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PARENTAL INFLUENCE ON ETHNIC LANGUAGE RETENTION
BY CHILDREN

PARENTAL INFLUENCE ON ETHNIC LANGUAGE
RETENTION BY CHILDREN: THE CASE OF CHINESE
IN URBAN CANADA

by

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A Thesis

Submitted to the School of Graduate Studies

in Partial Fulfilment of the Requirements

for the Degree

Master of Arts

McMaster University

June 1978

MASTER OF ARTS (1978)
(Sociology)

MCMASTER UNIVERSITY
Hamilton, Ontario

TITLE: Parental Influence on Ethnic Language
Retention by Children: The Case of
Chinese in Urban Canada

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NUMBER OF PAGES: x, 131

ABSTRACT

This thesis examines the effects of parental influence on ethnic language retention by children in five Chinese communities in urban Canada. Related literature suggests that ethnic language is vital to the survival and continuity of the ethnic community because it not only provides an efficient means of communication among people in the same ethnic group but also preserves the ethnic culture and fosters ethnic identity and solidarity. Ethnic language loss is likely to be accompanied by weakening of ethnic identity and enfeebling of ethnic integration, and hence is a threat to the vitality of ethnic community.

Ethnic language loss in the second and third generations is a wide-spread phenomenon in North American societies. This thesis, however, focuses on one of the forces that could contribute to counteract or slow down the tempo of language loss. Attention is paid to the family as an ethnic language retaining agent. The most notable contribution made by this thesis lies in its empirical assessment of parental influence on ethnic language retention by children. It was found that parents' direct promotion explained 44 per cent of the total variance of ethnic language retention by children among Chinese in urban Canada. This indicates that the family is a very important ethnic language retaining agent.

Four other parental variables were examined for the detection of their effects on parents' direct promotion of ethnic language. They were: parents' ethnic identification, parents' ethnic community involvement, parents' knowledge of English/French, and parents' length of time in Canada. Parents' ethnic community involvement was found to have positive effect on their direct promotion of ethnic language, whereas parents' knowledge of English/French exerted negative impact on their direct promotion. Both parents' ethnic identification and length of time in Canada were not significantly related to other variables, implying that, among Chinese in urban Canada, ethnic identification is not a determinant of ethnic life, and their extent of assimilation to the Canadian society remains rather stable over time.

Data were extracted from the 1973 Non-Official Language Survey which studied ethnic language retention and related issues among ten ethnic groups selected from five metropolitan cities in Canada. The Chinese were one of the ten ethnic groups and this group was chosen for the present analysis. Path analysis was employed to assess the direct and indirect effects among the variables. Assumptions of path analysis were tested to determine the extent to which they were met. In particular, Goodman's log-linear system was used to test the assumption of absence of interaction effects among the variables of the model.

ACKNOWLEDGEMENTS

It is a great pleasure for me to express my gratitude to Dr. Charles L. Jones, my thesis supervisor, for his precious guidance and patience with me throughout the course of this thesis. I would also like to thank the other two members of my thesis committee, Professor Peter C. Pineo and Dr. Ellan O. Derow, for their comments.

Thanks should also be extended to Dr. Jeffrey G. Reitz of the University of Toronto for permitting me to use the Chinese subsample of the Non-Official Languages Survey data, and to the Department of Political Science at McMaster University for purchasing and lending me the data. In addition, thanks are due to Mr. Clement Chan who tirelessly provided me with computer assistance.

The Non-Official Languages Survey data were made available in part by the Institute for Behavioral Research, York University. The data were originally collected by K. G. O'Bryan, J. G. Reitz and O. M. Kuplowska. Neither the original source of data nor the Institute bear any responsibility for the analysis or interpretations presented in this thesis.

