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**Southeast Asian Refugees in Canada:
Gender Differences in Adaptation and Mental Health**

By

R. Gary Edwards

B.A. (Hon.), Psychology, University of Western Ontario, 1986

M.A., Psychology, Wilfrid Laurier University, 1989

DSW Dissertation

Submitted to the Faculty of Social Work
in partial fulfilment of the requirements
for the Doctor of Social Work degree

Wilfrid Laurier University

1994

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Abstract

This thesis involves secondary analysis of epidemiological data concerning a large cohort of Southeast Asian refugees resettled in British Columbia, Canada, who were surveyed three times over a ten year period. Male-female differences in the mental health impact of adaptational demands, such as the acquisition of host language skills and securing employment were the focus for the thesis.

The psychometric properties of the mental health scales used in the study demonstrated high internal consistencies and construct validity in both male and female samples. There was evidence to suggest that the external validity of the study was somewhat compromised by the attrition of single individuals as well as those who were not available for employment or who spoke no English at the time of the first wave of data collection.

Although men had an initial advantage over women in knowledge of English ability, progress in acquiring the language was equal in both sex groups. Confirming the results of previous studies, women were found to use fewer strategies than men to learn English. However, closer examination of these strategies demonstrated that not all were associated with better language outcomes. Women appeared to gain more than men from formal language training, whether through E.S.L. classes or use of a private tutor. Although working outside the home contributed little or nothing to women's acquisition of English, employment provided a substantial language benefit to men.

This study found little evidence to support the theory that newly arrived refugee women are relatively sheltered from stress while refugee men, attempting to provide for

their families, suffer a mental health burden resulting from the stresses of finding employment and learning the host language. In a similar vein, the data did not support the theory that there is a mental health advantage to women working in the home in the early years after arrival, and working outside the home after being in Canada for some time.

Women had more somatic symptoms than men throughout the course of study, while men were more likely to be anxious than women. Unemployment was a predictor of depression and anxiety for all refugees. At the end of the refugees' first decade in Canada, there were pronounced gender differences in the relationship between language ability and mental health: women who spoke no English were more likely to be anxious than men in the same circumstance whereas, among those speaking the language well, men were more anxious than women.

Occupational decline over the three waves of data collection from levels held in Vietnam were not associated with increased levels of depression and somatization, nor with greater likelihood of anxiety. By Wave 3, occupational decline had been arrested, with both men and women experiencing gains from their pre-migration levels. There was a slight association between these occupational gains and feelings of well-being, particularly for men. That is, acquiring gains in occupational prestige appeared to be related to improvements in refugees' quality of life.

Implications for theory and policy are discussed as well as future research directions.

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With the completion of this thesis, I owe a debt of gratitude to a number of individuals. Dr. Barry McPherson proved an effective guide at every step of the dissertation process, supporting my efforts to create a thesis with relevance across academic disciplines. Dr. Morton Beiser was generous with his knowledge and resources. Open access to his epidemiological data and, more importantly, his consistent encouragement, helped bring this thesis from theory to reality. For the ability to approach this task with a variety of statistical tools, I owe much to the patience and clarity of Dr. Robert Gebotys. Throughout my entire doctoral degree Dr. Anne Westhues was encouraging, supportive, and intellectually stimulating, demonstrating the values that the discipline of Social Work espouses. I have tried to capture these values in this document.

My wife Carol has been an outspoken champion of this effort from the beginning. Her support through many a long night, her sacrifices to make it happen, and her commitment to seeing it through have been unfailing. It is with great love and appreciation that I dedicate the thesis to Carol and our three children, Daniel, Andrew, and Ceara.

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Southeast Asian Refugees In Canada: Gender Differences in Adaptation and Mental Health

The admission of large number of refugees from Third World countries over the past three decades has caused dramatic changes in Canadian society. Despite progress in the alteration of public policy and changing public attitudes, impediments to adaptation persist, as outlined in the report of the Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, *After the Door has been Opened* (hereafter, Task Force Report, 1988). The Task Force Report (1988) and some empirical evidence (e.g., Carpenter & Brockington, 1980) suggest that, compared to refugee men in countries of permanent resettlement, refugee women from Southeast Asia experience decreased opportunity for successful adaptation and increased risk for mental disorder. Restrictions placed on women by their culture of origin and discriminatory practices in the host country are important causes. This thesis examines the differing acculturative experiences and attendant mental health risks of male and female Southeast Asian (SEA) refugees resettling in Canada.

The thesis involves secondary analysis of an epidemiological database deriving from the research project entitled "Resettlement of Southeast Asian Refugees in Canada", Morton Beiser, Principal Investigator. This project involves a three wave/panel study of a refugee cohort studied in 1981, 1983 and 1991-3. Male-female differences in English language acquisition and employment are explored, and related, in turn, to gender differences in mental health. Measurement issues are also the focus of empirical investigation. The cross-gender psychometric equivalence of the mental

health scales employed in the survey (i.e., depression, anxiety, somatization, and well-being) are analyzed as well as potential biases resulting from subject attrition in order to determine the reliability, validity, and generalizability of the results obtained.

Background

A large scale refugee migration of 85,139 Vietnamese, ethnic Chinese, and Laotians from Southeast Asia to Canada occurred between 1976 and 1982 (United Nations High Commissioner for Refugees, cited in Canadian Employment and Immigration Commission, 1986). Following the fall of Saigon in 1975, the first exodus of Southeast Asian refugees was primarily to the U.S. The second exodus, in 1978, followed Chinese-Vietnamese border hostilities, the communist take-over of Laos and the invasion of Kampuchea. Most of the refugees who resettled in Canada came as a result of this second exodus.

For many refugees who escaped Vietnam, flight involved dangerous exposure to natural elements (e.g., storms and rough seas) and to new threats of persecution. Women were particularly vulnerable, as a presentation to a Canadian legislative committee poignantly portrayed:

During the last five years, approximately 2400 [Vietnamese] refugee women suffered rape by pirates and some 1000 women were abducted, frequently being passed among several boats. Only 43% of women abducted since 1982 are known to have survived. Piracy attacks on female asylum-seekers were generally sustained, brutal, and multiple... (Report of the Secretary General on the Activities and Programs of the United Nations High Commissioner on Refugees on Behalf of Refugee Women, cited in the Minutes of Proceedings and Evidence of the Legislative Committee on Bill C-55, 1988, p.84)

Mollica and his colleagues' (1987) clinical treatment study of Southeast

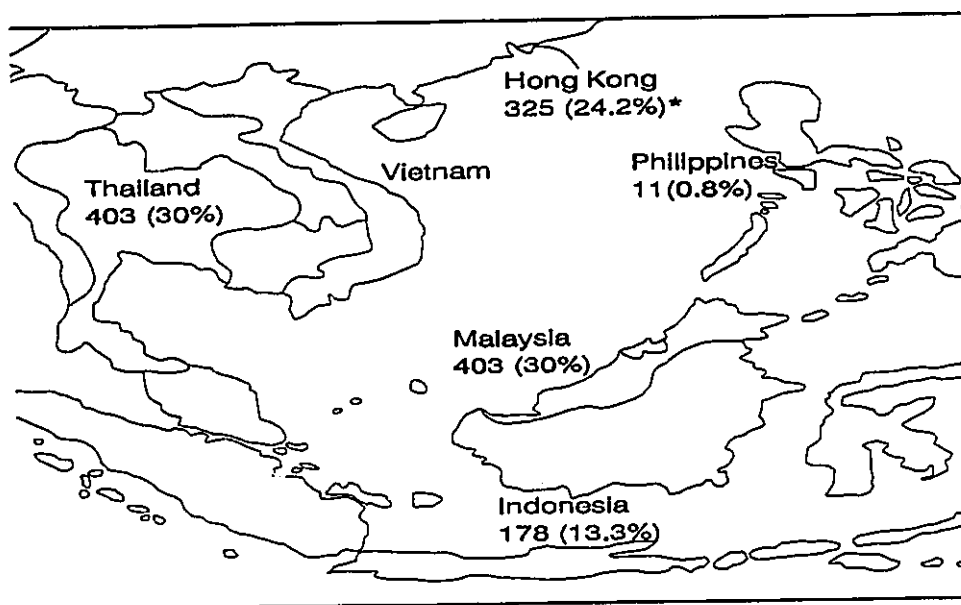
Asians who had been exposed to multiple traumas and torture revealed that most victims suffered concurrent diagnoses of major depressive disorder and post-traumatic stress disorder. Of the Vietnamese, Laotians, and Cambodians who participated in the study, the latter were found to have endured the highest number of traumas and torture experiences, with Cambodian women who were widowed, separated, or divorced suffering serious social and psychological impairments. In their discussion of the findings, Mollica and his colleagues point out that not only had these women been more vulnerable to extreme abuse during war and exodus, but they also were socially isolated after resettlement. These findings have been echoed by therapists (Rozee & Boemel, 1989) who report incidents of war trauma and abuse suffered by Cambodian refugee women and the social isolation and depression that ensued.

The refugee experience can severely disrupt culturally prescribed sex roles. Men are often unable to fulfil their obligations to defend and provide for their families; with the family unit threatened, women may be deprived of a role from which they derive their sense of self (Morokvasic, 1984; Rahim & Mukherjee, 1984). For the present cohort, these threats to sex roles were clearly present. Traditional Chinese culture emphasizes a man's role in protecting his family and enforcing the family 'law', while women have the role of bringing up the children and being dutiful to their husbands (Hodge, 1980). Similarly, Vietnamese culture has usually cast women as homemakers and men as wage-earners (Thuy, 1976). The traditional ideal, as Shepherd (1987) explains, is for Vietnamese women to serve their fathers in childhood,

their husbands in marriage, and their sons in old age.

Initial refuge in countries of first asylum afforded only limited protection from physical threat. As Figure One illustrates, the Southeast Asians in the present study escaped either by perilous journeys overseas to Hong Kong, Malaysia, Indonesia, and the Philippines (hence, the reference to these refugees as "boat people") or by an overland journey to Thailand. Once interned in refugee camps, they were further exposed to human rights violations, with substantial differences among the countries of first asylum. International observers were barred from camps in Thailand, where refugees were held in prison-like circumstances. By contrast, SEA refugees who managed the perilous journey over water to Hong Kong were able to pursue employment outside the camps in which they were interned and many received orientation programs to prepare them for resettlement in the West. For example, Chan (1990) describes a "Cultural Orientation Project", undertaken in a Hong Kong camp which involved social workers providing group sessions on topics such as parenting roles, women's status and domestic violence.

Figure 1: Southeast Asian Pre-Migratory Incarceration



*number (percent) of the cohort in the Refugee Resettlement Project

The influence of camp incarceration experiences on post-migratory levels of depression has been shown to be short-lived, lasting approximately six months (Beiser et al., 1989). This finding may be due in part to the selection process of refugees who are permitted to come to Canada; the hardest and healthiest are chosen for resettlement. Having been uprooted, in many cases detained in refugee camps, and commonly spending long periods of uncertainty awaiting the possibility of resettlement in a Western country, refugees must meet the criteria of being free from any physical disabilities or any history of psychiatric impairment before being admitted to Canada. This selection process overall likely resulted in healthier refugees resettling, who were able to overcome past stress more quickly than a less select group might have.

Conceptual Framework

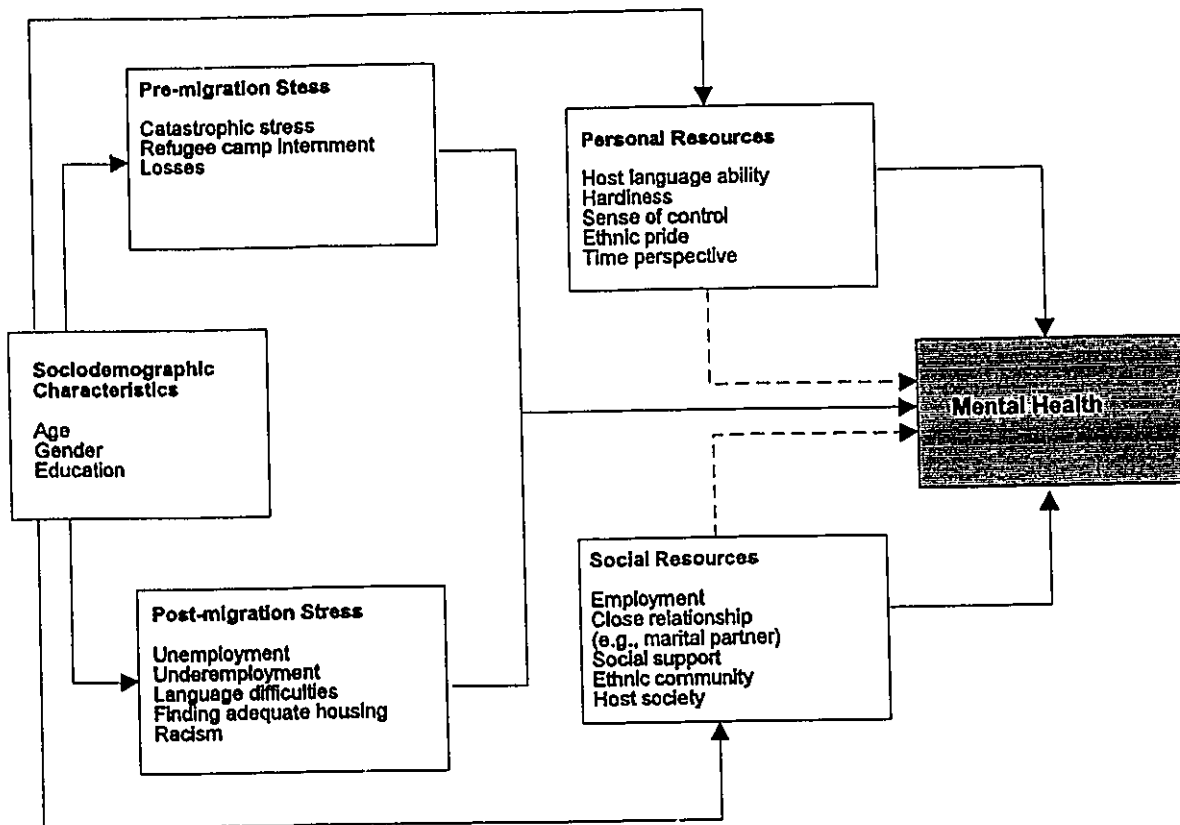
Once resettled, the receptiveness of the host culture towards newcomers affects the process of acculturation (Task Force Report, 1938). Acculturation, broadly defined, is the ability to assume a reasonable quality of life in a new cultural environment through a process of adaptation. For refugees, this adaptive process includes, at one level, learning the host culture's language, gaining employment to secure a reasonable standard of living, and finding adequate housing. At another level, it requires a change in the newcomer's cultural "blue print", the everyday assumptions about how society is organized and what the norms of behavior are to be followed. By taking in newcomers with different cultural traditions, the broader society also undergoes change, to which some will be receptive while others will resist.

The degree to which refugees successfully negotiate these changes affects their mental health. This term too assumes a broad definition: it includes the absence of psychopathology as well as the maintenance of a sense of individual well-being. For refugees, a simple social stress model of mental health would suggest that the difficulties of escaping from persecution followed by the pressures to acculturate would overwhelm coping abilities, with a heightened risk of psychopathology resulting. Some research does support such a model. Post-migratory factors have been shown to influence the current mental health status of SEA refugees, perhaps to the same degree or more than pre-migratory factors (Beiser et al., 1989; Westermeyer et al., 1983a, 1983b). For example, potential mental health stressors such as unemployment (Beiser, Johnson, & Turner, 1993) have been related to depression among SEA

refugees. However, reality presents a more complex equation than simply greater stress equals heightened mental health risk. There are factors that have been investigated which buffer the strains of resettlement. These include the benefits of personal resources such as language development and the mental health advantages associated with social resources like ethnic community support systems (Beiser, 1990; Berry & Blondel, 1982; Nicassio & Pate, 1984).

The following conceptual model, adapted from Beiser (1990), illustrates this framework. The model suggests that there are characteristics of immigrants and

Figure 2: Framework for Migration and Mental Health



refugees, such as their age, gender, and educational attainment which are related to

mental health. The nature of the relationship is determined by the stressors which are encountered, both pre- and post-migration, and the personal and social resources which are brought to bear to cope with these difficulties. The present investigation focuses on gender as a central sociodemographic characteristic of Southeast Asians. Potential post-migratory stressors of host language difficulties, unemployment, and underemployment are explored as predictors of poor mental health. Just as these two factors may contribute substantially to stress, the acquisition of English language ability and of employment in turn constitute personal and social resources, respectively. These abilities are posited to buffer against mental health difficulties and may contribute to an improved quality of life.

The difficulties encountered in acculturating to a new environment and the means of buffering these stressors are likely to differ between SEA men and women, as personal and societal expectations in Canada differ substantially from the circumscribed sex roles that existed in their culture of origin. After resettlement, traditional sex roles of SEA culture are challenged by the exigencies of changing circumstance; women who previously attended only to home and children often find it financially necessary to enter the paid work force. Both men and women are confronted by the more egalitarian values in Western culture with respect to gender. These changes bring opportunity as well as risk, for which the mental health outcomes are not clear.

Adaptation and Mental Health

After reviewing the extant mental health literature, receiving numerous submissions from groups and individuals across Canada, and conducting national

hearings, the Canadian Task Force identified several key factors necessary for the successful adaptation of immigrants and refugees. Critical among these factors were an ability to speak the host culture's language and the opportunity to obtain adequate employment. Not being able to speak the host country's language was said to increase newcomers' sense of isolation and marginalization, with deleterious effects on mental health. Further, the Task Force Report (1988) claimed that not being able to speak the host language made acquiring employment more difficult. When jobs were found, the newcomer without adequate language skills was found more likely to be underemployed. Being unemployed and/or unable to earn an adequate living in turn was posited to be related to mental health problems.

