as I want.	L	SL	NL
43. Smiles at me very often.	L	SL	NL
44. Is always getting after me.	L	SL	NL
45. Keeps a careful check on me to make sure I have the right kind of friends.	L	SL	NL
46. Depends upon her mood whether a rule is enforced or not.	L	SL	NL
47. Excuses my bad conduct.	L	SL	NL
48. Doesn't show that she loves me.	L	SL	NL
49. Is less friendly with me if I don't see things her way.	L	SL	NL
50 Is able to make me feel better when I am upset.	L	SL	NL
51. Becomes very involved in my life.	L	SL	NL
52. Almost always complains about what I do.	L	SL	NL
53. Always listens to my ideas and opinions.	L	SL	NL
54. Would like to be able to tell me what to do all the time.	L	SL	NL
55. Doesn't check up to see whether I have done what she told me.	L	SL	NL
56. Thinks and talks about my misbehavior			

long after its over.	L	SL	NL
57. Doesn't share many activites with me.	L	SL	NL
58. Lets me gc any place I please without asking.	L	SL	NL
59. Enjoys doing things with me.	L	SL	NL
60. Makes me feel like the most important person in her life.	L	SL	NL
61. Gets cross and angry about little things I do.	L	SL	NL
62. Only keeps rules when it suits her.	L	SL	NL
63. Really wants me to tell her just how I feel about things.	L	SL	NL
64. Will avoid looking at me when I've disappointed her.	L	SL	NL
65. Usually makes me the center of her attention at home.	L	SL	NL
66. Often praises me.	L	SL	NL
67. Says if I loved her, I'd do what she wants me to do.	L	SL	NL
68. Seldom insists that I do anything.	L	SL	NL
69. Tries to understand how I see things.	L	SL	NL
70. Complains that I get on her nerves.	L	SL	NL
71. Doesn't work with me.	L	SL	NL
72. Insists that I must do exactly as I'm told.	L	SL	NL
73. Asks other people what I do away from home.	L	SL	NL

74. Loses her temper with me when I don't help around the house.	L	SL	NL
75. Does not insist I obey if I complain or protest.	L	SL	NL
76. Cheers me up when I am sad.	L	SL	NL
77. Sees to it that I obey when she tells something.	L	SL	NL
78. Tells me of all the things she has done for me.	L	SL	NL
79. Wants to control whatever I do.	L	SL	NL
80. Does not bother to enforce rules.	L	SL	NL
81. Thinks that any misbehavior is very serious and will have future consequences.	L	SL	NL
82. Is always finding fault with me.	L	SL	NL
83. Often speaks of the good things I do.	L	SL	NL
84. Makes her whole life center about her children.	L	SL	NL
85. Doesn't seem to know what I need or want.	L	SL	NL
86. Is happy to see me when I come home from school or play.	L	SL	NL
87. Gives me the choice of what to do whenever possible.	L	SL	NL
88. If I've hurt her feelings, stops talking to me until I please her again.	L	SL	NL

89. Worries that I can't take care of myself unless she is around.	L	SL	NL
90. Hugged or kissed me goodnight when I was small.	L	SL	NL
91. Says if I really cared for her, I would not do things that cause her to worry.	L	SL	NL
92. Is always trying to change me.	L	SL	NL
93. Is easy to talk to.	L	SL	NL
94. Wishes I were a different kind of person.	L	SL	NL
95. Lets me go out any evening I want.	L	SL	NL
96. Seems proud of the things I do.	L	SL	NL
97. Spends almost all of her free time with her children.	L	SL	NL
98. I have certain jobs to do and am not allowed to do anything else until they are done.	L	SL	NL
99. Is very interested in what I am learning at school.	L	SL	NL
100. Doesn't like the way I act at home.	L	SL	NL
101. Changes her mind to make things easier for herself.	L	SL	NL
102. Can be talked into things easily.	L	SL	NL
103. Wishes I would stay at home where she could take care of me.	L	SL	NL
104. Makes me feel I'm not loved.	L	SL	NL
105. Has more rules than I can remember,			

so is often punishing me.	L	SL	NL
106. Says I make her happy.	L	SL	NL
107. Will talk to me again and again about anything bad I do.	L	SL	NL
108. Lets me do anything I like to do.	L	SL	NL