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CHAPTER ONE:

THE RESEARCH PROBLEM AND RELATED LITERATURE

INTRODUCTION

The earliest existence of Chinese communities in Canada dates back to the 1880's when the Chinese formed their own communities for mutual aid and retention of their way of living as a reaction to racial hostility expressed by Canadians. The characteristics and development of Chinese communities in Canada have been receiving more and more attention from social scientists. Indeed, Chinese communities have become one of the foci in Canadian ethnic studies. Many researchers have studied the history of Chinese immigration and the development of Chinese communities in Canada (e.g. Andracki, 1958; Baureiss, 1971; Chen, 1926; Kung, 1962; Lai, 1972, 1973, 1975; Mortin, 1974; Munro, 1971; Palmer, 1970; Paupst, 1977; Roy, 1976; Sampat-Mehta, 1973: 23-123; Sedgwick and Willmott, 1974; Voisey, 1970; Willmott, 1968, 1970). Some have examined the pattern of assimilation of Chinese immigrants in the Canadian society (e.g. Lai, 1971; Luk, 1971). Others have paid attention to Chinese immigrant families (e.g. Bronsdon, 1966; Davison, 1952; Fu, 1967). Some have concerned themselves with other aspects of Canadian Chinese such as Chinese schools (e.g. Taylor, 1933), youths (e.g. Yiu, 1968), leisure-time activities (e.g. Ko, 1964), mental health (e.g. Lee, 1961), and

ethnic heterogeneity among Chinese students (e.g. Yao, 1975). While this pool of literature provides a rich documentation of the Chinese in Canada, no study has specifically dealt with the issue of ethnic language retention in Chinese communities.¹ For reasons that will be discussed later, ethnic language retention has important bearings on the maintenance and vitality of the ethnic community. The task of this thesis is to throw light on this neglected aspect of Chinese communities in Canada.

The scant attention paid to ethnic language retention is not unique to the study of Chinese communities in Canada. Ethnic language retention of other Canadian ethnic groups has also been a rare research focus. This may largely be due to the fact that discussions on the "language problems" in Canada have always centred around the two official languages - English and French,² hence reducing the vehemence of the discussions on unofficial languages. Indeed, it was not until the appearance of the "Book IV: The Cultural Contribution of Other Ethnic Groups" of the Report of the Royal Commission on Bilingualism and Biculturalism in 1970 that interest in examining the relation of languages of other ethnic groups to the Canadian mosaic was kindled. The most notable effort in this regard was the undertaking of the Non-Official Languages Survey in 1973, which focused on ethnic language retention and related issues such as ethnic identity. Currently, a flurry of papers discussing the issue of ethnic language maintenance and multilingualism appeared in the book

Sounds Canadian edited by Migus (1975).

LANGUAGE AND SOCIAL GROUP

Why is it important to study ethnic language retention? What bearing does language have on the maintenance and vitality of the group of people speaking it? At this juncture, it is necessary to examine the relation between language and social group. Previous studies in this field have suggested at least two significant and interrelated characteristics of language.³ Firstly, language is viewed as both a part and a symbol of culture; secondly, language carries the function of a "social unifier".

Language as Both Part and Symbol of Culture

In the first place, language serves as a means of communication among people speaking it. Sapir (1933: 155), for example, stated that "language is primarily a system of phonetic symbols for the expression of communicable thought and feeling." Carrol (1964: 4) also pointed out that the two major functions of language are (i) as a system of responses by which individuals communicate with each other (inter-individual communication), and (ii) as a system of responses that facilitates thinking and action for the individual (intra-individual communication). As people in different cultures use different languages for communication,

a language can be taken as "a part of the cultural achievement of a people, comparable to its family system, its economic life, or its religious life." (Bossard, 1945: 700)

Language, however, is not just a way of communicating messages, or merely one part of culture. "It is, at the very least, prima inter pares, in that it makes possible the development, the elaboration, the transmission, and (particularly in its written form) the accumulation of culture as a whole." (Bright, 1968: 20) Language is a collection of symbols embedded in which are the details and spirit of a culture. In this sense, language is also symbol of a culture, and it cannot be substituted by another one if the spirit and vitality of the culture are to remain. Some scholars label language as a "vehicle of culture" which enables people to come to their perception of the "real world". On this, Sapir (1968: 162) has made the following famous statement:

Language is a guide to "social reality"... it powerfully conditions all our thinking about social problems and processes. Human beings...are very much at the mercy of the particular language which has become the medium of expression for their society. No two languages are ever sufficiently similar to be considered as representing the same reality.