English Language Acquisition

An ability to speak the host country's language is crucial for successful adaptation (Rumbaut, 1985) and positive mental health (Task Force Report, 1988) of newcomers. In light of this fact, Johnson's (1988) finding that general English language acquisition is slower for female SEA refugee women resettled in Canada than for their male counterparts is of concern as it may result in greater social isolation and mental health difficulties.

Consistent findings in the U.S. have been demonstrated by Tran (1988, 1990) who found that among Vietnamese refugees aged 40 to 92, women acquired a knowledge of English more slowly than men. Furthermore, women adopted fewer strategies to learn English (Hypothesis 4). Previous level of education in Vietnam proved the most powerful predictor of general knowledge of English. The relative effectiveness of each learning strategy (e.g., listening to the radio or watching TV,

attending English as a Second Language classes) on English acquisition was, however, not investigated. Although Tran (1988) speculated that because refugee women were less likely than men to be working and thereby less exposed to others in the host country, they had access to fewer strategies to gain English language skills. However, this hypothesis has not been empirically tested.

Vietnamese women in Tran's studies were also found to be less likely than men to attend English as a Second Language (ESL) classes. This factor would quite likely further contribute to the differences in language acquisition observed. In Canada, ESL program funding is normally extended only to newly arrived refugees destined for the labour market, when the training is considered necessary for obtaining suitable employment. Since women are more likely than men to arrive as sponsored dependents and to be destined for unskilled labour, these restrictions have a greater impact on women (Parades, 1987). Differential access to ESL training between men and women, if it is found to exist in the present cohort, is likely to create a disadvantage in terms of host language acquisition (Hypothesis 5).

Whether Tran's findings can be replicated in a Canadian sample of Southeast Asian refugees has yet to be investigated. Testing these results with the present cohort involves an extension of Tran's findings to ethnic Chinese and Laotians in addition to Vietnamese.

Refugees who participated in the current study also form a younger sample than Tran examined, potentially confounding comparisons between the two studies. Age undoubtedly plays an important role in the adaptation of refugees; indeed, it is an important criterion upon which immigration authorities decide whom to admit in to

Canada. Although many age-related issues may be related to adaptation (e.g., age of arrival in the host country and psychological development), the present focus is restricted to determining if patterns in language acquisition demonstrated among relatively older refugees are replicable in a younger refugee cohort.

The extent to which the language skill differences observed between men and women affects mental health outcomes has yet to be adequately determined. When they first arrive in Canada, a high percentage of refugees speak neither English nor French (e.g., in 1987, over 80% did not speak either official language, Task Force Report, 1988). Given that acculturation occurs over time, those who have just arrived are not likely to suffer poor mental health simply because they do not speak the host language. Indeed, Beiser and his colleagues (unpublished manuscript) found the reverse among recently arrived SEA refugees; good English skills one to two years after arrival were associated with depression among refugees re-surveyed two years later. These investigators speculate that heightened expectations to succeed in Canada which accompany good English language skills may have increased disappointment at the persistently high levels of unemployment and underemployment evident among this population at the time of the study.

Nonetheless, language skills may still provide a buffer against marginalization over time. Newcomers who are restricted from opportunities for social and economic advancement due to poor language skills are likely to suffer poorer mental health than those who do eventually succeed, despite their initial disappointment that the rewards of speaking the host language are not immediate. If women are less likely than men to acquire necessary language skills (Hypothesis 3), then, when viewed over a ten to

fifteen year period after their arrival in Canada, this factor may be causally implicated in women experiencing worse mental health than men (Hypothesis 6).

Employment Opportunities

The mental health risk in the general population which unemployment creates has been known for some time (Eisenberg & Lazarsfeld, 1938) and is well documented in more recent studies (Dooley and Catalano, 1989; Kessler, House, and Turner, 1987; Shamir, 1986; Warr, Jackson, and Banks, 1988). These effects hold true for SEA refugees as well (Beiser et al., 1993; Lin, 1986; Starr & Roberts, 1982; Westermeyer et al., 1983a,b).

Johnson (1989) found that Southeast Asian refugees have less access to social and financial resources than Canadian residents, yet perceive fewer social and financial stressors from unemployment. Southeast Asian refugees have experienced higher levels of unemployment than the national average, with disparities growing even more acute during periods of national economic recession. In March 1982, when the Canadian unemployment rate was 8.5 percent, that for Southeast Asians was 10.4 percent (Employment and Immigration Canada, 1982). Although SEA refugees suffered higher rates of unemployment than the mainstream population, their subjective experience was one of relative security in Canada compared to the previous experiences of forced migration which for many involved daily survival efforts in refugee camps (Chan, 1987). This finding suggests that adverse pre-migratory experiences can create resilience, protecting against post-migratory stressors in the host country.

Because of financial insecurity and economic strain, many SEA refugee women depart from the traditional role of homemaker, to enter the workforce in Canada.

Indochinese female labour participation rates in Canada have been substantially higher than the national participation rates of Canadian women (Samuel, 1984). High participation rates among women newcomers continue for many years after arriving in Canada, according to Ng and Estable (1986), not simply until families establish themselves, as is often thought. For refugee women in general (Estable, 1986) and SEA refugee women in particular (Johnson, 1988), employment is often found in the job "ghettos" of the industrial, clerical, and service sectors where the work involves low pay, long hours, and few opportunities for advancement. Research to date, however, has not determined the extent to which low occupational status in Canada results from structural economic disadvantages in Canadian society versus a simple carry-over from the restrictions which occurred in refugees' homelands, such as female disadvantages in education.

One study of SEA refugee women who were able to stay at home, in keeping with their cultural traditions, found that they experienced fewer mental health problems than their husbands (Westermeyer, Bouafuely, & Vang, 1984). Contradictory epidemiological findings have been demonstrated in mental health studies of immigrants where higher rates of psychiatric symptomatology among women than men are reported, particularly for women in the role of homemaker (Gove, 1978; Lasry & Sayegh, 1991; Phillips & Segal, 1969). Sociological research also demonstrates that for women, in general, there are mental health advantages to employment roughly equivalent to the advantages conferred for men (Gore & Mangione, 1983; Turner & Avison, 1989). As Turner & Roszell (1992) suggest, the additional role of wage-earner carries with it a mental health advantage as well as additional exposure to stress, the

former usually outweighing the latter.

These issues are further complicated by the initial positive effect of a delimited sex role posited for SEA refugee women in that men hastily must acquire employment and master language skills. Although women are usually cast in the role of guarding the family's interpersonal relationships and maintaining the culture of origin (Sluzki, 1979), the pressures to materially provide for family fall more often on men, who are thereby exposed to greater mental health risk than women (Krupinski, 1967; Westermeyer, 1986). These mental health benefits for women may be short-lived, however. Women refugees who escape the immediate pressures to integrate by occupying themselves in the home may later be at increased risk for mental disorder (Hypothesis 7) as they find themselves the only "unassimilated" member of the family (Garcia-Peltoniemi, 1991; Krupinski, 1967). These findings have consistently been found among various immigrant groups (Lasry & Schacter, 1975; Szapocznik & Kurtines, 1980).

Given these apparently contradictory findings, further investigation is needed to determine if SEA refugee women who work outside the home are at less of a risk for mental disorder than those who work inside the home (Hypothesis 8). Given traditional cultural expectations to be homemakers, mixed with economic demands to be employed, it is unclear whether the patterns of mental health improvement evidenced among the general population of women who work outside the home are generalizable to SEA refugee women.

Underemployment

The majority of SEA refugees recently arrived in Canada suffer downward

occupational mobility (Beiser et al., 1993; Stein, 1979). Although the deleterious effects of underemployment on mental health are substantial for individuals in the general population, the effects for SEA refugees are negligible (Beiser et al., 1993). Several reasons may account for this finding: 1) initial relief following an escape from dire circumstances may moderate the discomfort of relative deprivation, 2) personal aspirations for success may be displaced on children with the hope that they will obtain a better life, and 3) although rankings of occupational prestige may be consistent across cultures, standards of living vary considerably between Vietnam and Canada, with newcomers accessing material benefits not available previously despite a decline in occupational status.

As with English language ability, the relationship between employment and mental health undoubtedly changes over time. Expectations in the early years of resettlement that the future holds promise for an improved quality of life may act as a stress buffer; later, unmet expectations resulting from low employment status may have a more deleterious effect on mental health.

In the general population, women are more likely than men to be underemployed, thereby creating a moderately higher mental health risk for women (Gove, 1978; Hurh & Kim, 1990). It is not clear if this relationship is generalizable to SEA refugees. Since both men and women must assume menial jobs in their first few years, the severity of downward movement depends, in part, on the status of their pre-migratory employment (i.e., men, on average, suffer greater occupational loss) (Hypothesis 9). If female SEA refugees were predominantly restricted to a low occupational status in their native country, then the transition to similar work in Canada

may not be as stressful as for men who suffer greater downward occupational movement (Hypothesis 10).

Potential Intervening Variables

Given the complexity of mental health issues affecting Southeast Asians, it is necessary to rule out other potential factors which may be confounded with the independent variables of language development and employment status. First, it is likely that age related factors affect the outcomes of interest. For example, young people may acquire host language skills at a faster rate than their older peers. Although investigation of this issue is beyond the scope of the current study, the potential confounding of age with observed gender differences will be controlled in relevant analyses.

Second, it is possible that different outcomes in adaptation result in part from changes between rural and urban environments in moving from Vietnam to Canada. This possibility has been investigated in earlier research, with the results indicating that the variable contributes little to explaining either individual differences in language acquisition (Tran, 1990) or to language acquisition strategies (Tran, 1990). In the present analyses, the potential impact of this variable will therefore not be explored.

Methodological Issues

The mental health interview schedule developed for this study is comprised of four scales of mental health, specifically, depression, anxiety, somatization, and well-being (Appendix A). Beiser and Fleming (1986) have demonstrated the reliability of each of these scales using Cronbach's alpha, reporting high internal consistencies of .91 for Anxiety, .88 for Depression, .85 for Somatization, and .72 for Well-being. The

cross-cultural construct validity of these measures was also confirmed by factor analyzing the entire pool of mental health items, with the same factor patterns emerging for the Southeast Asians as for a comparison group of Vancouverites. More recently, the Affect Balance Scale (Bradburn, 1969), comprised of items which form the well-being scale and part of the depression scale employed in this study, has been demonstrated to be psychometrically equivalent across cultures (Devins, Edwards, & Beiser, 1993). It remains to be examined whether the operationalized mental health constructs are equally reliable and valid across gender (Hypothesis 1). As well as assessing quantitative differences in psychopathology and well-being between males and females, it is important to determine if there are qualitative differences between males and females in the way the mental health typologies (i.e., depression, anxiety, somatization, and well-being) have been constructed. Assessing the construct validity of the measures assesses whether men and women differ in the way that they experience and express emotional distress and well-being.

Subject attrition creates another potential methodological problem. Participants who have been interviewed throughout the course of the longitudinal study (i.e., in 1981, 1983, and 1992/3) may differ systematically from participants who have attrited, being on average either healthier or unhealthier, more consistently employed or unemployed, and/or demonstrating better or worse English language facility (Hypothesis 2). Social scientific research across a broad spectrum of subject areas has addressed this methodological problem, including longitudinal studies of head-injured veterans (Sullivan & Corkin, 1984), substance abusers (McAlister & Gordon, 1986), and condom use among homosexuals (Catania et al., 1991). Hansen

and his colleagues (1985) suggest two tests of attrition bias affecting the external validity of a longitudinal study:

1. Are dropouts different from stayers on pretest values of the dependent variables and on demographic characteristics?
2. Do dropouts show different patterns across time on the dependent variables than stayers? (p. 2.63)

and two tests to assess internal validity:

3. Are there differences in rates of attrition among conditions?
4. Are pretest scores for dropouts different among conditions? (p. 263)

Where bias is evident, both the generalizability of the results (i.e., the external validity) and confidence in the effects of employment status and English language ability on the results (i.e., the internal validity) is constrained. Relating the impact of attrition on the dependent variables in this study allows us to test the generalizability of the findings. Are differences observed in mental health representative of true differences in the population or are they simply an artifact of attrition? The relationship between the independent variables (i.e., employment status and English language facility) and attrition tells us if the observed "treatment conditions" are having a true effect on the outcomes of interest.

For the present study, examining the first threat to external validity will involve comparisons of "dropouts" versus "stayers" on the four mental health measures for the first wave of the survey. Are respondents who dropped out after this first survey more or less mentally healthy¹ than respondents who continued to be interviewed in the subsequent re-surveys? This same question will be examined with respect to potential

¹Note that the terms "healthy" and "unhealthy" as they are used in the present context do not necessarily relate to categorical clinical diagnoses, rather they represent relative points on a continuum of "healthiness" observed within the present cohort.

demographic differences including gender, age, marital status, and education level.

Were individuals who were re-surveyed more likely to have been male or female, older or younger, married or unmarried (at Wave 1), or well educated or poorly educated (at Wave 1)?

The second test of external validity is whether different patterns across time on the dependent variable are associated with attrition. This test can be applied to those individuals who were present at both Wave 1 and Wave 2. Four patterns can be examined for each mental health scale: 1) respondents who were mentally healthy in 1981 and in 1983, 2) respondents who were mentally healthy in 1981 and mentally unhealthy in 1983, 3) respondents who were mentally unhealthy in 1981 and mentally healthy in 1983, and 4) respondents who were mentally unhealthy in 1981 and in 1983. Which, if any, of these four groups is most likely to drop out of the study at Wave 3?

The first test of internal validity involves investigation of differences in rates of attrition among conditions. This test applies in the present study to the independent variables of employment status and English language facility, with "dropouts" versus "stayers" from Wave 1 to Wave 2 as the dependent variable.

The second test of internal validity investigates whether pretest scores for dropouts are different among conditions. Pretest scores in this instance will be respondents' mental health scores while conditions refer to employment status and English language facility.

Methodology

Description of the Refugee Cohort

The present analyses are based on data from a cohort of Southeast Asian refugees who resettled in and around Vancouver, B.C. between 1979 and 1981. The sampling method for this study previously described in Beiser (1987) and Beiser and Fleming (1986), is summarized below.

Statistics from Employment and Immigration Canada indicated that approximately 7,000 Southeast Asian refugee men, women, and children resettled in Vancouver and a nearby rural area in 1979 and 1980. The law prevents release of names and addresses of individuals identified for census purposes, so an alternative method of enumerating this population from which to draw a sample was undertaken.

Local agencies who were engaged in front-line work with this population were solicited for assistance. The names they provided of refugees were followed up with a "snowball" technique of then asking these individuals to identify other refugees who had recently arrived. Once no new names were being generated (i.e., all new names given were repetitious of others already enumerated), the researchers were confident that the entire population of refugees had been identified in the geographic area. A cluster sampling was then undertaken of households, from which one or more individuals over the age of 18 were selected. A one in three probability sample of all enumerated (i.e., identified following the above procedures) Southeast Asian refugees in Vancouver resulted, as well as the entire population of identified individuals in a nearby rural area. The sampling design was also stratified to provide equal numbers of ethnic Chinese and non-Chinese, as well as privately sponsored and government

sponsored refugees. Comparisons of the demographic characteristics of this cohort were demonstrated to be comparable to that aggregated by government statistics, indicating the representativeness of the sample (Beiser & Fleming, 1986).

The first wave of interviews took place in 1981, with the 1348 refugees surveyed representing a 98% completion rate. At this time the refugees had been in Canada an average of 16 months, with a range of less than one month to four years (although the vast majority were resettled between one to four years). In 1983, 87% of the original sample was resurveyed for a total of 1169 interviews. Of the 179 refugees who were not re-interviewed in 1983, 38 did participate in the final wave of data collection. A third wave, completed between 1991 and 1993, involves 641 of the original respondents or 48% of the original sample. This refugee cohort, described in Table 1, forms the database for the present secondary analyses.

Ethnicity was not easily defined. For the purposes of the Refugee Resettlement Project, the following criteria were adopted. Given three distinct language groups corresponding to the three ethnic groups presented, mother tongue served as a basis for determining individuals' ethnicity in addition to the respondent's father's stated ethnic background. Failing the ability to make a determination based on these two criteria, family name was employed (with the assistance of bilingual/bicultural workers who helped with the project), as surnames can often be ethnically differentiated based on how they are spelled.

Table 1: Southeast Asian Refugee Sample (1981)

		Number	(Percent)
Ethnicity	Vietnamese	422	(31.3)
	Laotian	194	(14.4)
	Chinese	732	(54.3)
Gender	Male	775	(57.5)
	Female	573	(42.5)
Age	18-25	523	(38.8)
	26-35	463	(34.3)
	36-45	176	(13.1)
	46-55	113	(8.4)
	56+	73	(5.4)

The entire survey was translated into three languages, Vietnamese, Laotian, and Cantonese. To ensure equivalence of item meaning across language groups, a standard back-translation method was used. A bilingual individual from each Southeast Asian language group was hired to translate the survey. A second bilingual individual then independently translated this version of the survey back into English. Comparison between the original and back-translated English language versions revealed some discrepancies. Where items failed to back-translate with their original meaning intact, discussion among the translators and project staff would lead to modification of the questions, followed by another back-translation. This method facilitated the cross-cultural face validity of all items. At each of the three waves of data collection, respondents were surveyed by like-ethnic interviewers in their language of origin.

Ethical Considerations

Participation by survey respondents in the Refugee Resettlement Project, from

which the present analyses draw, was voluntary, anonymous, and confidential. These conditions were made explicit to potential participants, both in written and oral form, in their language of origin at each of the three survey waves. Written consent to participate was obtained from each respondent at each wave of data collection. Institutional Review Board (IRB) ethics approval for the project was received from the University of British Columbia, where the study began, and from the Clarke Institute of Psychiatry and the University of Toronto, where the study is now located.

No direct benefits accrued to participants in this study, although indirect benefits may include suggestions for improvements to medical and social services based on the findings of this research. There were minimal risks to participants in this study. Some minor psychological discomfort may have arisen from participants being asked questions pertaining to their personal circumstances and emotional states.