Form B: Form for Father

1. Makes me feel better after talking over my worries with him.	L	SL	NL
2. Isn't very patient with me.	L	SL	NL
3. Sees to it that I know exactly what I may or may not do.	L	SL	NL
4. Wants to know exactly where I am and what I am doing.	L	SL	NL
5. Soon forgets a rule he has made.	L	SL	NL
6. Is easy with me.	L	SL	NL
7. Doesn't talk with me very much.	L	SL	NL
8. Will not talk to me when I displease him.	L	SL	NL
9. Is very strict with me.	L	SL	NL
10. Feels hurt when I don't follow advice.	L	SL	NL
11. Is always telling me how I should behave.	L	SL	NL
12. Usually doesn't find out about my misbehavior.	L	SL	NL
13. Spends very little time with me.	L	SL	NL

14. Almost speaks to me with a warm and friendly voice.	L	SL	NL
15. Is always thinking of things that will please me.	L	SL	NL
16. Believes in having a lot of rules and sticking to them.	L	SL	NL
17. Tells me how much he loves me.	L	SL	NL
18. Is always checking on what I've been doing at school or at play.	L	SL	NL
19. Punishes me for doing something one day, but ignores it the next.	L	SL	NL
20. Allows me to tell him if I think my ideas than his.	L	SL	NL
21. Lets me off easy when I do something wrong.	L	SL	NL
22. Sometimes when he disapproves, doesn't say anything but is cold and distant for awhile.	L	SL	NL
23. Forgets to help me when I need it.	L	SL	NL
24. Sticks to a rule instead of allowing a lot of exceptions.	L	SL	NL
25. Tells me exactly how to do my work.	L	SL	NL
26. Doesn't pay much attention to my misbehavior.	L	SL	NL
27. Likes me to choose my own way of doing things.	L	SL	NL
28. If I break a promise, doesn't trust			

me again for a long time.	L	SL	NL
29. Doesn't seem to think of me very often.	L	SL	NL
30. Doesn't tell me what time to be home when when I go out.	L	SL	NL
31.Gives me a lot of care and attention.	L	SL	NL
32. Believes that all my bad behavior should be punished in some way.	L	SL	NL
33. Asks me to tell everything that happens when I'm away from home.	L	SL	NL
34. Doesn't forget very quickly the things I do wrong.	L	SL	NL
35. Wants me to tell him about it if I don't like the way he treats me.	L	SL	NL
36. Worries about me when I'm away.	L	SL	NL
37. Gives hard punishment.	L	SL	NL
38. Believes in showing his love for me.	L	SL	NL
39. Feels hurt by the things I do.	L	SL	NL
40. Lets me help to decide how to do things we're working on.	L	SL	NL
41. Says someday I'll be punished for my bad behavior.	L	SL	NL
42. Gives me as much freedom as I want.	L	SL	NL
43. Smiles at me very often.	L	SL	NL
44. Is always getting after me.	L	SL	NL
45. Keeps a careful check on me to make sure I have the right kind of friends.	L	SL	NL

46. Depends upon his mood whether a rule is enforced or not.	L	SL	NL
47. Excuses my bad behavior.	L	SL	NL
48. Doesn't show that he loves me.	L	SL	NL
49. Is less friendly with me if I don't see things his way.	L	SL	NL
50. Is able to make me feel better when I am upset.	L	SL	NL
51. Becomes very involved in my life.	L	SL	NL
52. Almost always complains about what I do.	L	SL	NL
53. Always listens to my ideas and opinions.	L	SL	NL
54. Would like to be able to tell me what to do all the time.	L	SL	NL
55. Doesn't check up to see whether I have done what he told me.	L	SL	NL
56. Thinks and talks about my misbehavior long after it's over.	L	SL	NL
57. Doesn't share many activities with me.	L	SL	NL
58. Lets me go any place I please without asking.	L	SL	NL
59. Enjoys doing things with me.	L	SL	NL
60. Makes me feel like the most important person in his life.	L	SL	NL
61. Gets cross and angry about little things I do.	L	SL	NL

62. Only keeps rules when it suits him.	L	SL	NL
63. Really wants me to tell him just how I feel about things.	L	SL	NL
64. Will avoid looking at me when I've disappointed him.	L	SL	NL
65. Usually makes me the centre of his attention at home.	L	SL	NL
66. Often praises me.	L	SL	NL
67. Says if I love him, I'd do what he wants me to do.	L	SL	NL
68. Seldom insists that I do anything.	L	SL	NL
69. Tries to understand how I see things.	L	SL	NL
70. Complains that I get on his nerves.	L	SL	NL
71. Doesn't work with me.	L	SL	NL
72. Insists that I must do exactly as I'm told.	L	SL	NL
73. Asks other people what I do away from home.	L	SL	NL
74. Loses his temper with me when I don't help around the house.	L	SL	NL
75. Does not insist I obey if I complain or protest.	L	SL	NL
76. Cheers me up when I am sad.	L	SL	NL
77. Sees to it that I obey when he tells me something.	L	SL	NL
78. Tells me of all the things he has done for me.	L	SL	NL