Language as a "Social Unifier"⁴

Besides being a system of communication which is both part and symbol of a culture, language also entails significant consequences for members in the same "speech

community".⁵ It is an agent that welds people together and helps maintain group consciousness, identity, solidarity, and integration. To cite Sapir (1933: 160, 161) again:

Language is a great force of socialization, ...a common speech serves as a peculiarly potent symbol of the social solidarity of those who speak the language... (and) in the establishment of rapport between the members of a physical group....

Hertzler (1965: 227-231) distinguished four social unifying effects of language. Firstly, language enables members of the group to share elements of the same culture and hence facilitates the convenience of living together. Secondly, language is one of the major welding agents of human group because through it all group institutions and activities become effective. Thirdly, language creates a "speech fellowship", or a "collective consciousness", which produces a "consciousness of unity" among group members. Lastly, Hertzler went so far as to assert that language serves as an effective means of identifying, classifying, or defining the ethnic boundary of a people or a society. Speaking in a similar tone, Leach (1965) pointed out that those who share an identity of linguistic code are able to share the feeling of "we group" not felt by outsiders. Pieris (1951: 499) also noted that being an important symbol of social solidarity is an outstanding social effect of language.

Social psychologists have elaborated on the process through which the individual develops attitudes in harmony with those held by other people in the community. Mead, when

discussing the formation of the individual's self, wrote:

Through the use of language, through the use of the significant symbol, then, the individual does take the attitude of others, especially these common attitudes, so that he finds himself taking the same attitude toward himself that the community takes. (Mead, 1964: 35)

And, he continued,

The individual possesses a self only in relation to the selves of the other members of his social group; and the structure of his self expresses or reflects the general behavior pattern of this social group to which he belongs, just as does the structure of the self of every other individual belonging to this social group. (Mead, 1964: 227-8)

The above illustrations point to the importance of language as an agent that unifies people together, maintains social solidarity, and enables them to share similar social experience.

ETHNIC LANGUAGE AND THE ETHNIC COMMUNITY

The two major characteristics and importance of language discussed above can be applied to ethnic language in general. Ethnic language designates the language spoken by an ethnic group. A logical derivation of the above discussions on the characteristics of language would suggest that the retention of ethnic language can provide efficient communication among people in the ethnic group, preserve the ethnic culture, and maintain collective ethnic identity and solidarity. It has been observed that ethnic language retention has served as important building blocks for minority

ethnic groups to maintain and develop their particular cultural heritages (see, for example, Arsenian, 1945; Bossard, 1945; Gonzalez, 1967). It has also been recognized that ethnic language retention is necessary for self-preservation and self-fulfilment of the ethnic group (see, for example, Handlin, 1961). Isajiw (1975: 135) added that ethnic language is one type of ethnic symbol necessary to maintain ethnic identity.

Since ethnic language has important bearings on the ethnic culture and social cohesion of the ethnic group, it goes without saying that the extent of ethnic language retention entails significant consequences for ethnic community structure. Lieberson (1970: 245-250), for example, discovered that after controlling for religion, mother-tongue retention significantly accounts for residential segregation. After an analysis of some data from the 1973 Non-official Languages Survey, Reitz (1974) concluded that ethnic language retention is necessary for ethnic community participation and hence is vital to ethnic community survival.