The author was given access to this database in the course of working on the Refugee Resettlement Project as a Research Scientist in the Culture, Community, and Health Studies Program, Clarke Institute of Psychiatry, and University of Toronto Department of Psychiatry.

Limitations

The sample design permits generalization of the results to all Vietnamese, Laotian, and Chinese refugees who arrived in and around Vancouver, British Columbia between the years 1979 to 1981. Confidence in the generalizability of the findings to all resettled SEA refugees must be attenuated, given the sampling parameters. At a broader level, the present study hopefully will advance theoretical understanding of the adaptation process for refugees in general, and to a lesser extent immigrants, yet the

applicability of the findings to other cultural groups necessitates further empirical research.

The longitudinal design of this study is superior to cross-sectional research in that it permits the study of changes over time within a single cohort. Using the first and second waves of the survey, for example, Beiser and his colleagues (1993) investigated reciprocal relationships between depression and unemployment. Job loss predicted depression, yet the corollary was also true: depression made staying employed more difficult. Caution was observed in not ascribing causal relations to the data since factors that are correlated are not necessarily causally related. In the present study the outcomes of interest were undoubtedly affected by intervening events between survey waves; this possibility is particularly true when observing changes from the 1983 survey to the 1991/93 survey.

The measures employed in this study have limitations in terms of the information which they capture. Considerable effort was expended from the onset of the project in designing a survey that encompassed factors germane to the adaptation process. The particular challenge encountered has been to obtain information that is relevant and valid across cultures, a task to which the present work makes a contribution. In the following subsection, the scales used in the present investigation are reviewed, to describe and delimit the information which they provide.

Measures

Mental Health Scales

The four mental health measures - depression, anxiety, somatization, and well being - represent a compilation of items taken from previously validated questionnaires

as well as some original items reflecting idioms of Southeast Asian culture. The four scales, described in detail in Beiser and Fleming (1986), are included in Appendix A, with the derivations of each item indicated.

The depression scale measures dysphoric mood, feelings of restlessness, self-reproach, boredom, loss of pleasure in daily activities, and difficulties in concentration. Anxiety was assessed somewhat differently. Respondents were asked a screening question, as follows: "During the past few weeks, have you had a spell or attack when all of a sudden you felt frightened and anxious or very uneasy for no apparent reason?" Those who responded "Yes" were then asked a series of questions based on the criteria for Panic Disorder, as outlined in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III, American Psychiatric Association, 1980). The somatization scale consists of items reflecting vague feelings of ill-health, problems such as dizziness, headaches, and fatigue, and specific complaints of the gastrointestinal tract and cardiorespiratory systems. The well-being scale assesses positive affect, based on a measure widely used throughout North America, the Affect Balance Scale (Bradburn, 1969).

In the survey employed for this project, some mental health items from previous instruments were excluded because they failed to adequately translate North American idioms to Southeast Asian culture. For example, the Affect Balance Scale includes a question asking whether respondents feel "on top of the world". This phrase conveys meaning and is widely used in North America but loses its meaning in translation. Hence, this item was excluded from the survey.

Among many mental health measures that might have been chosen for use in

this project, Beiser and Fleming (1986) focused on those most likely to have application across Southeast Asian and North American cultures. The authors observed care in avoiding the imposition of Euro-American psychiatric diagnostic indicators on Southeast Asians, for whom these indicators may not adequately fit the experience and expression of emotional disorder. On the other hand, the authors also recognized that there are limited means by which emotional distress can be felt and expressed, making the selection of cross-culturally appropriate questions an attainable objective. For these reasons, Southeast Asian aid and medical workers were involved from the outset of the Refugee Resettlement Project, including the selection of the individual mental health items.

English Language Acquisition

General knowledge of English.

In the first two survey waves, respondents were asked to rate their English language ability on a three point scale of "none", "little", and "good". This scale range was again employed in the third survey wave, however, three more specific questions were asked: 1) "How well can you speak English", 2) "... write English", and 3) "... read English". For our present purposes, the first of these three questions was used as an indicator of general knowledge of English. Whether there was any variation in knowledge of English prior to arrival in Canada is not known, however, it is certainly possible that refugees indicating good English language skills at Wave 1 had some previous exposure.

Language acquisition strategies.

Respondents were queried regarding the strategies they undertook to acquire

English language skills. An extensive set of questions was used in the second survey which were consistent with the measures employed in Tran's (1988) study. Participants were asked if they had used the following ways to learn English since arriving in Canada: formal classes, regular contact with Canadians, practice with people of same ethnicity or family members, watch TV/listen to the radio, private tutoring (one-on-one teacher), and other (specified by the respondent).

Employment Status

In all three survey waves, respondents were asked if they were currently working. In this study, respondents were classified in a manner similar to Statistics Canada's criteria for employment. The employed included individuals who indicated that they were working full-time and who, later in the survey, indicated that they worked for 20 hours or more per week. The unemployed included individuals who were unable to find jobs, had been laid off or fired, or lacked necessary experience. If respondents were 65 years of age or older, or indicated that they were not working because they were either home-makers, full-time students, engaged in full-time vocational training, retired, or pregnant, they were classified as not available for employment.

Underemployment

Changes in occupational prestige were measured for refugees from their pre-migration employment through each of the successive interview waves. Blishen and McRobert's (1976) socioeconomic index for Canadian occupations was used as a measure of occupational status. Beiser and his colleagues (1993) have used this measure, finding it to be an appropriate measure of occupational prestige for Southeast Asians as well as Canadians.

Hypotheses

Several issues with respect to refugee resettlement, gender differences, and mental health beg further theoretical and empirical examination. The following ten hypotheses were investigated in the present study:

1. The mental health scales employed in the survey are reliable and valid for both male and female adult Southeast Asian refugees.
2. There will not be attrition bias threats to external and internal validity evident in the present study.
3. Female Southeast Asian refugees acquire English language facility at a slower rate than Southeast Asian refugee men.
4. Female Southeast Asian refugees use fewer strategies to learn the English language than their male counterparts.
5. Language acquisition is predicted by the following: a) differences in the use of language strategies, and b) gender differences in the use of these strategies, in particular, the use of English as a Second Language classes.
6. Better English language facility and higher rates of employment by males than females at Wave 2 and Wave 3 will predict mental health at Wave 3.
7. The trend in mental health differences between male and female SEAs will change over time such that women will have better mental health than men at Wave 1, there will be no difference at Wave 2, and men will have better mental health than women at Wave 3.
8. Initially at Wave 1, SEA refugee women who work inside the home will experience better mental health than women who work outside the home but by Wave 3 this result will change such that women who work outside the home will experience better mental health than women who work inside the home.
9. Men will experience greater persistent occupational decline than women in their change from employment in Southeast Asia to Canada.
10. An effect of underemployment on mental health will be evidenced at Wave 3, in particular for male SEA refugees.

Results

Hypothesis 1. The mental health scales employed in the survey are reliable and valid for both male and female adult Southeast Asian refugees.

Reliability

The internal consistencies of each of the four mental health scales were examined separately for males and females utilizing Cronbach's coefficient alpha. The results, outlined in Table 2, indicate reliabilities among male respondents in the range of .71 for the Well-Being scale to .92 for the Anxiety scale. For women, the reliabilities range from .68 for the Well-being scale to .91 for the Anxiety scale.

Table 2: Reliability Table

	Males	Females
Depression	$\alpha=.89$ (n=768)	$\alpha=.88$ (n=564)
Anxiety	$\alpha=.92$ (n=775)	$\alpha=.91$ (n=573)
Somatization	$\alpha=.84$ (n=772)	$\alpha=.85$ (n=566)
Well-Being	$\alpha=.71$ (n=768)	$\alpha=.68$ (n=258)

Validity

Two principal components analyses with Varimax rotation were conducted on the entire item pool of the four mental health measures at Wave 1, once for all male respondents and once for all females. The resulting factor patterns for both analyses were consistent with those reported by Beiser and Fleming (1986). Table 3a summarizes the overall results of the two principal components analyses.

Table 3a: Overview of Principal Components Analyses

Mental Health Scales	Eigenvalue		% of Variance Accounted for	
	Females	Males	Females	Males
Anxiety	11.51	10.96	23.0	21.9
Depression	4.11	4.39	8.2	8.8
Somatization	2.62	2.49	5.2	5.0
Well-Being	2.28	2.30	4.6	4.6

For the Depression scale, the factor patterns were identical and the item loadings were similar for both male and female refugees, as illustrated in Table 3b.

Table 3b: Principal Components Summary Table - Depression

Scale Items	Factor Loadings	
	Females	Males
Depression		
feeling nervous, tense, or worried	.58	.54
feeling unhappy	.63	.64
feeling sad	.55	.62
feeling inwardly in turmoil	.63	.66
feeling discouraged	.60	.64
felt low and helpless	.58	.64
feeling bored	.60	.55
lost interest and pleasure	.57	.51
trouble making up your mind	.49	.55
feeling you are a worthless person	.47	.43
feeling lonely even with others	.52	.51
feel remorseful	.65	.13
worrying what people say about you	.60	.47
felt upset someone criticized you	.50	.48
felt so restless couldn't sit for long	.46	.50
had trouble concentrating	.57	.54
thoughts seem mixed up	.61	.56
Eigenvalue	4.11	4.39
Percent of Variance Accounted for	8.2	8.8

The item "feeling remorseful" did load lower on the male model than the female, however, it loaded highest on this factor. This particular item therefore was not a strong contributor to the overall factor for males; neither did it load on any of the other factors.

The Anxiety scale also revealed consistency between male and female adult refugees in the present cohort. The same factor pattern was evident for both genders, as well as similar factor loadings on each scale item. Table 3c illustrates these results.

Table 3c: Principal Components Summary Table - Anxiety

Scale Items	Factor Loadings	
	Females	Males
Anxiety		
spell or attack when you felt frightened, anxious, or uneasy for no apparent reason	-.81	-.76
short of breath	.78	.67
heart pound	.80	.73
dizzy or light-headed	.79	.74
fingers or face tingle	.69	.72
tightness or pain in your chest	.66	.75
feel like you were choking or smothering	.62	.74
feel weak	.78	.69
sweat	.54	.77
tremble or shake	.59	.57
feel hot and cold flashes	.74	.82
vision blur	.63	.69
afraid either that you might die or that you might act in a crazy way	.41	.50
Eigenvalue	11.51	10.96
Percent of Variance Accounted for	23.0	21.9

There was again consistency for the Somatization scale, with the same factor pattern emerging as well as similar factor loadings for each scale item. Table 3d illustrates these results. Note that of all the scale items tested for this scale, only one factor loading appears substantially lower than expected. The item "waking up several hours earlier than expected and not able to go back to sleep" had a low factor loading of .09 for females. Nonetheless, despite its low numeric value, it still loaded highest on

this particular dimension for women.

Table 3d: Principal Components Summary Table - Somatization

Scale Items	Factor Loadings	
	Females	Males
Somatization		
had a loss of appetite	.57	.52
food seemed tasteless and hard to swallow	.56	.55
bothered by nausea	.49	.52
suffered from poor digestion	.53	.62
spells of dizziness	.52	.61
bothered by palpitations	.54	.45
short of breath when not exerting self	.47	.52
having back trouble	.40	.44
feeling you were sickly	.70	.59
having trouble falling asleep	.43	.46
waking up easily at night	.31	.38
waking up several hours earlier than usual and not able to go back to sleep	.09	.45
feeling tired all the time	.63	.54
feel weak all over	.65	.61
head feel heavy	.62	.49
sense of pressure in your head	.54	.46
Eigenvalue	2.62	2.49
Percent of Variance Accounted for	5.2	5.0

Table 3e illustrates the results for the Well-Being scale. The same factor pattern is evident for both male and female refugees; similar loadings for each scale item are also apparent.

Table 3e: Principal Components Summary Table - Well-Being

Scale Items	Factor Loadings	
	Females	Males
Well-Being		
felt pleased about having accomplished something	.71	.74
felt particularly excited or interested in something	.76	.70
felt things were going way you wanted them to do	.66	.65
felt proud someone complimented you for something you had done	.72	.71
Eigenvalue	2.28	2.30
Percent of Variance Accounted for	4.6	4.6

Visual inspection of the principal components analyses indicate similarity between males and females for the four mental health constructs. To test the equality of the factor structures, a confirmatory factor analysis was undertaken using Lisrel 8 (Joreskog & Sorbom, 1993). A model was constructed, assessing the goodness of fit of the three mental health scales: depression, somatization, and well-being. Anxiety was omitted as it was not normally distributed. As Joreskog and Sorbom explain, the chi square test statistic provided is actually a "badness-of-fit measure in the sense that a small chi-square corresponds to good fit and a large chi-square to bad fit" (p. 122). The results confirmed the existence of three independent factor structures for data pertaining to males and females ($X^2=36.75$, $df=3$, $p=.52$).

Summary of Hypothesis 1

There is strong evidence to support the hypothesis that the mental health scales are reliable and valid for both male and female adult Southeast Asian refugees. High

internal consistencies of the four mental health scales were demonstrated. Alpha coefficients ranged from .68 for the well-being measure to .92 for the anxiety scale. There was little variation in these results between men and women, with coefficients differing only by .03 for the well-being scale and .01 for each of the three other scales.

The construct validity of these four measures was also substantiated, with the same factor patterns emerging for both men and women. Without exception, each of the items in the four measures loaded highest on the same dimensions for men and women, with the underlying factors unchanged from that posited by Beiser and Fleming (1986).

Hypothesis 2. There will not be attrition bias threats to external and internal validity evident in the present study.

Thoroughness in setting the ground work for this study resulted in a high initial response rate of 98% obtained in the first wave of data collection. With only two percent of respondents originally declining to participate in the study, there was little opportunity for systematic sampling bias. In 1983, 1169 of the original 1348 respondents were again interviewed, representing 87% of the original cohort. Tracking down these individuals in 1991 proved to be an arduous undertaking, with many respondents having moved with no forwarding address and, among those who were found, many reported that they were too busy to complete the two hour interview. Great effort was expended to track down the original respondents, including extensive use of directories and close contacts with ethnic community organizations. When the participants were found, every effort was made to accommodate their busy schedules

in order to maintain the representativeness of the original sample. Of 1348 survey respondents in 1981, 641 completed the final survey, representing approximately 48% of the original cohort.

As remarkable as this retention rate was for the study of a highly mobile group in the general population, the external and internal validity of these longitudinal results can not be assumed given the substantial subject attrition. That is, participants who have been interviewed throughout the course of the study (i.e., in 1981, 1983, and 1991/3) may have differed systematically from participants who attrited. Where such bias is evident, the generalizability of results is constrained.

External Validity

Examining the first threat to external validity involves comparisons of "dropouts" versus "stayers" on the four mental health measures for the first wave of the survey. Were respondents who dropped out after this first survey more or less mentally healthy than respondents who continued to be interviewed in the subsequent re-surveys? This same question must also be examined with respect to potential demographic differences including gender, age, marital status, and education level. Were individuals who were re-surveyed more likely to have been male or female, older or younger, married or unmarried (at Wave 1), or well educated or poorly educated (at Wave 1)?

The results indicate small, but significant, differences between "stayers" and "dropouts" from Wave 1 to Wave 2 in their levels of depressed affect at Wave 1. Attriters were, on average, slightly more depressed ($x=25.27$) than those who stayed in

the study ($x=23.59$, $t=3.41$, $df=1341$, $p<.005$). However, this small difference reversed for Wave 1 to Wave 3 attrition, with attriters being slightly less depressed at Wave 1 ($x=23.46$) than non-attriters ($x=24.19$, $t=-2.19$, $df=1341$, $p<.05$).

Investigation of the association between attrition and anxiety was undertaken by grouping respondents into two categories. Those who responded affirmatively to the "Panic" screening question (i.e., "During the past few weeks, have you had a spell or attack when all of a sudden you felt frightened, anxious or very uneasy for no apparent reason?") were classified as anxious while those who responded negatively were not. At Wave 1, 9% ($n=121$) of the refugees were anxious. For attrition at Wave 2 and at Wave 3, this variable was not systematically related to dropping out of the study.

Attriters at Wave 2 were, on average, significantly more likely to suffer from somatic complaints at Wave 1 than non-attriters ($t=2.12$, $df=1342$, $p<.05$), although the differences were very moderate ($x=21.36$ for attriters and $x=20.54$ for non-attriters). As with depression, this small difference observed in mental health at Wave 1 is reversed when contrasted with attrition at Wave 3, with attriters reporting, on average, fewer somatic complaints ($x=20.25$, $t=-3.21$, $df=1342$, $p<.005$) than non-attriters ($x=21.09$). No differences in levels of well-being at Wave 1 were observed for individuals who later attrited at Wave 2 or at Wave 3.

Over the ten year period of study, there was virtually no unexpected change with respect to the distribution of age. Ten years after the first wave of data collection, the mean age of the refugee cohort increased by 9.9 years from 31.4 to 41.3, showing little deviation from its expected value. As hypothesized, the age differences between

attriters and non-attriters was not significant. Table 4 illustrates changes to the refugee cohort in the age and gender distribution over the period of study.

Table 4: Gender and Age Changes in the Refugee Cohort Over Time

	Wave 1 - 1981 n (%)		Wave 2 - 1983 n (%)		Wave 3 - 1991/3 n (%)	
Gender						
women	573	(42.5)	509	(43.8)	273	(42.5)
men	775	(57.5)	654	(56.2)	369	(57.4)
Age*						
18-25	533	(38.8)	305	(26.2)	2	(0.3)
26-35	463	(34.3)	493	(42.4)	236	(36.7)
36-45	176	(13.1)	186	(16.0)	244	(37.0)
46-55	113	(8.4)	107	(9.2)	77	(12.0)
over 56	73	(5.4)	72	(6.2)	84	(13.1)

- * Note that by Wave 3 the refugee cohort had aged ten years, accounting for a shift in the age distribution. The two individuals who identified themselves in the 18-25 year age category at Wave 3 must have either over-stated their age at Wave 1 or under-stated it at Wave 3. Percentages may not sum to 100 due to rounding.