79. Wants to control whatever I do.	L	SL	NL
80. Does not bother to enforce rules.	L	SL	NL
81. Thinks that any misbehavior is very serious and will have future consequences.	L	SL	NL
82. Is always findings fault with me.	L	SL	NL
83. Often speaks of the good things I do.	L	SL	NL
84. Makes his whole life center about his children.	L	SL	NL
85. Doesn't seem to know what I need or want.	L	SL	NL
86. Is happy to see me when I come home from school or play.	L	SL	NL
87. Gives me the choice of what to do whenever possible.	L	SL	NL
88. If I hurts his feelings, stops talking to me until I please him again.	L	SL	NL
89. Worries that I can't take care of myself unless he is around.	L	SL	NL
90. Hugged or kissed me goodnight when I was small.	L	SL	NL
91. Says if I really cared for him, I would not do things that cause him to worry.	L	SL	NL
92. Is always trying to change me.	L	SL	NL
93. Is easy to talk to.	L	SL	NL
94. Wishes I were a different kind of person.	L	SL	NL

95. Lets me go out any evening I want.	L	SL	NL
96. Seems proud of the things I do.	L	SL	NL
97. Spends almost all of his free time with his children.	L	SL	NL
98. I have certain jobs to do and am not allowed to do anything else until they are done.	L	SL	NL
99. Is very interested in what I am learning at school.	L	SL	NL
100. Doesn't like the way I act at home.	L	SL	NL
101. Changes his mind to make things easier for himself.	L	SL	NL
102. Can be talked into things easily.	L	SL	NL
103. Wishes I would stay at home where he could take care of me.	L	SL	NL
104. Makes me feel I'm not loved.	L	SL	NL
105. Has more rules than I can remember, so is often punishing me.	L	SL	NL
106. Says I make him happy.	L	SL	NL
107. Will talk to me again and again about anything bad I do.	L	SL	NL
108. Lets me do anything I like to do.	L	SL	NL

Appendix C

MULTICONTENT LOCUS OF CONTROL MEASURE

This questionnaire is a series of attitude statements. Each represents an opinion held by some people. In the development of the questionnaire no attempt was made to create statements which had right or wrong answers. I expect you to disagree with some items and agree with others. My interest is in the extent to which you agree or disagree with such matters of opinion.

Read each statement carefully. Then indicate whether you agree or disgree by checking the appropriate space in front of each statement. First impressions are usually best so you needn't ponder any item. You may feel that some statements require qualification before an answer can be given. In such cases choose the best answer based on your interpretation of the statement. In any case, give an answer to each statement.

Agree	Disagree	
( )	( )	1. If I ever got elected to any office in this community it would be due more to my effective campaigning than to lucky circumstances.
( )	( )	2. In most schools the grading system is so unfair that it has no relation to to what the students know.
( )	( )	3. Public acceptance or rejection depends to an important degree on the important people a person knows.

( ) ( ) 4. By taking an active part in political and social affairs people can improve the quality of life in their community.

( ) ( ) 5. My personal goals in life certainly can be dominated by people who control things important to me.

( ) ( ) 6. I feel that my degree of popularity is primarily a matter of the looks and temperament I happened to be born with.

( ) ( ) 7. As far as events in this city are concerned, most of the people are the victims of decisions by others.

( ) ( ) 8. In the future, how much money I make will depend on how hard I work and how competent I am and much less on the lucky breaks I might get.

( ) ( ) 9. Not everybody can learn to get along with others.

( ) ( ) 10. If people are dissatified with their society they should blame themselves more than the past history of their country or bad luck.

( ) ( ) 11. In the case of the well-prepared student there is rarely, if ever, an unfair test.

( ) ( ) 12. If one wants to be a social success it more important to develop social skills

than to have pull with influential people.

( ) ( ) 13. Social systems in our society are so complex that even with the best of social techniques and knowledge people cannot eradicate social problems.

( ) ( ) 14. Whether I obtain good or poor marks depends not so much on the teachers but on what I do or do not do.

( ) ( ) 15. In my experience I have found that my not being as popular as I would like to be should not be looked upon as a chance misfortune but as a stimulus to improve my social personality.