Although ethnic language retention is conducive to the maintenance of ethnic community, it would be a mistake, however, to treat it as the only prerequisite. Skin colour, oppression from other cultural groups, life style, value orientation, and so on, may also contribute to ethnic community maintenance (Reitz, 1974: 106). There are indications in Fishman et al (1966) that cultural traits and identity continue to exist despite the disappearance of the

ethnic language. Sapir (1933: 165) has also warned that there is not a simple correspondence between the form of a language and the form of the culture of those who speak it. While it must therefore be made clear that a certain degree of maintenance of ethnic culture is possible without ethnic language retention, there is, however, no inconsistency inherent in the assertion that ethnic language retention wields crucial contribution to the maintenance of the ethnic community. As bluntly put by Lieberman (1970: 240):

Ethnic groups may be maintained without a unique mother tongue. There are many other forms of delineation ranging from physical features to religion, yet it is readily apparent that a distinctive language is one of the most common ethnic markers.

ETHNIC LANGUAGE LOSS AND THE QUEST FOR ETHNIC LANGUAGE RETENTION

Since ethnic language helps preserve the ethnic culture, strengthens ethnic group identity and cohesion, and contributes to the maintenance of the ethnic community, ethnic language loss would likely entail fading of the ethnic culture, enfeebling of ethnic group identity and cohesion, and weakening of the vitality of the ethnic community. Reitz (1974) has clearly demonstrated that ethnic language retention is in itself an important prerequisite to ethnic community participation, and failure to learn the ethnic language accounted for reduced ethnic community participation

in the second and third generations.

It is a common phenomenon in North American societies that ethnic language loss shows marked rapidity in the second and third generations. In Canada, rapid ethnic language loss in the second and third generations is evident in the data of the Non-Official Languages Survey (O'Bryan, Reitz and Kuplowska, 1976: 46-52; Reitz, 1974: 112-113). This "disappearance phenomenon"⁶ is not difficult to understand. As explained by Nahirny and Fishman (1965), immigrants, or the "first generation", were able to achieve a large extent of linguistic and cultural retention because for them, "the 'old ways' survived as realities, since they continued to link them meaningfully to the ancestral past as well as to the community for their immigrant contemporaries." (pp. 316-317) The sons, however, were unable to maintain such ethnic continuity. For them, their fathers' ethnic past "stood (at best) for ideals to be appreciated and cherished" and "ceased being a complete pattern of daily life." (p. 317) Experiencing a sense of marginality and inferiority in the wider society, many of them despised their ethnic heritage and attempted to loosen the ties that bound them to the ethnic community. When it came to the grandsons, they neither rejected nor vehemently embraced their ethnic past. For them, ethnicity became something to know about and to appreciate. However, "such knowledge and appreciation is usually kept within reasonable bounds and need have little or no relevance to daily life." (p. 323) In effect, cultural

and mother-tongue transmission to sons and grandsons is very limited.

Hansen (1952) expressed a somewhat different viewpoint concerning the maintenance of ethnicity in the third generation. He maintained that instead of drawing farther and farther away from their ancestral heritage, the grandsons found it possible to become interested in their ethnic heritage precisely because they have been left untouched by it. "... what the son wishes to forget the grandson wishes to remember." (p. 495) He designated this as "the principle of third-generation interest". Hansen's argument was criticized by Nahirny and Fishman (1965), who pointed out that the grandsons' identification with ethnicity may be different from that of the fathers and sons not only in degree but also in nature. Moreover, even though grandsons may take an interest in rediscovering their ancestral past, they do not necessarily have to assign too much importance to learning the ethnic language.

Amidst the rapid and wide-spread phenomenon of ethnic language loss, what have been the efforts made by ethnic groups to promote ethnic language retention? Fishman (1966a: 21) remarked that "Although American core society has usually been ignorant of the efforts of ethnic minorities to maintain themselves in the midst, such efforts have always been underway...Language maintenance, prompted by one or another variety of language loyalty, has frequently been a component - and,

at times, a catalyst - in these efforts." Focusing on these language maintenance efforts, Fishman and his associates produced a rich documentation of such efforts in their large volume, Language Loyalty in the United States (1966).