Chi square analyses were undertaken for the categorical, independent variables of gender, marital status, and education level (at Wave 1) and the dependent variable of attrition (at Wave 2 and separately at Wave 3). Males were slightly more likely than females to have dropped out at Wave 2 of the survey ($X^2=5.23$, $df=1$, $p<.05$) but by Wave 3 there was no difference observed ($X^2=.24$, $df=1$, $p>.05$). That is, the distribution of men and women in the study did not differ after a decade since they were first interviewed, remaining at an exact split of 42.5% women and 57.5% men despite an overall attrition rate of 52%. Also, the education level of respondents at Wave 1 was not systematically related to attrition at Wave 2 nor at Wave 3.

One demographic variable was strongly associated with attrition, however.

Single individuals were more likely than married, common-law, or widowed individuals to attrite, both at Wave 2 ($X^2=29.04$, $df=4$, $p<.0001$) and at Wave 3 ($X^2=23.55$, $df=4$, $p<.0005$).

The second test of external validity is whether different patterns across time on the dependent variable are associated with attrition. This test can be applied to those individuals who were present at both Wave 1 and Wave 2. Four patterns for each mental health scale must be investigated: 1) respondents who were mentally healthy in 1981 and in 1983, 2) respondents who were mentally healthy in 1981 and mentally unhealthy in 1983, 3) respondents who were mentally unhealthy in 1981 and mentally healthy in 1983, and 4) respondents who were mentally unhealthy in 1981 and in 1983. Which, if any, of these four groups is most likely to drop out of the study at Wave 3?

There is no normative data available concerning the use of the mental health scales in this study for the determination of clinical mental health diagnoses. The following statistical strategy was adopted in order to address the relevant question of whether certain patterns of change from Wave 1 to Wave 2 in the distributions of mental health scores were associated with attrition. The measures of depression, somatization, and well-being were standardized at Wave 1 and, separately, at Wave 2. A cutoff point of one standard deviation above the mean was employed for depression and somatization to divide respondents into "healthier" versus "unhealthier" categories. For the well-being measure, the cut-point used was one standard deviation below the mean, with "unhealthier" respondents falling below this mark. With the anxiety measure, respondents were divided based on their response to the "Panic" screening

question (i.e., "During the past few weeks, have you had a spell or attack when all of a sudden you felt frightened, anxious or very uneasy for no apparent reason?").

A four point categorical variable was then constructed for each of the mental health scales, as follows:

- 1) Wave 1 "healthier"_Wave 2 "healthier",
- 2) Wave 1 "healthier"_Wave 2 "unhealthier",
- 3) Wave 1 "unhealthier"_Wave 2 "healthier", and
- 4) Wave 1 "unhealthier"_Wave 2 "unhealthier".

Four chi square analyses of these variables with attrition from Wave 2 to Wave 3 were undertaken.

Employing the four-point variables, neither patterns of change in depression nor anxiety were associated with attrition at Wave 3. On the somatization scale, two patterns were associated with attrition at Wave 3. Respondents who changed from "healthier" at Wave 1 to "unhealthier" at Wave 2 as well as those who were "unhealthier" at Wave 1 and Wave 2 were significantly less likely to attrite at Wave 3 than others ($X^2=21.37$, $df=3$, $p<.0001$). By contrast, on the well-being scale, respondents who changed from "unhealthier" to "healthier" were less likely to attrite at Wave 3 than others ($X^2=8.69$, $df=3$, $p<.05$).

Internal Validity

The first test of internal validity involves investigation of differences in rates of attrition among conditions. This test applies in the present study to the independent variables of employment status and English language facility, with "dropouts" versus "stayers" as the dependent variable. Chi square analyses were undertaken of the

Wave 1 data: 1) attrition by employment status (categorized as employed, unemployed, and not available), and 2) attrition by language facility (categorized as none, little, and well). Neither employment status ($X^2=3.83$, $df=2$, $p>.05$) nor language facility ($X^2=3.38$, $df=2$, $p>.05$) was related with attrition at Wave 2. However, attrition at Wave 3 was associated with not being available for employment at Wave 1 ($X^2=23.87$, $df=2$, $p<.0001$) and reporting no English language ability ($X^2=6.99$, $df=2$, $p<.05$).

The second test of internal validity investigates whether pretest scores for dropouts are different among conditions. Pretest scores in this instance are respondents' mental health scores while conditions refer to employment status and English language facility.

Three multivariate analysis of variance tests (MANOVAs) were undertaken. Depression, somatization, and well-being were the respective dependent variables and the independent variables were attrition from Wave 1, employment status at Wave 1, English language facility at Wave 1, two 2-way interactions (i.e., attrition x employment status, attrition x language ability), and one 3-way interaction (i.e., attrition x employment status x language ability). In these MANOVA models, the interaction terms are of interest as they represent the test of internal validity.

Although the overall model for depression was significant ($F=6.14$, $df=13,1341$, $p<.001$), the interactions of attrition with employment status and with language ability were not statistically significant. Similarly, the somatization model was nominally significant ($F=2.06$, $df=13,1342$, $p<.05$) but the main effect of attrition was not significant nor were the interaction terms. Finally, the well-being model was significant

overall ($F=4.83$, $df=13,1334$, $p<.001$) but the main effect of attrition was not significant nor were the interaction terms. Potential differences in anxiety levels were also investigated to determine if they differed among conditions. Given that anxiety was assessed as a categorical variable, chi square analyses of anxiety by language ability by employment status were performed. The association between anxiety and language ability at each level of employment status proved to be non-significant.

Summary of Hypothesis 2

Slightly more than half of the original research participants attrited over the course of the study. Although it is difficult to determine the reasons for many respondents' attrition, two common problems stand out: 1) many of the original participants moved frequently, making tracking over a ten year period quite difficult, and 2) many who refused to participate did so because their schedules were too busy. This attrition introduced some biases affecting the external and internal validity of the results.

External validity was compromised by differences between "dropouts" and "stayers" on pretest values of depression and somatization as well as for the demographic variable of marital status. Specifically, being slightly more depressed and slightly more somatic at Wave 1 was associated with dropping out at Wave 2 and staying at Wave 3. Single individuals were much more likely to attrite at Wave 2 and at Wave 3.

Participants who dropped out also showed different patterns of mental health across time than individuals who participated in all three waves of data collection. With

somatization, consistently "unhealthier" participants at Wave 1 and Wave 2 as well as those who went from "healthier" at Wave 1 to "unhealthier" at Wave 2 were less likely to attrite at Wave 3. For the well-being measure, participating in Wave 3 was associated with changes from "unhealthier" at Wave 1 to "healthier" at Wave 2.

Internal validity was marginally compromised by attrition at Wave 3 among those who were not available for employment at Wave 1 as well as among those who reported no English language facility at Wave 1. However, there was no evidence of bias for the second test of internal validity. Wave 1 mental health levels for "dropouts" versus "stayers" did not systematically differ among categories of employment status nor English language ability.

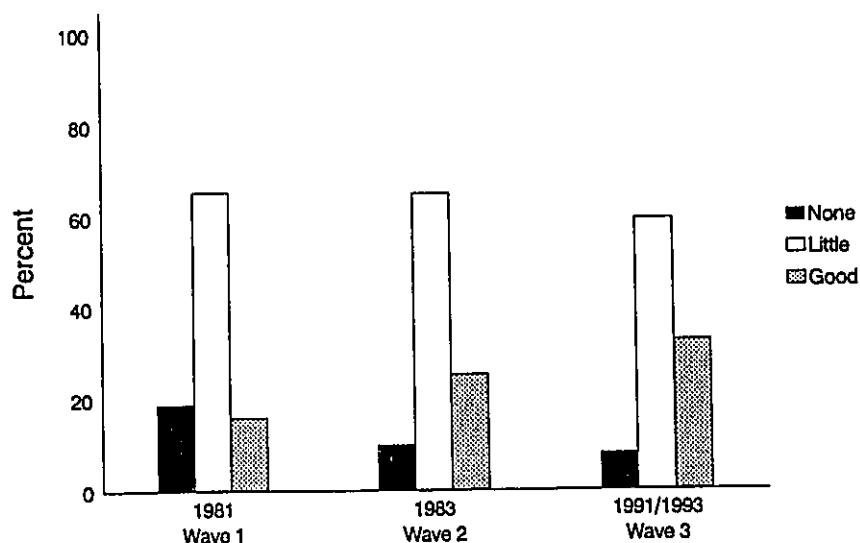
Hypothesis 3. Female Southeast Asian refugees acquire English language facility at a slower rate than Southeast Asian refugee men.

During the first two waves of data collection, respondents were asked (in their native language) to rate their English language ability on a three point scale of *none*, *little* and *good*. In the final wave of data collection, host country language ability was broken down into three components, with three point scale ratings applied to the ability to read, write, and speak English. Because our present interest is in adaptation, for which oral English skills are usually most necessary, the latter of these three measures will be employed in the analyses that follow.

Trends observed in the refugee cohort (Figure 3) show a steady incline in Southeast Asian refugees' ability to use the English language well and a steady decline in the number of respondents who are not able to speak any English.

A repeated measures Analysis of Variance was conducted to determine if the differences in English language ability between male and female Southeast Asian refugees changed over time. It is important to note that this set of analyses included only respondents who were present at all three waves of data collection.

Figure 3: English Language Ability Over Time

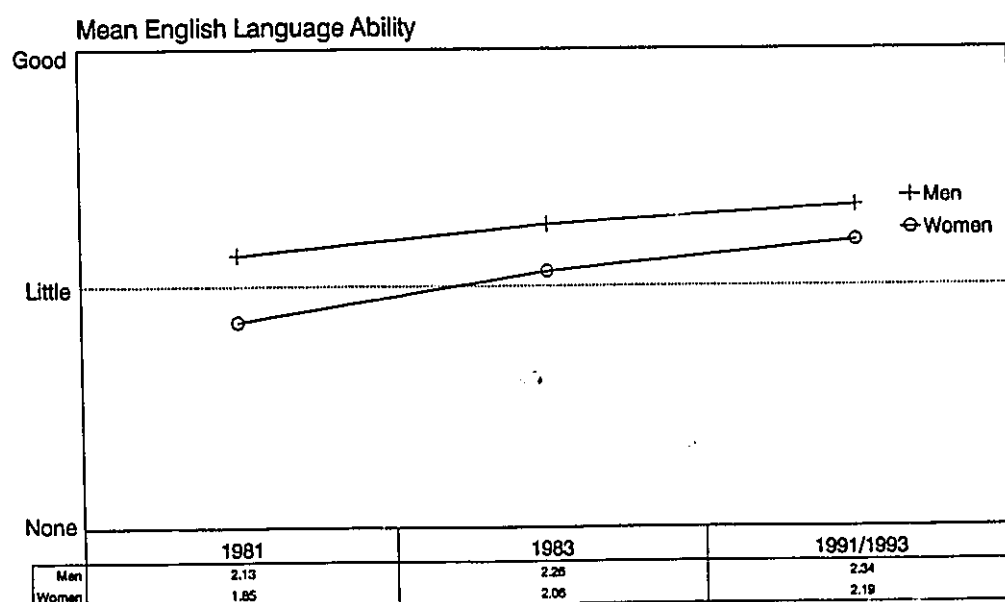


The null hypotheses that there were no differences across time among males and among females was first tested. Testing was first done for simple main effects, involving both between and within subjects effects (see *Keywords*, 1993, pp. 10-14). The results provide sufficient evidence to reject the null hypothesis that the time differences in language ability were zero for males ($F=16.02$, $df=2,1196$, $p<.001$) and for females ($F=31.48$, $df=2,1196$, $p<.001$). Second, the null hypothesis that there were no differences between males and females for each of Wave 1, Wave 2, and Wave 3 were tested. The results provide sufficient evidence to reject the null hypotheses that there were no differences between males and females at Wave 1 ($F=37.68$, $df=1,598$,

$p < .001$), at Wave 2 ($F = 19.08$, $df = 1,598$, $p < .001$), and at Wave 3 ($F = 6.32$, $df = 1,598$, $p < .05$).

A test of the full factorial model was then undertaken, to examine the gender by time interaction. Again, the between-subjects main effect of gender was significant ($F = 29.26$, $df = 1,598$, $p < .001$) as was the within-subjects main effect of time ($F = 47.13$, $df = 2,1196$, $p < .001$). The gender by time interaction was not statistically significant ($F = 2.80$, $df = 2,1196$, $p > .05$). As Figure 4 illustrates, parallel inclines in English language ability over time were evidenced for refugee men and refugee women.

Figure 4: Gender Differences in English Language Ability Over Time

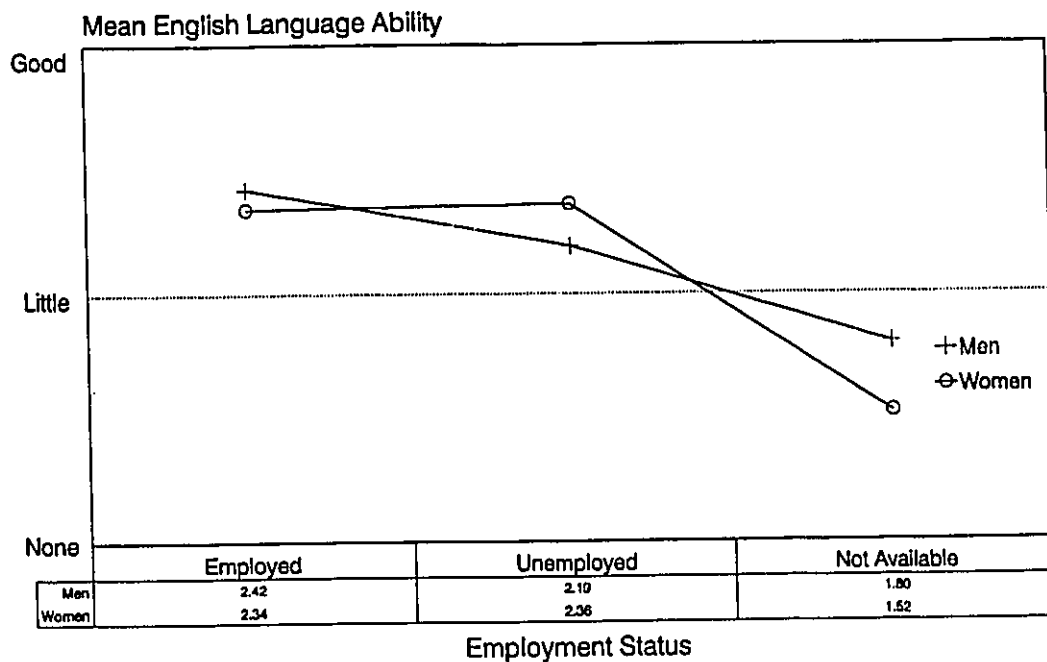


To determine what other demographic factors may have affected the observed gender differences at Wave 3, a MANOVA model was tested. The dependent variable tested was English language ability. The independent variables in the model were age (categorized as less than 30 years, 31 to 50 years, over 50 years), marital status (with

three groups: married and common-law; divorced, separated, and single; and married but forced separation), employment status (employed, unemployed, and not available), education (primary, high school, and college or university), and gender. Interaction terms were also included in the model, with gender by each of the previous demographic variables.

The results of the MANOVA model indicate that ten years after arrival, English language facility was best among refugees who were college or university educated ($F=5.09$, $df=2,595$, $p<.01$), employed ($F=7.04$, $df=2,595$, $p<.01$), and young ($F=9.15$, $df=2,595$, $p<.001$). Closer examination of the not available group reveals that these refugees were older ($x=44$, $sd=15.6$) than either unemployed ($x=32$, $sd=12.3$) or employed ($x=28$, $sd=7.4$) refugees. Controlling for the variance accounted for by these important demographic factors, the observed differences in English language ability between male and female refugees at Wave 3 were not significant. There was, however, a significant interaction between gender and employment status in the MANOVA model ($F=3.82$, $df=2,595$, $p<.05$). As illustrated in Figure 5, female Southeast Asian refugees who are unemployed report the same language ability as the employed women. For men, unemployment is predictive of lower English language ability. For both refugee men and refugee women, being unavailable for employment is associated with poor English language ability.

**Figure 5: Gender Differences in English Language Ability
and Employment Status Ten Years After Arrival in Canada**



Summary of Hypothesis 3

The English language ability of Southeast Asian refugee women and men improved over the course of this research project. Although women reported lower English language ability than men at each of the three waves of data collection, there was no evidence to suggest that women learned at a slower rate than men. Ability increased at parallel rates for both men and women.

Two factors accounted for the gender difference in English language ability that existed among Southeast Asian refugees ten to twelve years after arrival in Canada. First, substantial differences existed in English language ability only a short time (within

two years) after arrival in Canada. This gap remained consistent over the three waves of data collection. Second, employment status appears to have differentially affected men and women. Southeast Asian refugee men who were employed ten to twelve years after arrival reported better English language ability than those who were unemployed. For women, being employed versus unemployed made little difference in English language ability.

Not being available for employment outside the home was strongly predictive of poorer English ability than either being unemployed or employed. For women, this was particularly true, as women who were not available for employment had poorer English language ability than men who were not available.

Hypothesis 4. Female Southeast Asian refugees use fewer strategies to learn the English language than their male counterparts.

English language learning strategies were comprehensively assessed at Wave 2 of the present study. Respondents were asked a series of "yes/no" questions regarding their use of specific learning strategies, including the following: 1) English as a Second Language classes, 2) regular contact with Canadians, 3) practicing with others from the same ethnic group, 4) watching television or listening to the radio, and 5) use of a private tutor.

The first stage of testing the hypothesis that female Southeast Asian refugees employ fewer strategies than males involved five chi square analyses of gender by each of the learning strategies (i.e., male/female by yes/no for each strategy). Southeast Asian refugee women were found to be less likely to take a formal English

as a Second Language class than refugee men ($X^2=33.37$, $df=1$, $p<.00001$). They were also less likely than men to improve their English language facility through contact with other Canadians ($X^2=13.46$, $df=1$, $p<.0005$) or by watching television or listening to the radio ($X^2=16.82$, $df=1$, $p<.00005$). There were no gender differences apparent in learning English by practicing with others from the same ethnic group or by using a private tutor.