( ) ( ) 16. If I made a determined effort I could help to improve the local conditions in our community, even though my efforts would probably meet with strong local opposition.

( ) ( ) 17. Many grades obtained by students on exams are influenced significantly by accidental happenings.

( ) ( ) 18. The number of friends I have depends more on the crowd I am with than on what I am like or what I do.

( ) ( ) 19. Each country has its own historical destiny and I don't think I could influence developments in our country

one way or the other.

( ) ( ) 20. When I set out on a task I usually accomplish the goals implied in it.

( ) ( ) 21. In school I found that my social success or failure was very much dependent on whether I was in or out of tune with the social leaders of the class.

( ) ( ) 22. I feel that is I really wanted to I could contribute to making this country a better place to live in.

( ) ( ) 23. Most often people become professionally sucessful because they have rich and powerful relatives to help them.

( ) ( ) 24. Whether neighbors like a person or not is largely a fate that cannot be easily altered.

( ) ( ) 25. The leaders of this community are not as all-powerful as many people think: if their policies are not liked, the people can get rid of them.

( ) ( ) 26. Personal achievements of mine are often heavily influenced by chance factors.

( ) ( ) 27. How many friends I have depends on how nice a person I am.

( ) ( ) 28. The kind of government we get depends primarily on chance factors because

political developments are impossible to predict and to control.

( ) ( ) 29. Usually there is no direct connection between how hard I study and the grades I get.

( ) ( ) 30. In the past I found that it was not necessary to have influential friends in order to be accepted by the social group as long as I held the right attitudes towards other people.

( ) ( ) 31. When I look at the problems of my community, I usually feel that I cannot do anything to improve the situation.

( ) ( ) 32. It is not at all important to have influential relatives in order to be admitted into selective educational programs such as medicine or law.

( ) ( ) 33. Popularity is not so much a matter of good or bad luck but something which one can do much about by developing social skills that appeal to others.

( ) ( ) 34. I can do little to improve things in my city because all the important decisions are made by a small but powerful group of people.

( ) ( ) 35. If people do not succeed in their careers they should blame themselves

rather than chance causes.

( ) ( ) 36. Others can become more popular by improving social skills and by developing their personality.

( ) ( ) 37. Just because I do not like the way this city is governed does not entitle me to accept it as inevitable in my life.

( ) ( ) 38. The idea that people get ahead in life by doing good work is an illusion.

( ) ( ) 39. Knowing influential people is an extremely important way of being socially acceptable.

( ) ( ) 40. In the long run people are responsible for bad government on a national as well as on a local level.

( ) ( ) 41. I think that my chances of getting high grades depend primarily on who my teacher is.

( ) ( ) 42. If I am not as popular as I would like to be, it is because my chances of getting into the right crowd were always small.

( ) ( ) 43. The democratic system of government is an illusion because much of the decision-making power lies in the hands of a powerful few.

( ) ( ) 44. If I fail on a test I tend to blame

myself rather than unfortunate circumstances beyond my control.

( ) ( ) 45. People who try hard to make many social contacts are wasting their time because many of these efforts are counter-productive.

( ) ( ) 46. A severe economic depression in our country would be more the result of bad judgments by its citizens than the effects of chance factors.

( ) ( ) 47. Capable people who fail to succeed have not made maximum use of their abilities.

( ) ( ) 48. If one wants to avoid social rejection it's more important to know how to get along with other people than to have one or two influential friends.

( ) ( ) 49. It is difficult for people to change anything through the political processes.

( ) ( ) 50. Getting good marks primarily depends on how hard I work rather than what kind of a teacher I get.

( ) ( ) 51. I have found that social success is not so much a matter of good or bad luck as it is of the social skills I have developed.

( ) ( ) 52. If I decided to stand up for my rights to the people in power, I would not have put up with many disliked government policies.

( ) ( ) 53. Attaining success in studies or in a profession is primarily a matter of the lucky breaks people get at the right times.

( ) ( ) 54. Whether other people ignore me or appear to desire my company is something about which I can do little.

( ) ( ) 55. There is little I can do about inflation, unemployment or other undesirable economic conditions because the economic system is determined by impersonal laws beyond the control of any individual or government.

( ) ( ) 56. I think that success in school primarily depends on how well I study.

( ) ( ) 57. I can make many friends if only the group leaders do not make a deliberate effort to exclude me.

( ) ( ) 58. With enough effort I could wipe out some of the political corruption in this city.

( ) ( ) 59. Entrance into high paying occupations depends primarily on knowing the right

people and little on your abilities.