Very little scientific research on ethnic language retention has been done in Canada (Kelly, 1975: 23). Therefore, it is difficult to make any accurate assessment of ethnic language retention efforts here. Soon after the appearance of the report on "The Cultural Contribution of the Other Ethnic Groups" by the Royal Commission on Bilingualism and Biculturalism in 1970, a multicultural policy to encourage ethnic groups to maintain and develop their cultural elements was announced by the federal government in 1971. With the implementation of such a policy,⁷ the quest for ethnic language retention has emerged with a somewhat official flavour. In the Report, it was stated that "culture and the language that serves as its vehicle cannot be dissociated", and "The presence in Canada of many people whose language and culture are distinctive by reason of their birth or ancestry represents an inestimable enrichment that Canadians cannot afford to lose." (pp. 13-14) At the end of the Report, a list of recommendations for the promotion of ethnic language retention through schools and mass media were proposed (pp. 228-230).

Concomitant with the expanding quest for ethnic language retention and the support from government, there arises the need for social scientific research to investigate

the factors that are conducive to ethnic language retention and to evaluate their relative effectiveness so that efficacious ways to promote ethnic language retention could be determined.

Practical concerns aside, it is of great sociological significance to examine the forces which, in the midst of rapid ethnic language loss, counteract the erosion of ethnic language by the dominant culture. The stronger these counteracting forces, the smaller of course will be the tempo of ethnic language loss. Indeed, a fuller understanding of the phenomenon of ethnic language loss will not be yielded unless the characteristics and magnitudes of the forces operating to contribute to language retention are studied.

THE FAMILY AS AN ETHNIC LANGUAGE RETAINING AGENT

Researchers on ethnic language retention efforts have indicated a host of factors conducive to ethnic language retention. Kloss (1966: 206-9), for example, identified six factors favourable to language retention in the United States. They are: (i) religio-societal insulation, (ii) time of immigration, (iii) existence of language islands, (iv) affiliation with denominations fostering parochial schools, (v) pre-immigration experience with language maintenance efforts, and (vi) former use of the ethnic language as the only official language during pre-Anglo-American period. Glazer (1966) placed emphasis on four factors which include

time of immigration, spatial pattern of resettlement, social structure of the immigrant group (and in particular the role of professional intellectual, and middle-class elements within it), religion, and degree of ideological mobilization in the group.⁸ Skrabanek (1970), in his study of language retention among Mexican-Americans, concluded that high degree of homogeneity in socio-economic status, a steady influx of immigrants from Mexico, the freedom of movement between Mexico and the Southwestern section of the United States, different value orientations of Mexican-Americans and the dominant culture, Mexican-American spatial isolation, and the Mexican-American system of La Raza⁹ are factors that have played a major role in Spanish language retention by Mexican-Americans.

In the Canadian context, factors influencing ethnic language retention were demonstrated in three studies, two of which concerned French-Canadian communities. Lieberman (1970) indicated that the residential patterns of bilingual population, along with population composition, and "communication advantage"¹⁰ within the French ethnic group are factors influencing French mother-tongue retention among the children of bilingual parents. The study of Vallee and Shulman (1969) suggested that variations in ethnic community structure in regard to residential segregation and organizational strength of the ethnic community lead to differing degrees of French retention. Another analysis of the 1973 Non-Official Languages Survey data by Reitz (forthcoming) showed that in twenty-five urban immigrant communities in

English-speaking Canada, the most cohesive immigrant communities have the highest rates of ethnic language retention by children.