Table 5: Overview of Gender Differences in Use of English Language Strategies

		Men		Women	
		n	(column %)	n	(column %)
E.S.L. Attendance	yes	617	(93.8)	425	(83.2)
	no	41	(6.2)	86	(16.8)
Contact with Canadians	yes	375	(57.0)	236	(46.2)
	no	283	(43.0)	275	(53.8)
Watch T.V./Listen to Radio	yes	427	(64.9)	271	(53.0)
	no	231	(35.1)	240	(47.0)
Practice with Same Ethnicity	yes	67	(10.2)	52	(10.2)
	no	591	(89.8)	459	(89.8)
Use Private Tutor	yes	51	(7.8)	45	(8.8)
	no	607	(92.2)	466	(91.2)

The second stage involved determining if these gender differences in learning strategies were simply an artifact of other demographic differences between males and females. For each of the learning strategies in which a statistically significant difference was found between males and females, a logistic regression was performed. The effect of gender on learning was then substantiated by controlling for the effects of

age, education level, employment status and marital status.

Each logistic regression model was entered in three steps. In the first model, use of E.S.L. classes was the dependent variable with age, education, two dummy variables of employment (versus others) and unemployment (versus others), and marital status (single versus others) entered as the first block of independent variables, using a forced entry method. With the variance accounted for by these variables in the logistic regression model, gender was entered as a second block. Third, the interaction terms of gender by each of the demographic variables was entered, with a forward stepping technique so that only the interaction terms which contributed significantly to the model were included.

Table 6a reveals that while controlling for other demographic variables, gender differences still accounted for the most significant predictor of attending E.S.L. programs ($B=2.51$, $Wald=14.09$, $p<.0005$). As the earlier chi square analyses demonstrated, men were more likely to attend these programs than women. Education was predictive of attendance ($B=1.65$, $Wald=7.35$, $p<.01$), with an education by gender interaction also making a significant contribution to the overall model ($B=-1.05$, $Wald=7.69$, $p<.01$). Examining this interaction more closely, the likelihood of men attending E.S.L. classes decreased with education (i.e., 95% of men who had completed only a primary education, 94% who had finished high school, and 87% who had some college or university attended E.S.L. classes). For women, having a high school education increased the likelihood of attending (90%) over those with college or university (86%) or individuals with only primary school educations (76%).

The two dummy employment variables of unemployed versus others ($B=.86$, $Wald=8.49$, $p<.005$) and employed versus others ($B=.86$, $Wald=10.65$, $p<.005$) were significantly predictive of E.S.L. attendance. That both dummy variables proved to be significant, positive predictors of E.S.L. attendance indicates that it was refugees who were not available for employment who were less likely to attend E.S.L. classes. Finally, age proved to be a moderate predictor ($B=.03$, $Wald=10.44$, $p<.005$) of E.S.L. usage, with younger refugees more likely to attend. Marital status was not significantly related to E.S.L. use, nor were the interaction terms of gender by marital status, gender by employment, gender by unemployment, or gender by age.

Table 6a: Logistic Regression of E.S.L. Attendance

Variable ^a	<i>B</i>	Wald	EXP(B)
Age ^b	.028**	10.44	1.02
Education	1.648*	7.35	5.19
Employed vs others	.859**	10.65	2.36
Unemployed vs others	.862**	8.49	2.37
Marital status (single vs others)	.371	1.68	1.45
Gender ^b	2.508***	14.09	12.28
Gender by Education ^c	-1.050*	7.69	.35
Constant	-10.498***	56.55	
Model $X^2(-2 \text{ Log L.R.})^d$	693.983**		

^an=1139.

^bForced entry method.

^cStepwise entry method.

^dCorrect prediction = 89.8%

* $p<.05$; ** $p<.005$; *** $p<.0005$.

The model representing contact with Canadians was not significant. In the model for watching television/listening to the radio, less well educated refugees ($B=-.53$, $Wald=19.58$, $p<.0005$) tended to use this strategy more than educated

refugees. Other significant predictors were employment versus others ($B=.39$, $Wald=3.86$, $p<.05$), unemployment versus others ($B=.45$, $Wald=4.51$, $p<.05$), and age ($B=.02$, $Wald=7.38$, $p<.05$). Again, these results indicate that it is refugees who are younger and not available for employment who are least likely to use this learning strategy. Controlling for these demographic variables, gender ($B=.3$, $Wald=4.89$, $p<.05$) was also a significant predictor, with men employing this learning strategy more than women. None of the interaction terms was a significant predictor of listening to the radio or watching television as an English language learning strategy at Wave 2.

**Table 6b: Logistic Regression of English Language Learning Strategies
on Watching T.V./Listening to the Radio**

Variable ^a	<i>B</i>	Wald	EXP(B)
Age ^b	.018*	7.38	1.02
Education	-.529***	19.58	.59
Employed vs others	.386*	3.86	1.47
Unemployed vs others	.450*	4.51	1.57
Marital status (single vs others)	.227	2.05	1.26
Gender	.301*	4.89	1.35
Constant	-2.269**	11.64	
Model X ² (-2 Log L.R.) ^c	1437.919*		

^a $n=1132$; listwise deletion of missing data; original sample size equals 1139.

^bForced entry method.

^cCorrect prediction = 64.7%

* $p<.05$; ** $p<.005$; *** $p<.0005$.

Summary of Hypothesis 4

Female Southeast Asian refugees did use fewer strategies than males to learn the English language. Of the English language learning strategies investigated, female and male Southeast Asian refugees were not found to differ in their likelihood of

practicing with others from the same ethnicity nor their use of a private tutor. There were significant differences, however, in the use of E.S.L. classes, using regular contact with Canadians, and in watching television or listening to the radio.

Controlling for significant predictors of E.S.L. class use such as employment status and age, men were still more likely to attend than women. This, despite the fact that men also had higher levels of education, a factor negatively correlated with E.S.L. use by men. Among women, being high school educated was associated with E.S.L. use, followed by those with college/university education, and lastly, by only primary school educations. The model accounting for the observed difference in use of regular contact with Canadians was not statistically significant, indicating that this difference was simply an artifact of other demographic differences.

There were several significant predictors of television and radio use to learn the English language including education (use was lower among higher educated refugees), employment status, and age (use was higher among older refugees). Controlling for these factors, gender was still a significant predictor, with men using this strategy more than women.

Hypothesis 5. Language acquisition is predicted by the following: a) differences in the use of language strategies, and b) gender differences in the use of these strategies, in particular, the use of English as a Second Language classes.

Using data from the second survey wave, a multiple regression analysis was performed with English language facility as the dependent variable. Independent variables were entered in three blocks, using a forced entry method within each block.

The first block included the demographic variables of gender, age, education, and marital status (recoded as married versus not married). The second block entered the five learning strategies. The third block entered the two-way interactions of gender by each of the learning strategies. This approach statistically controls the variance accounted for by first, possible confounding variables (e.g., the demographic variables), and second, the learning strategies. With these variables accounted for in the model, it is then appropriate to enter the variables which test the original hypothesis - the interaction terms of gender by each learning strategy.

The findings in Table 7 indicate that while controlling for other demographic variables, gender is a significant predictor of English language ability ($B=.98, p<.001$) with men reporting higher levels of ability than women, on average. Marital status ($B=-.10, p<.005$), education ($B=.03, p<.0001$) and age ($B=-.01, p<.0001$) were also predictive of English language ability. That is, English ability was best among refugees who were single, educated and young.

Table 7: Multiple Regression of English Language Ability on Demographic**Variables and English Language Learning Strategies**

Variable ^a	<i>B</i>	Standard error
Marital Status ^b	-.102**	.034
Education	.242***	.026
Age	-.015***	.001
Gender	.975**	.278
Practice with Same Ethnicity	.284*	.144
Private Tutor	.251	.158
Contact with Canadians	-.036	.097
E.S.L. Classes	.345*	.163
Watch Television or Listen to Radio	-.246*	.101
Gender x Practice with Same Ethnicity	-.171	.095
Gender x Private Tutor	-.270*	.103
Gender x Contact with Canadians	-.079	.064
Gender x E.S.L. Classes	-.237*	.095
Gender x Watch Television or Listen to Radio	.113	.066
<i>R</i> ²	.35	

**n*=1127; listwise deletion of missing data; original sample size equals 1139.

^aAll variables entered in blocks with forced entry method.

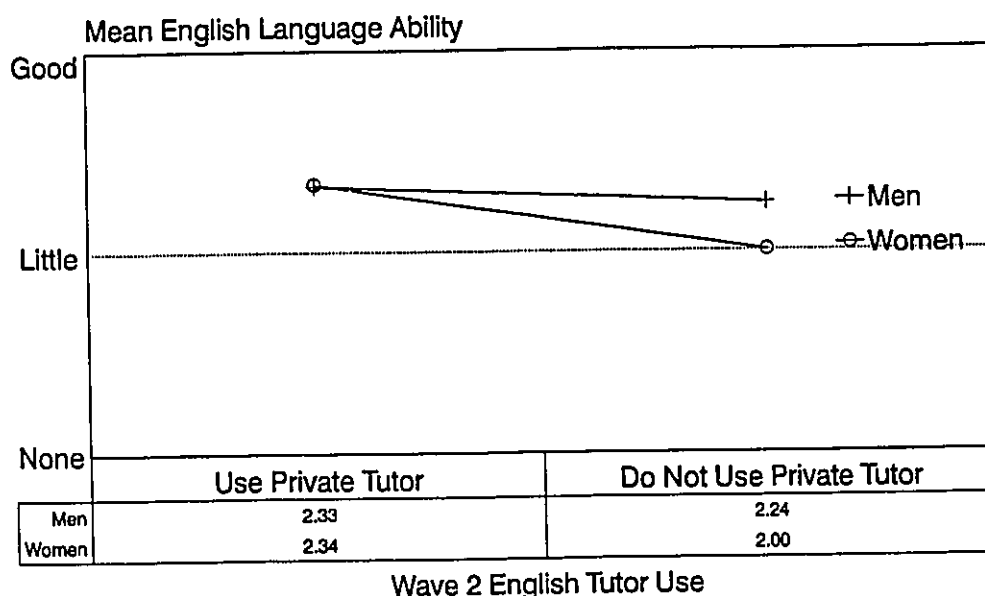
p*<.05; *p*<.005; ****p*<.0005.

With these demographic variables controlled for in the regression model, three language strategies proved to be significant predictors of language ability. Practicing English with others of the same ethnicity was associated with better English language ability ($B=.28$, $p<.05$). Watching television or listening to the radio was significantly related ($B=-.25$, $p<.05$), indicating that individuals who did not engage in these behaviours as a learning strategy had better English language ability. Attending English as a Second Language classes was also a significant predictor of language ability ($B=.35$, $p<.05$), indicating that refugees who did so had better command of the

English language.

The interaction term of gender by using a private tutor was a significant predictor ($B=-.27, p<.05$) of English language ability. As Figure 6 illustrates, men who use a private tutor have only moderately better English language ability than men who do not. For women, the advantage of using a tutor appears to be more substantial; English language ability is higher than for women who do not use a tutor as well as higher than men who do use a tutor.

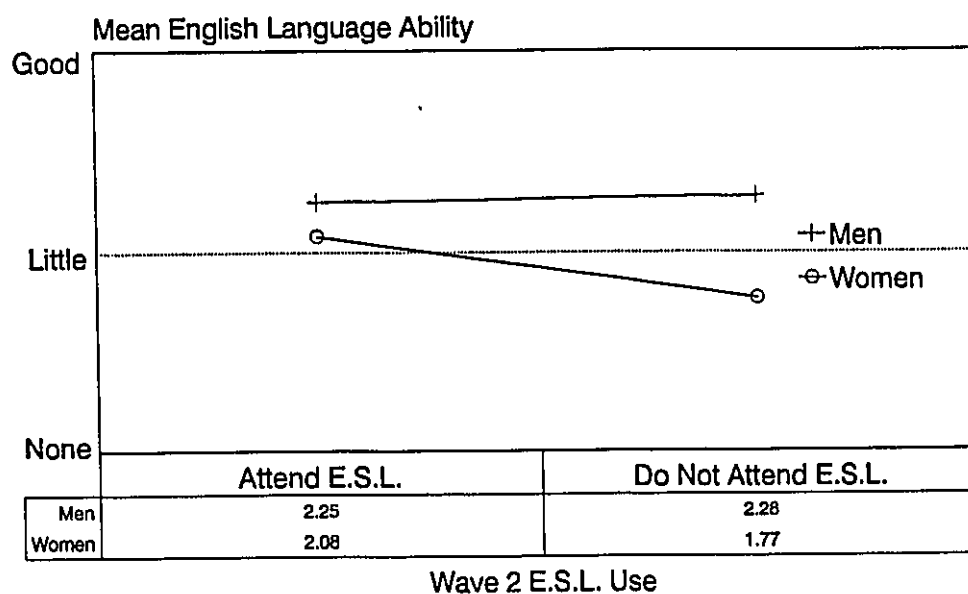
**Figure 6: Gender Differences in English Language Ability
by Use of a Tutor**



The interaction term of gender by E.S.L. class use was also a significant predictor ($B=-.24, p<.05$) of English language ability. Figure 7 illustrates that for Southeast Asian refugee men there is virtually no difference in English language ability between those who attend E.S.L. class and those who do not. For women, there is a

significant improvement in English language ability among those who attend E.S.L. over those who do not.

Figure 7: Gender Differences in English Language Ability
by E.S.L. Class Use



Summary of Hypothesis 5

The evidence confirms that language acquisition does vary according to the type of language strategy employed and between men and women. Several demographic variables predict English language ability, including marital status, education, and age. That is, single individuals had better language facility than married refugees; language ability also was better among individuals with higher education and who were younger. Controlling for these variables, practicing with ethnically similar others and attending E.S.L. classes was significantly related to better English language ability. By contrast, the strategy of watching television or listening to the radio was related to lower

language ability.

Men who use a private tutor report the same language ability as men who do not, and only moderately better language ability than women who use a tutor. However, women who do not use a private tutor have significantly lower English language ability than women who use a tutor as well as lower ability than men. A similar gender by strategy interaction exists for E.S.L. class attendance. There is no difference in language ability between men who attend E.S.L. classes and men who do not. However, women who attend E.S.L. classes report significantly better language ability. In either case, men report better language ability than women.

Hypothesis 6. Better English language facility and higher rates of employment by males than females at Wave 2 and Wave 3 will predict mental health at Wave 3.

To investigate the relationships among gender, employment status, mental health, and English language use, multiple regression analyses were performed for the mental health scales of depression, somatization and well-being. In order to test the hypothesis, variables were entered into the regression analysis in stages or blocks, using a forced entry method. With this method, the variance of one set of variables is controlled for in the model before the inclusion of subsequent variables. For the present models, that meant controlling for variance accounted for by English language ability and employment status at Wave 2 before entering the Wave 3 variables. Interaction terms were then entered last.

Specifically, levels of mental health at Wave 3 were regressed on gender, employment status at Wave 2 (with two dummy variables - employed versus

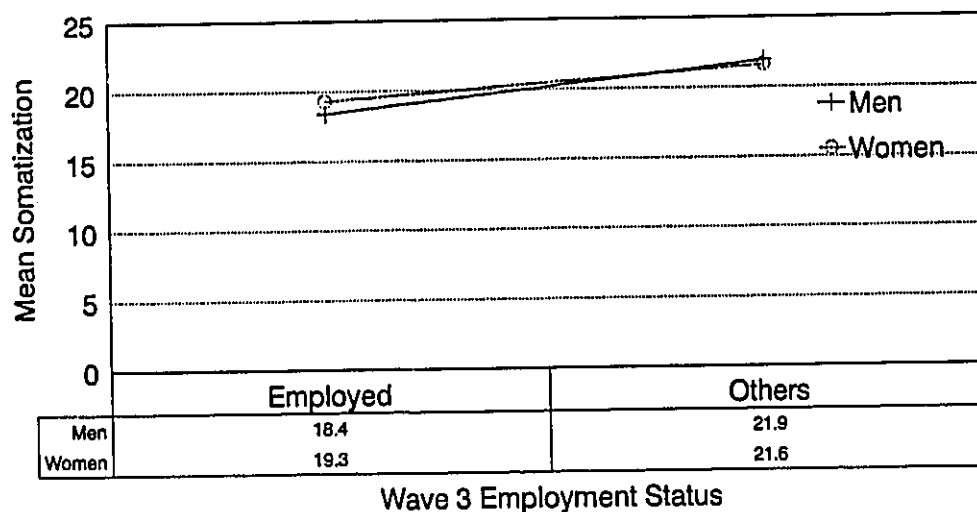
unemployed, employed versus not available), employment status at Wave 3 (with two dummy variables), language facility at Wave 2, language facility at Wave 3, and six 2-way interactions (i.e., four gender by dummy employment variables at Wave 2 and Wave 3, followed by two gender by language ability variables at Wave 2 and Wave 3). The variables were entered into the model in three blocks. Gender and the Wave 2 independent variables were entered as block one, the Wave 3 variables were entered in block two, and the six interaction terms were entered in block three. In these models, the interaction terms present the critical test of whether gender differences in language ability and employment status accounts for the variance in mental health.

For depression, the final regression model was significant ($F=3.77$, $df=13,586$, $p<.0001$), accounting for eight percent of the variance ($R^2=.08$). Only one variable in the final model proved to be a significant predictor of depression, the dummy variable of unemployed versus others at Wave 2 ($B=-5.53$, $p<.05$). The results indicate that unemployment at Wave 2 alone was predictive of depression at Wave 3.