( ) ( ) 60. Social rejection is primarily a matter of luck and depends on the kind of crowd the person happens to be with.

( ) ( ) 61. The argument that a society is usually controlled by some powerful clique is an excuse for people who are too unmotivated to exercise their rights and responsibilities.

( ) ( ) 62. In the past I found that my educational successes and failures were primarily a matter of chance.

( ) ( ) 63. People who reject me as a person would change their attitudes if I attempted to influence their feelings.

( ) ( ) 64. Society's structure today is primarily the result of historical and economic processes which are beyond the control of any individual or small group of citizens.

( ) ( ) 65. My success in any job is unlikely to be determined mostly by my effort.

( ) ( ) 66. Whether I am liked or disliked depends on how friendly I am towards others than on how I get along with the important people in my group.

( ) ( ) 67. In our mass society I think that as an individual there is very little that I

do which could contribute to the solutions of any social problems.

( ) ( ) 68. Students do not have to depend on a teacher's whim in order to get high grades.

( ) ( ) 69. People who are unpopular are the ones with wrong attitudes toward others and its no use blaming chance circumstances for their unpopularity.

( ) ( ) 70. There is little chance of my doing any better in life because the people who are on the top of our social system effectively keep me down.

( ) ( ) 71. People who argue that luck is very important for educational success are lazy people who want to have an excuse for their failures.

( ) ( ) 72. People are lonely because they don't try to be friendly.

( ) ( ) 73. I cannot blame history, fate, or anything else if I do not like some things in our society because I can change the present if not the past.

( ) ( ) 74. People today have little chance to advance in their jobs by doing good hard work.

( ) ( ) 75. If the parents of classmates cannot

approve of a person's family background, there is little that an individual can do to make friends.

( ) ( ) 76. The average citizen can have an influence in government decisions.

( ) ( ) 77. If I studied to become a teacher, scientist,or doctor and failed, it would probably be because I needed some help and important people did not give it to me.

( ) ( ) 78. There is not much use in trying to please people. If I am lucky they like me; if I am out of luck then they don't.

( ) ( ) 79. The poor people in this society can't have a better deal simply because the people at the top keep them down.

( ) ( ) 80. When making decisions about my future I found that making a decision to make definite course of action turned out better than trusting fate.

( ) ( ) 81. No matter how hard a person tries, some people just never will like that individual.

( ) ( ) 82. The "historical destiny" of a country is shaped more by the decisions of its citizens that by some historical fate.

( ) ( ) 83. If people worked harder they would

get better jobs and would make more money.

( ) ( ) 84. The popularity or unpopularity one experiences is primarily a matter of one's personality and not a matter of whether one knows important people.

( ) ( ) 85. There is very little that parents can do to improve the quality of life for their children in their community.

( ) ( ) 86. If I am capable, I can get ahead in my job even if my boss is against me.

( ) ( ) 87. I do not think that I was born with the characteristcs which people like or dislike in me, so I can improve them.

( ) ( ) 88. If I do not accept unquestioningly the programs laid down by politicans in office but work for improvement in my community and district, I can influence these programs and their outcome.

( ) ( ) 89. People often succeed at chosen tasks because they are meant to succeed.

( ) ( ) 90. If I ever run into a situation where I have very few friends, I think there is little that can be done.

( ) ( ) 91. I do not think that I can do anything about war or peace in the world but I

have to live with whatever chance might bring.

( ) ( ) 92. Most of my failures in school or work were the result of ignorance or laziness, or, lack of ability, or all three.

( ) ( ) 93. If I am accepted by my social group, it is primarily because the group leaders like me.

( ) ( ) 94. If I made an effort, there are many things I could do in order to improve the life in my community.

( ) ( ) 95. Getting good marks depends primarily on what kind of teachers the students get.

( ) ( ) 96. Good friends are hard to come by; a person has to wait largely for chance to bring them along.

( ) ( ) 97. If people are sufficiently eager to exercise their political rights, they can get rid of many strong political leaders they do not like.

( ) ( ) 98. The career I end up in probably will be chosen more from uncontrollable events in my background than from anything else.

( ) ( ) 99. I can pretty well influence the number of people who like me or dislike me by

the things I do.

( ) ( ) 100. The political activities of the last twenty years have convinced me that luck more than anything has determined government solutions to pressing societal and economic problems.

( ) ( ) 101. I found that hard work usually does not pay off.

( ) ( ) 102. Even when I am out of tune with the social leaders of my peer group, I can still be popular with others if I make an effort to get to know them well.