For somatization, the final regression model was significant ($F=6.31$, $df=13,586$, $p<.0001$), accounting for 12 percent of the variance ($R^2=.12$). The dummy employment variables at Wave 3 of unemployed versus others ($B=6.35$, $p<.05$) and employed versus others ($B=8.92$, $p<.0005$) proved to be significant predictors of Wave 3 somatization. The two corresponding interaction terms of employed versus others by gender ($B=-4.04$, $p<.005$) and unemployed versus others by gender ($B=-4.03$, $p<.01$) also were significantly predictive of somatization at Wave 3. Somatization levels were slightly higher among women than men overall, as Figure 8 illustrates, with the gender

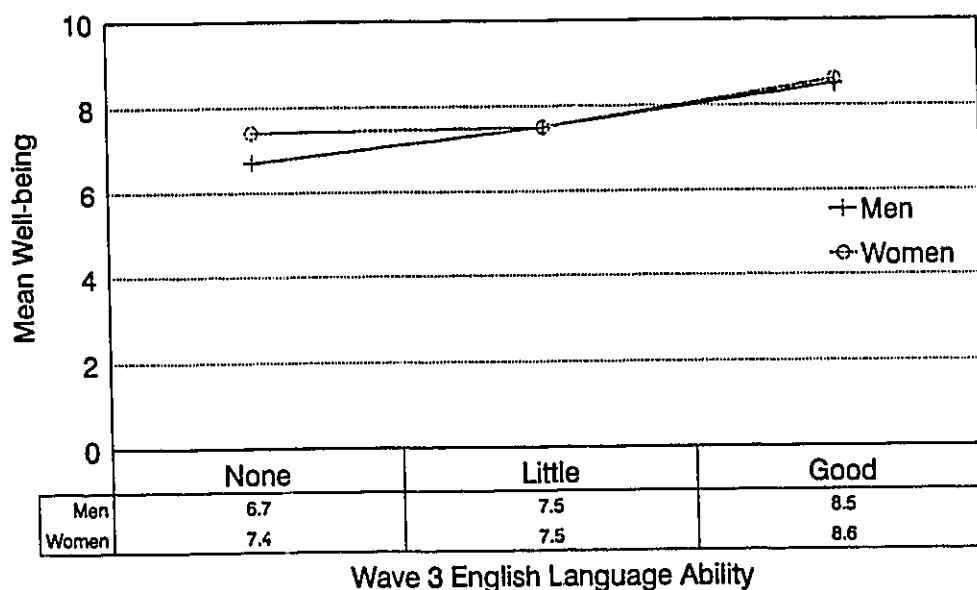
gap moderately increasing for employed refugees in the Wave 3 sample.

**Figure 8: Gender Differences in Somatization at Wave 3
by Employment Status**



For well-being, the overall regression model was significant ($F=3.45$, $df=13,584$, $p<.0001$), accounting for seven percent of the variance ($R^2=.07$). Two variables were predictive of well-being, Wave 3 English language ability ($B=1.83$, $p<.0001$) and the Wave 3 interaction term of gender by language ability ($B=-.94$, $p<.0005$). Figure 9 illustrates the gender differences in English language ability at Wave 3 associated with differing levels of well-being. For refugees with no English language facility, the levels of well-being are moderately higher among women than men. For refugees who either speak a little English or speak it well, there is no gender difference in levels of well-being.

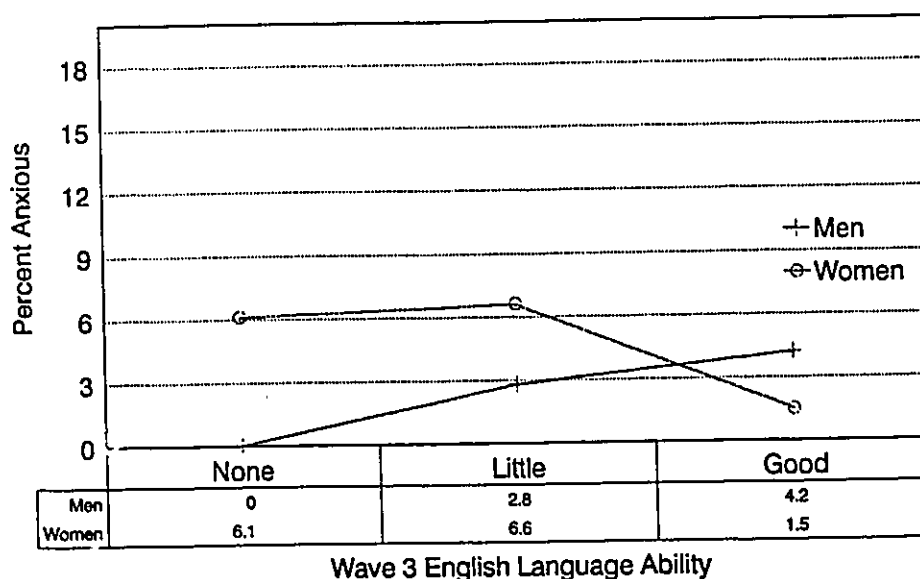
Figure 9: Gender Differences in Well-Being at Wave 3
by English Language Ability



For the anxiety measure, the same modelling approach was taken using logistic regression. That is, the categorical variable of anxiety at Wave 3 was regressed on gender, employment status at Wave 2 (with two dummy variables - employed versus unemployed, employed versus not available), employment status at Wave 3 (with two dummy variables), language facility at Wave 2, language facility at Wave 3, and six 2-way interactions (i.e., four gender by dummy employment variables at Wave 2 and Wave 3, followed by two gender by language ability variables at Wave 2 and Wave 3). The variables were entered into the model in three blocks, using a forced entry method. Gender and the Wave 2 independent variables were entered as block one, the Wave 3 variables were entered in block two, and the six interaction terms were entered in block three.

The results indicate that the overall model was significant (-2 Log Likelihood=167.85, Model Chi-Square=13.14, df=6, $p<.05$). Three variables proved to be significant predictors of anxiety. First, Wave 3 English language ability ($B=-3.89$, $p<.05$) was a significant predictor, indicating that as English language ability increases, anxiety decreases. Second, Wave 3 employed versus others was a significant predictor ($B=-5.64$, $p<.05$), indicating that anxiety was higher among refugees who were not employed. Third, the Wave 3 interaction term of gender by language ability was significant ($B=2.41$, $p<.05$). Figure 10 illustrates the gender differences in language ability for respondents who were anxious versus those who were not anxious. Of the refugees who spoke little or no English, women were more likely to be anxious than men; of the refugees who spoke English well, men were more likely to be anxious than women.

Figure 10: Gender Differences in Anxiety at Wave 3
by Language Ability



Summary of Hypothesis 6

There was insufficient evidence to support the hypothesis that gender differences in English language ability and employment status predict depression at Wave 3. Somatization was predicted by gender differences in employment status at Wave 3. Although differences evidenced were marginal, the interaction was statistically significant; employed women had slightly higher somatization levels than men while men who were not employed (i.e., those either unemployed or not available) had slightly higher levels than women. Well-being was predicted by gender differences in English language ability at Wave 3. Women with no English language ability report higher levels of well-being, on average, than men. No gender differences were apparent among those reporting "little" or "good" English language ability. Anxiety at Wave 3 was predicted by not being employed and having poor English language ability. Gender differences in language ability were also predictive of anxiety at Wave 3. Women who spoke little or no English were more likely to be anxious than men; among those speaking English well, men were more likely to be anxious than women.

Hypothesis 7. The trend in mental health differences between male and female SEAs will change over time such that women will have better mental health than men at Wave 1, there will be no difference at Wave 2, and men will have better mental health than women at Wave 3.

Table 8 summarizes the differences in mental health scores for men and women at each of the waves of data collection. The results for depression show a trend in the direction of that hypothesized, with men experiencing higher levels of depression than

women at Wave 1, no differences apparent at Wave 2, and women having higher levels of depression at Wave 3. Nonetheless, only the Wave 1 differences are statistically significant. The percentage of men who reported anxiety were consistently higher than that of women throughout the course of the study, with the differences in the first two waves reaching statistical significance. Unlike depression levels, which remained fairly consistent throughout the three waves, the percentage of respondents reporting anxiety steadily declined.

Table 8: Gender Differences in Mental Health Over Time

	Depression¹ mean (sd)	Anxiety² n (row %)	Somatization¹ mean (sd)	Well-Being¹ mean (sd)
Wave 1				
women	23.22 (5.8)	57 (7.4)	21.05 (5.0)	6.83 (2.0)
men	24.25 (6.3)*	64 (11.4)*	20.35 (4.6)*	6.99 (2.1)
Wave 2				
women	21.92 (5.2)	29 (4.4)	20.96 (5.3)	6.23 (1.7)
men	21.95 (5.3)	42 (8.2)*	19.58 (4.5)**	6.39 (1.8)
Wave 3				
women	21.16 (5.3)	12 (3.2)	20.12 (5.0)	7.69 (2.1)
men	20.42 (4.8)	14 (5.2)	19.21 (4.5)*	7.85 (2.0)

¹ 2-tailed t-tests performed for continuous variables.

² X² value calculated for categorical variable.

*p<.05; **p<.005.

Women refugees were, on average, consistently more somatic than their male counterparts throughout the study. Gender differences in well-being were not statistically significant at any of the three waves of data collection, although the average level for men was slightly higher than that for women throughout.

Summary of Hypothesis 7

Evidence from this study does not support the hypothesis. Although trends in

depression levels were in the direction hypothesized, only the higher levels observed for men than women at Wave 1 were statistically significant. The percentage of both men and women who were anxious steadily declined over the course of study, with men more likely than women to be anxious through Wave 1 and Wave 2. By contrast, women, on average, were consistently more somatic than men at all three waves of data collection. There were not statistically significant gender differences in levels of well-being at any of the three waves.

Hypothesis 8. Initially, SEA refugee women who work inside the home will experience better mental health than women who work outside the home but this result will change over time such that women who work outside the home will experience better mental health than women who work inside the home.

A descriptive summary of the numbers of women in the refugee cohort who worked inside the home (i.e., who were classified home makers) and outside the home appears in Table 9.

Table 9: Summary of Women

Working Inside versus Outside the Home

	Wave 1 n (column %)	Wave 2 n (column %)	Wave 3 n (column %)
Inside	94 (16.4)	67 (13.1)	17 (6.3)
Outside	272 (47.5)	258 (50.0)	171 (63.8)
Unemployed	85 (16.0)	119 (23.3)	50 (18.7)

Excluded from this Table are students, women undergoing job training, the elderly, and

others not able to work (e.g., pregnant or handicapped). In the survey, respondents were asked if they worked full-time. Individuals who responded affirmatively were subsequently asked to indicate how many hours per week they worked. At Wave 1, the mean number of hours worked among women working full-time was 36 (sd=9.2), with six women working over 50 hours per week and 16 working less than 20 hours. At Wave 2, the mean number of hours worked by women was 38 (sd=7.1), with four working over 50 hours per week and six working less than 20 hours. At Wave 3, 13 women worked over 50 hours per week while four worked less than 20 hours. The mean number of hours worked at Wave 3 was 40 (sd=9.7).

Table 10 summarizes the mental health differences in women who work outside the home versus those who work inside the home. Out of the three waves of data collection and four mental health scales employed, only one set of differences reached conventional levels of statistical significance. At Wave 2, women who worked inside the home were more frequently anxious than women who worked outside of the home. Considerable caution must be taken in interpreting this one statistically significant result, however, given the small numbers of respondents.

Table 10: Mental Health Differences in Women**Who Work Inside versus Outside the Home**

	Depression¹ mean (sd)	Anxiety² n (row %)	Somatization¹ mean (sd)	Well-Being¹ mean (sd)
Wave 1				
inside	22.95 (5.8)	11 (11.7)	21.16 (5.1)	6.65 (2.1)
outside	22.74 (5.5)	26 (9.9)	20.60 (4.8)	7.04 (2.0)
Wave 2				
inside	21.73 (5.2)	7 (10.4)	21.01 (5.2)	6.15 (1.6)
outside	21.03 (4.6)	11 (4.3)*	20.24 (4.8)	6.53 (1.7)
Wave 3				
inside	20.18 (5.2)	1 (5.9)	20.76 (5.6)	7.41 (2.1)
outside	20.74 (4.9)	7 (4.1)	19.29 (4.2)	7.81 (1.9)

*p<.05.

¹ 2-tailed t-tests performed for continuous variables.² X² value calculated for categorical variable.**Summary of Hypothesis 8**

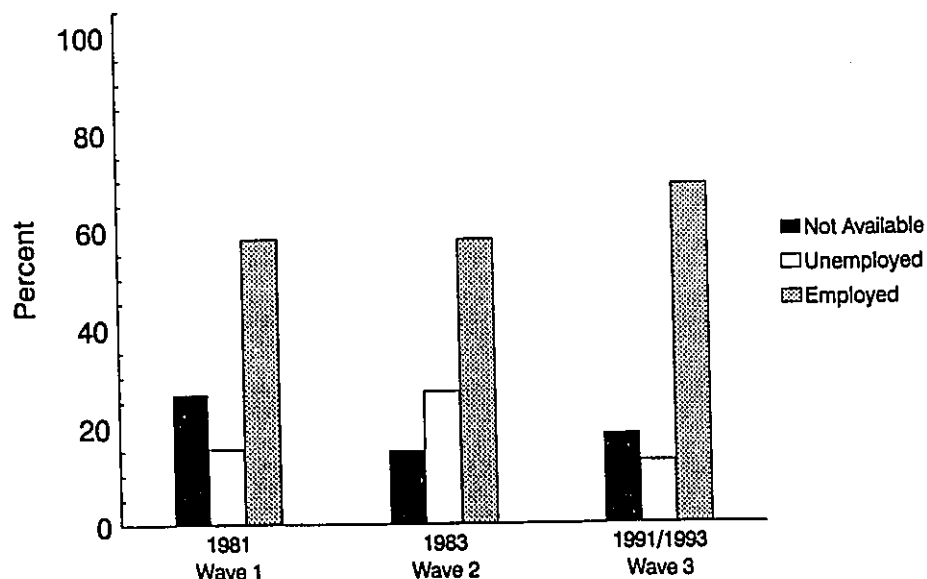
There was not sufficient evidence to support the hypothesis concerning the mental health advantages, over time, of women working inside versus outside of the home. The differences in depression levels over time were trivial and statistically insignificant, with a small trend in the opposite direction from that hypothesized. Indeed, the only statistically significant difference occurring was in the frequency of anxiety reported at Wave 2, with women working inside the home reporting anxiety more often than women working outside the home.

Hypothesis 9. Men will experience greater persistent occupational decline than women in their change from employment in Vietnam to Canada.

Since their arrival in Canada, the number of refugees who can successfully enter

the labour market should increase over time as they gain more vocational skills and become more familiar with Canadian norms and practices. Changes in their labour market status are also greatly affected by the economic climate. The refugees in this cohort arrived in Canada between 1979 and 1981, a period in which the economy was going through a downturn that resulted in an economic recession in 1982. Coincidental with the third wave of data collection, from 1991 to 1993 there was again an economic recession. Competing circumstances are likely to affect refugees' ability to secure employment: job-related skills improve but the economic climate remains difficult. Figure 11 illustrates that employment rates in the refugee cohort increased over time, just as the unemployment rates steadily declined, despite the two economic recessions.

Figure 11: Employment Status Over Time



Since most refugees experience initial decline in their occupational status upon entry to Canada, persistent occupational decline will be defined as occupational status

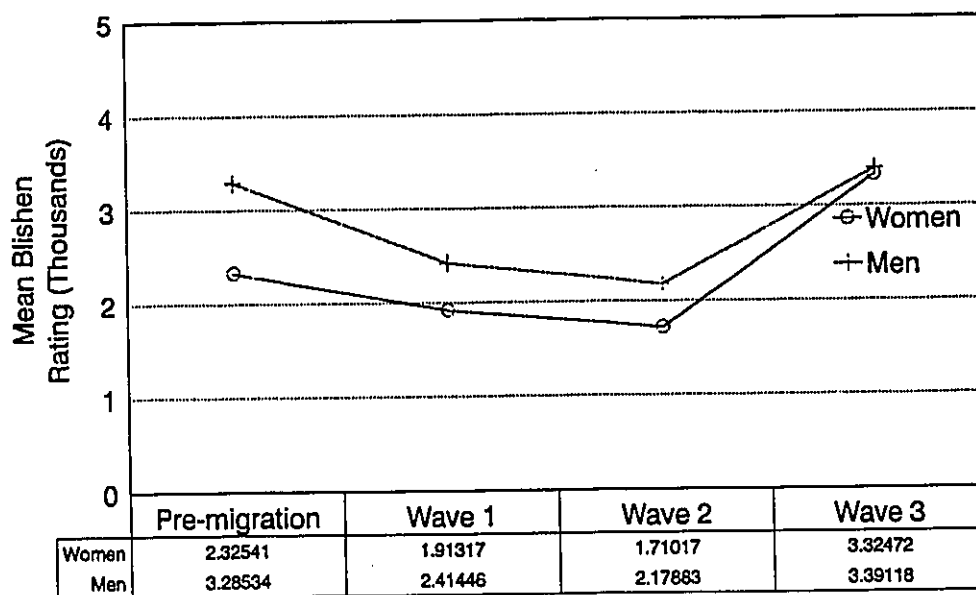
which, ten to fifteen years after arriving in Canada, is still statistically significantly lower than that previously held in Vietnam. A repeated measures ANOVA was performed with occupational status measured for jobs held in Vietnam and at each of the three survey waves as the dependent variables and with gender as the independent variable. As points of reference, a score of 2700 on the Blishen scale is equivalent to labourers or domestics, 5600 for owners of small businesses, and 7600 for university professors and physicians. Unfortunately, the Blishen ratings exclude homemaker as an occupation, an oversight which restricts this important group from the current analysis.

In the repeated measures ANOVA the main effects of gender ($F=33.51$, $df=1,444$, $p<.001$) and time ($F=67.34$, $df=3,1332$, $p<.001$) were statistically significant. The interaction term of gender by time also was significant ($F=5.47$, $df=3,1332$, $p<.005$). The mean occupational status of both men and women declined after their arrival in Canada and continued to drop until the second wave of data collection, in 1983. The prearrival discrepancy in occupational status between men and women was substantial, with an average drop of 959.93 points on the Blishen scale of occupational prestige². Although occupational status declined for both up until 1983, it did so more rapidly for men, dropping 1106.51 points for men and approximately half this amount for women, 615.24 points. By Wave 3, occupational decline was no longer evident, with men having increased their occupational prestige, on average, by 105.84 points from the job positions held in Vietnam. Women made more substantial gains, rising

²Note that one limitation of the Blishen occupational prestige scale is that it fails to include the role of homemaker. For present purposes, this category of occupation is therefore necessarily excluded.

999.31 points to a level only slightly less than that of their male counterparts. That is, the pre-migration occupational difference between men and women was 959.93 points; ten to fifteen years after arrival, this discrepancy was narrowed to 66.46 points. Figure 12 illustrates these gender differences over time.

Figure 12: Gender Differences in Occupational Status Over Time



Summary of Hypothesis 9

Men experienced greater occupational decline than women during the first two waves of data collection. However, contrary to what was hypothesized, by Wave 3 both men and women were at jobs better than the ones they held in Vietnam. The large discrepancy which existed between men's and women's jobs in Vietnam was also no longer evident by the final survey.

Hypothesis 10. An effect of underemployment on mental health will be evidenced at Wave 3, in particular for male SEA refugees.

Given the results of the previous hypothesis in which, for the refugee group as a whole, no evidence of underemployment was found for Wave 3, an examination of the effect of occupational change on mental health was investigated for each of the three survey waves. To assess the mental health effects of these changes in employment status on mental health, a status discrepancy score was calculated by the following method (see Beiser et al., 1993, p. 739, who used this technique in a study involving the first two waves of data collected). First, standardized regression scores were calculated by regressing Wave 1 (and, separately, Wave 2 and Wave 3) Blishen scores on the pre-migration Blishen scores and years of education. (The importance of including education as a component of underemployment was demonstrated by Beiser and his colleagues who reported a high correlation between pre-migration occupational status and education for refugees. After resettling, most refugees experienced a decline in job status, with the highly educated suffering the greatest decline.) The second step involved subtracting a standardized Blishen score at Wave 1 (and, separately, at Wave 2 and Wave 3) from the predicted regression score. Beiser and his colleagues reported finding no evidence of a correlation between these "discrepancy scores" and depression at either Wave 1 or at Wave 2.

With the current analysis, this issue was again examined. A regression modeling approach was taken, with the following extension of the earlier analyses: 1) examining the relationship between status discrepancy and anxiety, somatization, and

well-being in addition to depression, 2) including the third wave of data, and 3) investigating gender differences. In these regression models, mental health was the dependent variable. The independent variables entered into the model as the first block were the discrepancy score and gender. Second, the interaction of gender by occupational discrepancy was entered. The first set of variables represent the main effects of interest in the model, with the interaction term entered last as the primary variable of interest. Multiple regression analyses were performed for depression, somatization, and well-being at each of the three survey waves. Logistic regression analyses were conducted for anxiety. For this set of regression analyses, other demographic variables were not included in the models because *a priori* there was evidence that the correlations between mental health and status discrepancy were quite low. Extracting additional variance from the dependent variables before testing the predictor variables of interest would create an unnecessarily stringent test of the hypothesized relationships.

Table 11a summarizes the results of the multiple regression analyses undertaken for depression at each of the three survey waves. The Wave 1 regression model was statistically significant ($F=5.60$, $df=3,1334$, $p<.005$), accounting for only one percent of the variance in depression levels ($R^2=.01$). At Wave 1, gender was a significant predictor of depression ($B=-.95$, $p<.005$), indicating that males were more likely to be depressed at Wave 1. There were no observable effects of occupational discrepancy in the model nor a significant gender by occupational change interaction. No effects of interest were indicated at Wave 2, although the overall model was

significant ($F=5.35$, $df=3,1160$, $p<.005$), accounting for one percent of the variance in depression scores ($R^2=.01$). The regression model for Wave 3 proved to be statistically non-significant ($F=1.86$, $df=3,440$, $p>.05$).

Table 11a: Regression of Depression on Gender and Occupational Change

Variable	Wave 1 ^a <i>B</i>	Wave 2 ^b <i>B</i>	Wave 3 ^c <i>B</i>
Gender	-.95**	-.37	.98*
Occupational Change	-.63	.15	-.07
Gender x Occupational Change	.19	-.09	.07
R^2	.01	.01	.01

^a $n=1060$; listwise deletion of missing data; original sample size equals 1348.

^b $n=938$; listwise deletion of missing data; original sample size equals 1169.

^c $n=410$; listwise deletion of missing data; original sample size equals 642.

* $p<.05$; ** $p<.005$.

Table 11b summarizes the results of a further three multiple regression analyses, in this case with somatization as the dependent variable. Somatization was predicted by gender ($B=.66$, $p<.05$), indicating that women were more likely to be somatic than men. None of the other variables of interest at Wave 1 were significant, although the overall model was significant ($F=3.67$, $df=3,1335$, $p<.05$). The Wave 2 regression model was significant ($F=7.69$, $df=3,1160$, $p<.0005$), accounting for two percent of the variance in somatization ($R^2=.02$). Similarly, the Wave 3 regression model was significant ($F=3.33$, $df=3,440$, $p<.05$), accounting for two percent of the variance ($R^2=.02$). Gender was predictive of somatization levels at Wave 2 ($B=1.39$, $p<.0005$) and at Wave 3 ($B=.99$, $p<.05$), indicating that women were more likely than men to have somatic symptoms after settling in Canada for three to five years, with these differences still apparent ten years after arrival. However, occupational change

did not predict somatization levels nor did the gender by occupational change interaction terms.

Table 11b: Regression of Somatization on Gender and Occupational Change

Variable	Wave 1 ^a <i>B</i>	Wave 2 ^b <i>B</i>	Wave 3 ^c <i>B</i>
Gender	.66*	1.39***	.99*
Occupational Change	-.01	.01	.08
Gender x Occupational Change	.14	-.02	.09
<i>R</i> ²	.01	.02	.02

^an=1061; listwise deletion of missing data; original sample size equals 1348.

^bn=938; listwise deletion of missing data; original sample size equals 1169.

^cn=410; listwise deletion of missing data; original sample size equals 642.

*p<.05; ***p<.0005.

Table 11c summarizes the results of the three multiple regression analyses undertaken with well-being as the dependent variable. The Wave 2 regression model was statistically significant ($F=8.45$, $df=3, 1160$, $p<.0005$), accounting for 2 percent of the variance in well-being ($R^2=.02$). In this model, occupational discrepancy was a significant predictor of well-being ($B=.26$, $p<.05$), indicating ironically that as discrepancy increased, well-being also increased. For Wave 3, occupational discrepancy ($B=.25$, $p<.005$) and gender by occupational change ($B=-.17$, $p<.005$) were significant predictors of well-being. The overall model was significant ($F=5.14$, $df=3, 428$, $p<.005$). As refugees, on average, increased their occupational status from pre-migration to Wave 3, this result indicates that the increase had a slightly positive effect on well-being, more so for men than for women.

Table 11c: Regression of Well-Being on Gender and Occupational Change

Variable	Wave 1 ^a <i>B</i>	Wave 2 ^b <i>B</i>	Wave 3 ^c <i>B</i>
Gender	-.18	-.20	-.13
Occupational Change	.03	.26*	.25**
Gender x Occupational Change	.04	-.04	-.17**
<i>R</i> ²	.00	.02	.03

^an=1054; listwise deletion of missing data; original sample size equals 1348.

^bn=938; listwise deletion of missing data; original sample size equals 1169.

^cn=408; listwise deletion of missing data; original sample size equals 642.

*p<.05; **p<.005.

For the anxiety measure, logistic regression analyses were conducted for each of the survey waves. The same modelling strategy was undertaken for these three equations as for the previous multiple regression analyses. First, status discrepancy or change variables were entered along with gender. Second, the interaction term of gender by occupational discrepancy was entered.

Table 11d summarizes the results of the logistic regression analyses. None of the models proved to be significant predictors of anxiety at any of the three waves of data collection.

Table 11d: Logistic Regression of Anxiety on Gender and Occupational Change

Variable	Wave 1 ^a <i>B</i>	Wave 2 ^b <i>B</i>	Wave 3 ^c <i>B</i>
Gender	.24*	.36*	.48
Occupational Change	-.11	-.19	.14
Gender x Occupational Change	.04	.20	-.10
Constant	2.28*	2.72	3.54
Model X ² (-2 Log L.R.)	.07	.32	.46

^an=1043; listwise deletion of missing data; original sample size equals 1348.

^bn=938; listwise deletion of missing data; original sample size equals 1169.

^cn=; listwise deletion of missing data; original sample size equals 642.

*p<.05.

Summary of Hypothesis 10

Since men and women in the refugee cohort did not experience occupational decline from Vietnam to Wave 3 of the study, there is no evidence to bring to bear on Hypothesis 10. Nonetheless, the effect of occupational change on mental health was investigated for each of the three survey waves.

Occupational decline was not associated with higher levels of depression, anxiety, nor of somatization at any of the survey waves. Well-being at Wave 2 was predicted by a downward trend in occupational status. Given the number of analyses undertaken, this result may simply capitalize on chance. For Wave 3, an upward incline in occupational status was associated with positive feelings of well-being, particularly for men.

Discussion and Conclusions

Measurement Issues

The results of this study demonstrate that the scales used to assess mental health are reliable and valid for both Southeast Asian refugee women and Southeast Asian refugee men. The four mental health measures share highly similar psychometric properties. Reliability estimates were uniformly high, ranging from alpha coefficients for the Well-Being scale at .71 for men and .68 for women to coefficients of .92 for men and .91 for women on the Anxiety scale. The lower relative reliabilities observed for the Well-Being scale were probably due to the small number of items comprising this scale. Measurement theory suggests that reliability tends to increase as scale length increases.

Construct validity of the mental health scales analyzed separately for men and women revealed patterns consistent with earlier findings by Beiser and Fleming (1986). That is, principal components analyses on the entire set of questions, when conducted separately for male and female respondents' ratings, confirmed the existence of four underlying dimensions. These results suggest that the constitution of mental health in this refugee cohort was highly similar for men and women. Later evidence indicating gender differences in mental health therefore reflect quantitative variation in levels of psychological well-being and distress (or expressive style) rather than qualitative differences in the way mental health is experienced.

With longitudinal data collected over a ten year time span, it is not enough to demonstrate that the critical variables were accurately operationalized with the

]measures employed. It is also necessary to demonstrate that systematic biases in the results did not occur due to attrition over the course of study. From an initial cohort of 1348 participants at Wave 1, the number of participants dropped to 1169 at Wave 2, and to 641 participants in Wave 3. Attrition was due in part to many refugees being too busy to participate in the survey; others had moved residences so frequently that the research personnel were not able to find them to ask their participation for the later survey waves. The changes in participation presented potential threats to the external and internal validity of the study.

Evidence from this investigation suggests that the largest threat to external validity results from a high attrition rate at Wave 2 and Wave 3 of individuals who were single at Wave 1. More difficult to interpret are the observations concerning mental health. People who reported moderately higher depression and somatization at Wave 1 were more likely to attrite at Wave 2 and to participate at Wave 3. Examining patterns of mental health across time, participants who were consistently somatic at Wave 1 and Wave 2, as well as those who went from a healthy state at Wave 1 to a more somatic one at Wave 2, were more likely than others to participate in Wave 3. One further bias threatening external validity was evident: respondents moving from a relatively low sense of well-being at Wave 1 to a healthier state in Wave 2 were more likely to stay in the study at Wave 3.

Internal validity of the study was only marginally compromised by attrition. Respondents at Wave 1 who were unavailable for employment and those who reported no English language ability were less likely to participate in the study at Wave 3.

Overall, these threats to the validity of the study raise certain cautions that should be observed when examining the longitudinal results. In particular, individuals in the original cohort who were potentially more vulnerable to psychological distress, such as singles, those not available for employment, and those who spoke no English, were less likely to participate in the study 10 to 14 years after arriving in Canada. For this reason, estimates of mental distress for the refugee cohort based on the third wave of the survey are probably conservative.

Adaptation

Acquiring an ability to speak the host culture's language as well as securing employment are considered important elements of adaptation after refugees have resettled in a host country. These two factors, critical to the adaptation of refugees in Canada, were scrutinized in the present investigation.

Men in the present cohort reported significantly better English language ability than women when first surveyed in 1981. Using this point of time as a benchmark, women and men were found to improve their English language ability over time at the same rate. Earlier studies indicating that Southeast Asian women acquire English at a slower rate than men are potentially misleading. Although they have an initial advantage, refugee men do not appear to increase their English ability at a faster rate than refugee women.

What did appear to differentiate men from women was the effect of employment status on English language ability. When surveyed more than a decade after arriving in Canada (the third wave of data collection), employed men reported better English

language ability than unemployed men yet this was not true for women. Employed women reported the same English language ability as unemployed women. Furthermore, whereas unemployment had an adverse effect on men's language ability, not being available for employment more adversely affected women.

The results for men are consistent with what intuition would suggest: being employed outside the home increases exposure to the English language and facilitates learning. That the same effect does not occur for women is perplexing. However, given that women who are not available for employment have poorer language ability than men in the same situation suggests that other factors warrant further investigation. These results point towards the possibility of differing underlying motivations for working by men and women. If, as theory suggests, Southeast Asian refugee women work primarily out of economic necessity while men work as part of their prescribed sex role, then the acquisition of English language takes on different degrees of importance. Men may be more motivated than women to learn English in order to progress forward in their careers, thereby accounting for the observed differences in self-reported language ability reported in this study.

A caution to be observed with these results is that refugees who either spoke no English or were unemployed at Wave 1 had increased likelihood to attrite at Wave 3. Therefore, rates of unemployment may be conservative and levels of English language ability may be inflated.

Consistent with Tran's (1990) observations in the U.S. context, the present findings confirmed that Southeast Asian women use fewer strategies than men to learn

the English language. Despite the younger demographic composition of the present cohort and the broader range of Southeast Asian cultures represented than in Tran's study, the results were highly similar. Among five specific learning strategies, the largest gender discrepancy occurred in use of English as a Second Language (E.S.L.) classes. Men were more likely to attend than women, given their greater likelihood than women to choose to work outside the home. Men were also more likely than women to use the strategy of listening to the radio or watching television as a method of learning English. However, unlike E.S.L. classes, better educated individuals were less likely to use this strategy than poorly educated refugees.

These two particular strategies resulted in different outcomes in English language ability. Controlling for important demographic influences such as marital status, education, and age, attending E.S.L. classes was predictive of better English ability. Yet for refugees who listened to the radio or watched television to learn English, their ability was actually significantly lower than individuals who did not use this strategy. Hence, knowing that women use a fewer number of strategies to learn English does not tell a complete story. Simply increasing the variety of strategies employed will not necessarily improve English language ability.

Other interpretations of this data are possible. As English language ability is a self-reported measure, perceived ability may vary according to circumstance. For example, refugees who listened to the radio or watched television may have been more dissatisfied with their level of ability and therefore reported poorer skills. Perhaps watching English television raises the level of aspiration. The results may also simply

indicate that men are more likely than women to assert competence in this area, irrespective of objective differences in language ability.

A better method of understanding refugees' acquisition of language is to examine the relationship between each strategy used and the English language ability outcome. For participation in E.S.L. classes, levels of English ability were no different for men who attended classes versus men who did not. Differences did occur for women. Those who did not attend classes reported significantly lower English language ability, on average, than women who did attend. These results suggest that although men were more likely than women to attend E.S.L. classes, it is women who benefited more from participation than did men.

A similar pattern was evidenced for use of English language tutors. Although there were no gender differences in likelihood to use a private tutor to learn English, women appear to benefit more from this strategy than men. Little difference was apparent between men who used the strategy and men who did not. Furthermore, there was virtually no difference in English language ability between men and women who used a private tutor. However, women who did not use a tutor had significantly lower English language ability than men who did not use a tutor.

These results, which suggest that refugee women benefit more than refugee men from formal English language training, have implications for social policy. The Canadian government makes a determination of which refugees will be funded to attend E.S.L. classes primarily on newcomers' employment suitability. Because men are more frequently targeted to enter the workforce soon after arrival, they are more

likely to be given funding to attend. However, observations from this study indicated that Southeast Asian refugee women who resettled in and around Vancouver, B.C. benefited more than men from attending E.S.L. classes. Such a finding calls into question the current federal government policy of selecting primarily men to attend E.S.L. classes. Further research with other refugee and immigrant groups is necessary to determine if these findings are consistent across newcomer groups. If the findings are consistent across newcomer groups, then serious consideration of changes to E.S.L. funding policies should be considered.

Adaptation, Mental Health, and Gender

Given expectations of men entering the workforce soon after arrival in Canada and the greater necessity of acquiring English language skills as a result, it was predicted that, in the long term, men would be afforded a mental health advantage over women. This prediction was based on the notion that through the acquisition of adaptive skills in the host country, refugees are buffered from stressors that may compromise mental health. The results did not clearly bear this hypothesis out. After being in Canada for just over a decade, the emerging mental health profiles of refugee men and refugee women did involve notable differences. Nonetheless, the relationships among adaptation, mental health, and gender proved to be more complex than originally hypothesized.

Examining first the impact of English language ability on mental health, women who spoke little or no English after more than a decade in Canada were more likely to be anxious than men in the same situation. Indeed, none of the men who reported a

complete inability to speak the English language indicated anxious symptoms. However, among those speaking the language well, men were more likely to be anxious than women. Despite the finding that women who spoke no English were more anxious than men, they also reported, on average, higher levels of well-being than men. In terms of depression, differences observed between men and women were not related to their language abilities. English language deficiencies do not appear to jeopardize mental health. As Bradburn (1969) discovered, levels of negative affect are independent of positive feelings of well-being. In the present investigation, language ability was associated with a perceived positive sense of well-being.