( ) ( ) 103. Even if I devoted all my time and energy to political and social goals there is little chance that my efforts could make an impact.

( ) ( ) 104. People do not need to have influential connections in order to get ahead in life.

( ) ( ) 105. People who have an unattractive personality need not resign themselves to an unpleasant fate, but can become more likeable by changing their attitudes and habits.

( ) ( ) 106. I do not hope for any improvement in our community because people with vested interests resist change.

( ) ( ) 107. Many poor people would be better off if they stopped blaming their unfortunate circumstances and showed a willingness to improve their situation.

( ) ( ) 108. People who want to know why others like or dislike them need only make the effort.

( ) ( ) 109. Luck, chance, or fateful processes have not been a major variable in the decisions of society that have been relevant to me.

( ) ( ) 110. Society's acceptance of an individual is seldom determined by a person in a position of prestige.

( ) ( ) 111. People who want to accomplish a large problem of unique interest to themselves do not have to depend on support from others.

( ) ( ) 112. I do not think that it is purely a matter of luck if I am liked or not liked.

( ) ( ) 113. I am not obliged to simply follow the policies set by leaders of any institution or organization.

( ) ( ) 114. Luck doesn't influence very much the outcome of tasks I do.

( ) ( ) 115. Uncontrollable or fateful causes

seldom determine social changes for people.

( ) ( ) 116. Student leaders don't determine the approval others give me.

( ) ( ) 117. I can usually succeed in a task even if important people work against me.

( ) ( ) 118. People who have an unattractive personality need not resign themselves to an unpleasant fate.

( ) ( ) 119. Political and business leaders do not really control this country or its people.

( ) ( ) 120. Successes of any sort are seldom the result of fate.

Appendix D

THE TRENT ATTRIBUTION PROFILE (TAP)

Instructions: For each of the following statements, please rate the importance of each of the five reasons according to your judgment. Please circle the appropriate number.

Note that:

5 means very important

4 means somewhat important

3 means undecided

2 means somewhat unimportant

1 means not at all important

For example, consider the following item:

One's height is the result of:

Nutrition.....1 2 3 4 5

Exercise.....1 2 3 4 5

Parents' height.....1 2 3 4 5

Climate.....1 2 3 4 5

Thus, if you believe that parents' height is very important you would circle number 5; if you believe that exercise is somewhat important you would circle number 4; and so on.

---

1. Most scientific inventions are the result of :

a. chance 1 2 3 4 5

b. the inventor's intelligence.....1 2 3 4 5

c. easy, routine scientific work.....1 2 3 4 5

d. much time and effort by the inventor.....1 2 3 4 5

2. My good marks in school were due to:

a. easy marking by the teacher.....1 2 3 4 5

b. hard work on my part.....1 2 3 4 5

c good luck.....1 2 3 4 5

d. my academic abilities.....1 2 3 4 5

3. When a person is popular, it is because:

a. the person is lucky.....1 2 3 4 5

b. the person tries hard.....1 2 3 4 5

c. the person gets well with others.....1 2 3 4 5

d. it's easy to be popular.....1 2 3 4 5

4. When I did not do well in a class in school, it was because:

a. I didn't try hard enough.....1 2 3 4 5

b. the teacher gave low marks.....1 2 3 4 5

c. I was not good in that subject.....1 2 3 4 5

d. I was unlucky 1 2 3 4 5

5. If I did not have enough money, it was because of:

a. difficult circumstance.....1 2 3 4 5

b. my poor judgment.....1 2 3 4 5

c. my bad luck.....1 2 3 4 5

d. my lack of effort.....1 2 3 4 5

6. When people fail school, it is because of:

a. lack of academic abilities.....1 2 3 4 5

b. bad luck.....1 2 3 4 5

c. lack of effort.....1 2 3 4 5

d. low marks given by the teacher.....1 2 3 4 5

7. Most wealthy people are rich because:

a. of their skill at making money.....1 2 3 4 5

b. they worked very hard.....1 2 3 4 5

c. they are lucky 1 2 3 4 5

d. it's easy to make money.....1 2 3 4 5

8. When I enjoy myself in a party, it is because:

a. it was a good party.....1 2 3 4 5

b.. I get along with others.....1 2 3 4 5

c. it was a lucky day.....1 2 3 4 5

d. I make an effort to have fun.....1 2 3 4 5

9. If I succeed in my future, it is because:

a. I work hard.....1 2 3 4 5

b. I am lucky.....1 2 3 4 5

c. of my skill to make money.....1 2 3 4 5

d. it's not hard to make money.....1 2 3 4 5

10. When people dislike me, it is usually because:

a. I don't try hard enough to be friendly....1 2 3 4 5

b. I am not lucky.....1 2 3 4 5

c. it's hard to be liked by everyone.....1 2 3 4 5

d. I lack the skills to socialize.....1 2 3 4 5

11. Most poor people have little money because:

a. of bad luck.....1 2 3 4 5

b. it's difficult to get ahead in the world..1 2 3 4 5

c. they don't work hard enough.....1 2 3 4 5

d. they don't have the skill to make money....1 2 3 4 5

12. The fact that some people are not well-liked is because:

a. they don't know how to get along with others..... 1 2 3 4 5

b. it's hard to be popular.....1 2 3 4 5

c. they don't try to be friendly.....1 2 3 4 5

d. they are unlucky.....1 2 3 4 5

Appendix E

A QUESTIONNAIRE ON THE PERCEPTION OF THE IMPORTANCE OF FAMILY NAME

Please circle the most appropriate answer for each question below:

1) How important is your school performance to your family ?

very Important	Important	Not Very Important	Not Important at all

2) To what extent do you think your family name might be ruined if you caught stealing ?

very much	a little bit	Not at all

3) Your personal success/failure affects your family pride.

1 2 3 4 5 6 7

Disagree Agree

4)Everyone should have a sense of responsibility to keep the family name good.

1 2 3 4 5 6 7

Disagree Agree

5) Making the family name good should be seen as the goal of personal achievements.

1 2 3 4 5 6 7

Disagree Agree

Appendix F

A QUESTIONNAIRE ON ADOLESCENT PERCEPTION OF THE CERTAINTY OF THEIR FUTURE

Please answer all of the following questions and statements.

Please do NOT skip any statement or question.

Please indicate the name of the city and the name of the country that you spent most of your childhood:

a) from birth to 5 years of age:.....

(name of the city)

.....

(name of the country)

b) from 6-years-old to 9-years-old:.....

(name of the city)

.....

(name of the country)

c) from 10-years-old to 12-years-old:.....

(name of the city)

.....

(name of the country)

Do you expect to live in the <u>city</u> that you are living in 10 years from now ?

YES NO

If no, which city will you expect to be living in?

.....(please name the city)

How certain are you about that ?

a) very certain

b) not very certain

c) not certain at all

Do you expect to live in the country that you are living in 10 years from now?

YES NO

If no, which country will you expect to be living in ?

.....(please name the country)

How certain are you about that ?

a) very certain

b) not very certain

c) not certain at all

IF you have ANSWERED "NO" to any of the ABOVE QUESTIONS, please give REASONS for your CERTAINTY/UNCERTAINTY.

Reason 1:.....

Reason 2:.....

Reason 3:.....

Reason 4:.....

What do you expect to do in the future (i.e. 10 years from now) ?

.....

How certain are you that the choice of your future occupation can be attained in the country that you are living in 10 years from now ?

a) very certain

b) not very certain

c) not certain at all

Please state reasons for your certainty or uncertainty:

Reason 1 .....

Reason 2 .....

Reason 3 .....

Reason 4 .....

Do you expect any major changes in the country that you are living in 10 years from now ?

a) Yes, I expect a lot of major changes.

b) Yes, I expect some major changes.

c) No, I do not expect any major changes.

If you have answered YES to this question, please PROVIDE INFORMATION for the following questions:

What major changes do you expect would occur in the country that you are living in 10 years from now ?

Please name the major changes:

1.....

2.....

3.....

Have you taken these changes into consideration in planning your future occupation ?

a) Yes, I have taken these changes into consideration.

b) No, I have not taken these changes into consideration.

c) Yes, I have somewhat taken these changes into consideration.

How much have these expected changes affected your planning for the future ?

a) These expected changes have affected my planning a lot.

b) These expected changes have somewhat affected my planning.

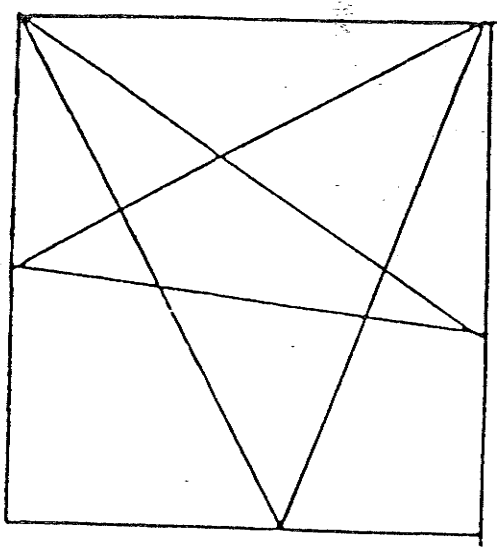
c) These expected changes have not affected my planning.