This finding advances our theoretical understanding of the relationships among language, adaptation and mental health. Rather than poor English skills representing a threat to mental health, the present findings suggest that good English skills enhance newcomers' quality of life. A simple stress model of mental health would not adequately explain this finding. Personal resources such as an ability to speak the host language do not simply buffer against risk of mental disorder, as part of the acculturative process they add to refugees' sense of well-being in the new cultural environment.

Second, examining the impact of employment status on mental health at the third survey wave, women who were employed had higher levels of somatization than their male counterparts. The reverse was true for those not employed where men had higher levels than women. Although these slight differences were statistically significant, they were not substantively meaningful. Not being employed, however, was

unequivocally found to be associated with anxiety for both men and women.

Interpretation of these varied findings is difficult. It appears that language outcomes differentially affect refugee men's and women's mental health, in particular their feelings of anxiety. That men who were not able to speak English after more than ten years in Canada did not report feelings of anxiety was surprising. Perhaps they have compensated for these language shortcomings by finding employment where English language ability is not needed. Certainly among those not employed, anxiety was likely to occur for both men and women.

Although it was predicted that men would have better mental health than women in the long term, because of better English language skills and higher rates of employment, the short term prediction was that men would suffer poorer mental health than women. This outcome was expected, given the greater pressures placed on men than women to provide for their families immediately after arriving in Canada. Over time, women who avoided these initial strains were predicted to become more socially isolated than men, suffering poorer mental health as a result. Again, however, the results proved more complex than theorized. Over the three waves of study, men remained more likely to be anxious than women while women were consistently more likely to be somatic than men. The only tentative support for the theory in evidence were the *trends* in levels of depression, with men significantly more depressed at Wave 1, no differences occurring at Wave 2, and slightly higher levels of depression for women than men at Wave 3. Nonetheless, the Wave 3 differences observed were not statistically significant.

One possible explanation for this finding may be that sufficient time had not transpired since arrival for the effects on women to occur. Many of them had children, the presence of whom would prevent feelings of social isolation and marginalization. Nonetheless, once these children leave home, women without broader exposure may be at greater risk for mental disorder than men. Future research is warranted that continues to track the mental health status of this refugee group over subsequent years.

Although support for the proposed theory was lacking, the mental health differences found between men and women revealed a noteworthy difference. For men, adaptational strains appear to be related to anxiety, with feelings of unease, worry and fear. By contrast, in response to the strains of resettlement, women are more likely to express emotional strains through physical symptoms such as headaches and dizziness. Although the likelihood of these problems occurring decreases over time since resettlement, the gender differences remain consistent.

Following from the previous hypothesis, there were predicted to be mental health advantages for women working inside the home when first arriving in Canada. As they became more acculturated after being in Canada for several years, the mental health advantages of working outside the home evidenced for women in the majority culture were expected to occur for Southeast Asian refugee women. Results from this investigation did not support these predictions. Differences in mental health between women who work inside versus outside the home were not apparent when they first arrived in Canada nor when they were interviewed a decade later. Only at Wave 2 was

there a significant difference, with women who work inside the home slightly more likely to be anxious than women who work outside the home.

Lack of evidence for the mental health benefits of working outside the home may be the result of two factors. First, women from traditional cultures such as Southeast Asia who work outside the home may continue to bear primary responsibility for care of domestic duties. The mental health advantage of an additional role outside the home may be outweighed by the strains of carrying a disproportionate share of work in caring for home and children. Second, although employment outside the home may provide some independence and serve to increase feelings of self-efficacy, the menial nature of much of the work that Southeast Asian women were able to obtain limits its benefits.

Role restrictions placed on women in Vietnam and an emphasis placed on men as "providers" for their family were hypothesized to result in men experiencing greater occupational decline in Canada than women. The results did show a sizable gap in occupational status between men and women prior to migration. For the first two waves of study (that is, for the first one to five years after arrival in Canada) both men and women experienced similar rates of decline in their occupational status. By the third wave of data collection, after more than a decade in Canada, both men and women showed appreciable gains in occupational status. Indeed, levels of occupational prestige exceeded that reported for Vietnam.

The expected gender difference in occupational decline did not occur over the three waves of data collection, however, another important finding was apparent. Women substantially improved their socio-economic position in Canada, attaining

levels of occupational status comparable to that achieved by men. Further research is needed to understand how the achievement of greater employment equality by refugee women affects the wider role expectations that they assume. Are changes in refugee women's work roles met with similar changes in attitudes towards women working outside the home?

The effect of underemployment on mental health at Wave 3 of the study that was hypothesized was not apparent, given that refugees in the cohort had improved their occupational status from where they had been in Vietnam. For this reason, the impact of occupational change on mental health was investigated for each of the three survey waves. The results were consistent with earlier findings by Beiser and his colleagues (1993). For Southeast Asian refugees, underemployment was not related to emotional distress.

Several reasons may account for this finding. These particular refugees may emphasize the next generations' opportunities and advancements rather than their own, similar to other refugee and immigrant groups who have resettled in Canada. They may also experience feelings of relative security and stability, despite being underemployed, as life in Canada offers a strong contrast to the turmoils associated with exodus from their homelands. Finally, status is conferred not only by one's objective occupational position in society but also by the relative position of one's peers as a central referent. Given that the refugees resettled as a group, most of whom experienced occupational decline, the experience of decline in occupational prestige during the first two waves of data collection may be attenuated by the maintenance of

social position and prestige within the like-ethnic group.

Findings concerning the relationship between well-being and status discrepancy are more difficult to interpret. That the latter was associated with increased well-being at Wave 2 is not consistent with intuition. Two caveats should be kept in mind. First, given the large number of analyses performed, this result may simply reflect a capitalization on chance. Second, the results for this regression model, as with the others in the set of analyses for this hypothesis, accounted for only a trivial amount of variance in the dependent variable. Easier to interpret are the findings at Wave 3: increases in occupational prestige were associated with positive feelings of well-being, particularly among males. Given the contradictory Wave 2 result, and the small percent of variance accounted for, further investigation of this finding with other refugee cohorts is warranted.

One important lesson can be drawn from this finding, however. Well-being is not simply the absence of emotional distress (as Bradburn, 1969, clearly demonstrated). It is, instead, an expression of the quality of an individuals' life, which in the present case appears to be positively influenced by the acquisition of suitable occupational position. After ten or more years in Canada, Southeast Asians may not experience distress when unable to attain suitable occupational positions yet when such positions are achieved or exceeded, quality of life is enhanced. This may be particularly true for male refugees, for whom socialization has emphasized the critical roles of economic provider.

The results of this study demonstrate clear similarities between men and women

in their experience of mental health and mental distress. Yet symptoms of distress arose often in different circumstances for refugee men and refugee women, with the relationships among gender, adaptation, and mental health proving to be more complex than originally hypothesized. The appreciable gains made by refugee women in this cohort in terms of language ability and occupational status demonstrate that Canada does afford refugee women opportunities for betterment. Furthermore, the expected decline in mental health among refugee women, particularly those who stayed at home, was not realized. To the extent that social policies can help to remove the impediments to adaptation which continue to exist, such as restrictions from formal English language training, refugee women as well as refugee men can realize their full potential in Canada.

Limitations of the Findings

There are limitations to the evidence found in this study. The results can be statistically generalized only to the Southeast Asian refugee group who resettled in and around Vancouver, B.C. between 1979 and 1981. Nonetheless, at a broader conceptual level, the findings do represent issues not confined simply to this particular refugee group. Other refugees who escaped their homelands and resettled across Canada encountered similar hardships and challenges to those of the cohort investigated. Findings from this study illuminate resources refugees bring to bear in overcoming these hardships and challenges.

A second limitation is imposed by the low percentages of variance accounted for in the statistical modelling of mental health outcomes. Specifically, it was found that

only up to twelve percent of the variance was accounted for in the models predicting mental health at Wave 3 based on language and employment status (Hypothesis 6); only up to two percent was accounted for in the model predicting Wave 3 mental health based on status discrepancy (Hypothesis 10). In both these instances, a variety of other factors were obviously affecting mental health other than the ones tested. One obvious source of influence is pre-migratory trauma. Many refugees lost loved ones, experienced persecution, and suffered material hardship, of which the effect on mental health may be long-lasting.

There are many possible post-migratory factors that would influence mental health which were beyond the scope of this thesis and which would account for the "missing" variance. Examples include religious congruity between the refugees and their hosts, availability of like-ethnic social supports, physical health status, family composition, continued physical separation from significant others (i.e., other loved ones or family members still in Vietnam), and subjection to racism.

Implications for Theory

Evidence indicating that men and women Southeast Asian refugees experience psychological well-being and distress in a qualitatively similar manner relates importantly to theory. It is not the case that there is something innately different about the composition of men's and women's mental health. From a common ground of experience and expression of mental health, differences can be meaningfully assessed in the circumstances which give rise to distress and well-being. That men and women's mental health status often differs, as found throughout this study (for example, men

were consistently more likely to be anxious, women to be somatic), points to different patterns of adaptation and mental health between men and women refugees.

There is a tendency for theory to focus on pathology among newcomers, rather than on the resilience that many refugees and immigrants demonstrate in the face of hardship and change. Results from this investigation suggest that such an approach is lacking in that it fails to adequately explain a fuller and richer range of emotional responses to the adaptation process. For refugee women in particular, resettlement brings opportunity as well as risk, with strictly prescribed gender roles loosened both out of economic necessity as well as because of the more egalitarian attitudes of the host society.

The theoretical model presented in the introduction to this thesis demonstrated the importance of personal and social resources that act as a buffer against the strains of resettlement. Yet findings from this study suggest that this model accounts for more than simply the buffers against stress; it also clearly illustrates the importance of personal resources such as good English skills that can enhance newcomers' quality of life.

Implications for Policy

Although this investigation was not focused on policy issues nor designed to address the many and important government policies that do affect refugees, there are two implications that should be noted. In particular, to the extent that the findings of this research project have relevance to other refugee groups, the section on language skills acquisition has an obvious policy consideration. That women were found to

benefit from formal language training, while men apparently did not, suggests that government review the mandate of E.S.L. training. Currently it is directed at newcomer individuals entering the workforce, the majority of which are men. A stronger effort to bring women this same degree of language training would increase the degree of opportunity for refugee women. The results also indicate that it would likely have a positive benefit on women's and men's quality of life, aside from enhancing refugees' employability.

A second policy consideration following from the first is more general and relates to the value position of the host society. While immigration policy reflects primarily national demands and needs (such as a growing work force), refugee policy is designed to operate principally on humanitarian grounds. It reflects Canada's commitment and obligation to others in the world who are less fortunate. As such, it is important that this humanitarian obligation not abruptly end once a newcomer has arrived. The host society has a critical role to play in shaping the environment that surrounds newcomers as they forge a new life. Ensuring that reasonable opportunities for employment exist and that language skill training is available for all newcomers, regardless of their expected social position, would be a logical and humane extension of the principals that bring refugee newcomers to Canada.

Future Research Directions

The findings of this research study point to several future research directions. First, evidence that Southeast Asian refugee women benefit more from E.S.L. training than do men should be evaluated with other refugee and immigrant groups.

Furthermore, future efforts should be directed at evaluating innovative programs that provide formal language training in non-traditional settings outside the classroom, directed at facilitating the participation of women.

Second, future research should focus more clearly and consistently on what makes for successful mental health and adaptation among refugee groups. Too often the focus has been on factors that contribute to psychopathology rather than on the personal and social resources of refugees that buffer against stress. Further to this point, there is a paucity of research on what makes for improved quality of life among resettled refugee groups.

Although two critical adaptation factors have been identified (i.e., English ability and employment status) as important to the mental health of Southeast Asian refugees, there are a number of other issues that require attention and investigation. These include the impact of factors such as refugees' religious background (and its congruity with the host culture). As well, future research should be directed at better understanding the role of individual personality factors that may affect adaptation, such as achievement motivation and ego-drive.

Summary of Conclusions

Several key issues concerning gender differences in adaptation and mental health among Southeast Asian refugees in Canada were shed light on through this investigation. Summarized in the pages that follow are the highlights of this study.

- ❑ The scales developed by Beiser and his colleagues to assess mental health among Southeast Asians proved to be reliable and valid instruments for both refugee men and refugee women. Gender differences in patterns of mental health evident in the study therefore reflect quantitative variation in mental health symptomatology rather than qualitative variation in mental health typology.
- ❑ Although men had an initial advantage over women in their ability to speak the English language and maintained that advantage over time, both progressed at the same rate of improvement over the ten years of study.
- ❑ Previous findings that women use fewer strategies to learn English than men were confirmed but failed to tell the complete story: some strategies do not work. Simply increasing the number of strategies is not, in itself, a good strategy to use for learning English. Two methods that did work were private tutors and attending English as a Second Language classes. These were particularly beneficial for women but less so for men. This finding calls into question the bias of more men than women being enrolled in language classes, a defacto result of the government employability criterion for language training entry.

- ❑ The theory that men encounter more stress which translates into mental distress early after arrival while women simply postpone this difficulty and encounter more mental difficulties later on was refuted. Both men and women show some decline in mental health difficulties over time, as the strain of resettlement diminishes and acculturation to the host country progresses. However, when negative mental health difficulties do arise, men are more likely to report anxiety while women are more likely to express somatic problems.
- ❑ Unlike patterns in the host population which show mental health advantages for women working outside the home, no meaningful differences were found among this refugee cohort. This finding may be a result of menial jobs being held and the burden of women who work carrying a disproportionate share of domestic duties.
- ❑ Being unemployed resulted in depression and anxiety for both men and women. After ten years in Canada, not speaking English was only associated with anxiety for women, not men. However, among those speaking English well, men were more likely to be anxious than women.
- ❑ Occupational decline from levels of employment held in Vietnam was evident for the first five years in Canada. This decline was not associated with increased depression and somatization, nor with greater likelihood of anxiety. By ten years, both men and women were doing better than when they had left their homeland. This appeared to enhance their quality of life, particularly for men.

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Appendix A. Mental Health Scales

Depression Scale Items

<u>Item</u>	<u>Item Source</u>
<i>During the past few weeks...</i>	
Have you been nervous tense or worried?	Senegal, SRQ
Have you been feeling unhappy?	Senegal, DIS, VDS, SRQ
Have you been feeling sad?	VDS
Have you been feeling in inner turmoil?	Original item
Have you been feeling discouraged?	VDS
Have you been feeling low and hopeless?	VDS
Have you been feeling bored?	VDS
Have you lost interest and pleasure in things which you usually care about and enjoy?	DIS
Have you been having trouble making up your mind even about little things?	VDS, SRQ
Have you been feeling you are a worthless person?	VDS, SRQ
Have you been feeling lonely even when you are with other people?	
Do you feel remorseful?	VDS
Have you been worrying about what people say about you?	Original item
Have you been feeling upset because someone criticized you?	Senegal, Bradburn
Have you felt so restless that you couldn't sit long in a chair?	DIS, Bradburn
Have you had more trouble concentrating than is normal for you?	DIS
Have your thoughts seemed mixed up?	
	DIS
	DIS

Respondents answer either "Never", "Sometimes", or "Often"

Senegal = Senegal Topical Depression Scale (Beiser et al., 1976).
DIS = Diagnostic Interview Schedule (Robins et al., 1981, 1985).
VDS = Vietnamese Depression Scale (Kinzie & Manson, 1983).
SRQ = Self Report Questionnaire (Harding et al., 1980).
Bradburn = Bradburn Affect Balance Scale (Bradburn, 1969).

Anxiety Scale Items

Item

During the past few weeks have you had a spell or attack when all of a sudden you felt frightened, anxious or very uneasy for no apparent reason?

[If respondents answer "yes", the following questions are asked:]

Were you short of breath - having trouble catching your breath?

Did your heart pound?

Were you dizzy or light-headed?

Did your fingers or face tingle?

Did you have tightness or pain in your chest?

Did you feel like you were choking or smothering?

Did you feel weak?

Did you sweat?

Did you tremble or shake?

Did you feel hot and cold flashes?

Did your vision blur?

While this was going on, were you afraid either that you might die or that you might act in a crazy way?

Respondents answer either "yes" or "no".

All items in this scale were derived from the DSM-III criteria for 'panic disorder'.

Somatization Scale Items

<u>Item</u>	<u>Item Source</u>
<i>During the past few weeks...</i>	
Have you had a loss of appetite?	Senegal
Has your food seemed tasteless and hard to swallow?	Senegal
Have you been bothered by nausea - feeling sick to the stomach but not actually vomiting?	DSM-III
Have you suffered poor digestion?	DSM III, SRQ
Have you had spells of dizziness?	Senegal
Have you been bothered by palpitations, that is, your heart beating so hard that you could feel it pounding in your chest?	Senegal
Have you got short of breath even when not exerting yourself?	DSM III
Have you been having back trouble?	DSM III
Have you been feeling you were sickly?	Senegal
Have you been having trouble falling asleep?	DSM III
Have you been having waking up easily at night?	DSM III
Have you been waking up several hours earlier than usual and not being able to go back to sleep?	DSM III
Have you been feeling tired all the time?	Senegal, SRQ
Do you feel weak all over?	Senegal
Does your head feel heavy?	Senegal
Do you have a sense of pressure in your head? (like a balloon blown over)	DSM III

Respondents answer either "Never", "Sometimes", or "Often"

DSM III = Diagnostic and Statistical Manual of Psychiatric Disorders derived items.
 SRQ = Self Report Questionnaire (Harding et al., 1980).

Well-Being Scale Items

Item

During the past few weeks have you ...

Felt pleased about having accomplished something?

Felt particularly excited about or interested in something?

Felt that things were going in the way that you wanted them to go?

Felt proud someone complimented you for something you had done?

Respondents answer either "Never", "Sometimes" or "Often".

All items on this scale derive from the Affect Balance Scale (Bradburn, 1969).