Appendix G

ACHIEVEMENT-RELATED TASKS

Solvable Figures

I



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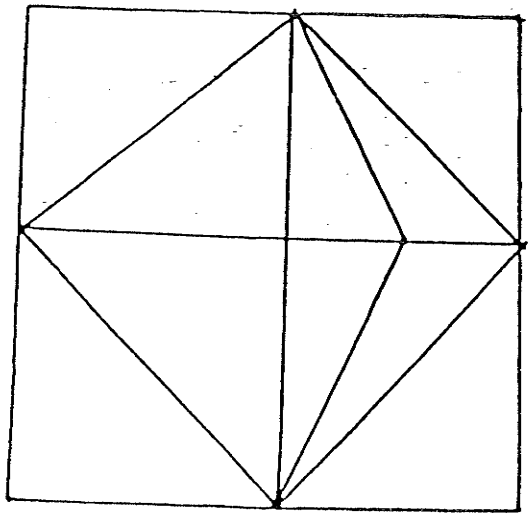
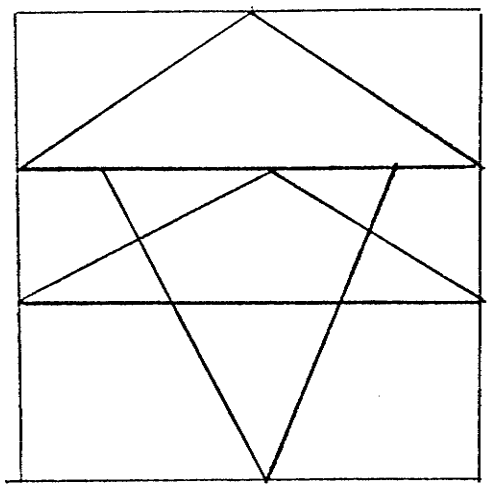


Unsolvable Figures

I



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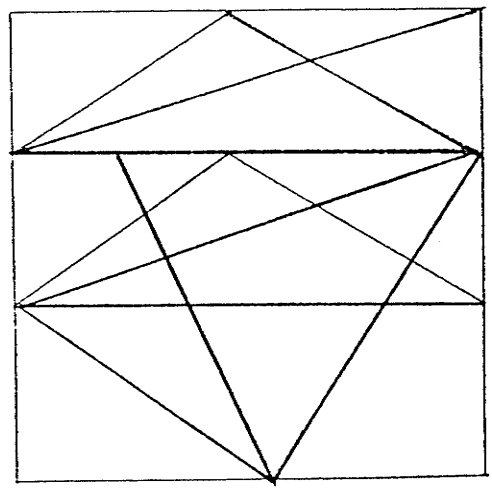
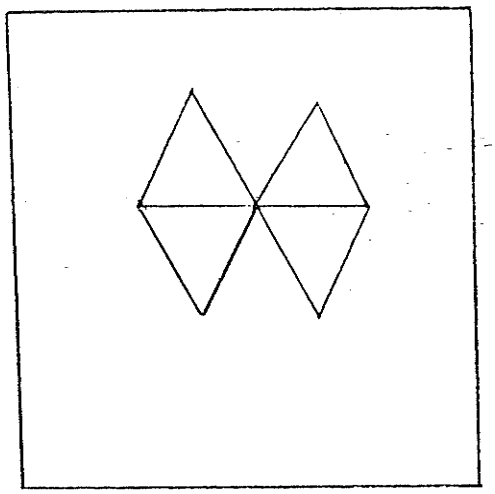


Appendix H

THE PRACTICE FIGURE



Appendix I

SUBJECT'S BACKGOUND INFORMATION

Please give all the information in the spaces provided:

What is your name ?.....

How old are you ? .....

What is your date of birth ? Month....Date....Year....

Are you male or female ?.....

What grade are you in ?.....

What is the name of your homeroom teacher ?.....

Where do you live ?.....

What was your place of birth ?.....

.....

Questions to be answered by all subjects in Canada.

Were your parents born in Canada ?.....

Were your grandparents born in Canada ?.....

If you were not born in Canada, please indiciate the number of years you have lived in Canada. .....