While the above and other studies have elicited various factors pertaining to language retention, there have been little research that specifically outline the bearings the family has on ethnic language retention by children.¹¹ The family, it should be noted, is only one of the ethnic language retaining agents. It is convenient to conceive various "domains" in which children can learn and use the ethnic language. Fishman (1964: 37) described that Schmidt-Rohr has differentiated nine domains of language, namely, the family, the playground and the street, the school, the church, literature, the press, the military, the courts, and the government bureaucracy. Kelly (1975: 24) also noted that work by Gumperz and Cooper on ethnic communities in the United States has isolated a certain number of domains of language use which include home, neighbourhood, church, work, school. O'Bryan, Reitz and Kuplowska (1976: 61) divided contexts of language use into "social interaction" which includes use in communicating with family members, close friends, clergy, grocer, doctor, and classmates/co-workers; "reading ethnic press"; and "listening to ethnic radios and watching ethnic televisions". Different domains of language use provide different opportunities for children to learn and use the ethnic language, and hence produce different effects on language

retention by children. While it is undoubtedly worthwhile to examine the effect of each domain on language retention by children, this thesis, however, will limit itself to the domain of the family, because despite its centrality in discussions on ethnic language issues, its effect on language retention has never been empirically assessed. Furthermore, emphasis will be placed upon the effect of parental influence in particular. Therefore, the central question in this thesis is: What is the effect of parents' influence on the ethnic language retention by children among Chinese in Canada?

THE PARENTAL VARIABLES

Several parental variables are brought into analysis. The one whose direct effect on language retention by children will be examined is parents' direct promotion of ethnic language. Four other parental variables are introduced to see if they have direct and indirect effects on parents' direct promotion, and if they have indirect effects on language retention by children. The four variables are: parents' ethnic identification, their ethnic community involvement, their knowledge of English/French, and their length of time in Canada.

Parents' Direct Promotion of Ethnic Language

Parents' influence on children's language retention

may be expressed in various ways. For example, they may speak to their children in the ethnic language. More active still, they may demand their children reply in the ethnic language. They may also try to teach their children the language, or expose them to ethnic mass media (such as ethnic press, radio, television). Of course, a common practice is to send their children to ethnic schools. Parents may also bring their children with them to ethnic community activities. These various methods can be categorized as "direct" and "indirect" promotion. By direct promotion is meant parents' efforts in transmitting the ethnic language themselves. This could take the form of, say, speaking in the ethnic language to their children, insisting on a reply in the ethnic language from children, teaching their children the ethnic language, and so on. Effects due to direct promotion are direct effects. On the other hand, indirect promotion refers to parents' efforts in bringing their children to other domains of ethnic language learning such as ethnic schools, ethnic mass media, the ethnic community, and so on. Such promotion efforts are indirect, as effects come from other domains rather than from the parents themselves. In this thesis, attention will be paid to the direct promotion efforts made by parents. Thus, the questions posed in this thesis become: Does parents' direct promotion of the ethnic language have a significant effect on ethnic language retention by children among Chinese in Canada? If it does, what is the magnitude of the effect?

From the above research focus immediately flows another point that deserves scrutiny. Clearly enough, the activeness of parents' direct promotion of the ethnic language to children would depend on many factors. Hence, it is worthwhile to examine further the factors that may affect parents' activeness in direct promotion. As this thesis concentrates on influence from parents, only parental factors will be brought into analysis. Four parental variables are introduced, namely, parents' ethnic identification, ethnic community involvement, knowledge of English/French, and length of time in Canada. How are these four parental variables correlated with parents' direct promotion of ethnic language? Also, how are these variables correlated among themselves?

Parents' Ethnic Identification

Ethnic identification may simply refer to a person's use of racial, national or religious terms to identify himself, and thereby to relate himself to others (Glaser, 1958: 31). Thus, a Chinese in Canada may define himself as a "Canadian-Chinese" or "Chinese-Canadian". He may also regard himself simply as a "Canadian" or a "Chinese". The intensity of ethnic identification varies among these labels, with "Chinese" representing the strongest extreme and "Canadian" the other extreme. Labels like "Canadian-Chinese", "Chinese-Canadian", or "Canadian with Chinese origin" lie somewhere between the two extremes of the ethnic identification continuum.

Ethnic identification, however, is something more

than a label by which a person defines himself. In most cases, it necessarily entails the commitment and sharing of common ethnic values, behavioural patterns or symbols different from those of the larger society. In fact, it appears safe to treat ethnic identification as a reflection of the ethnic person's cultural assimilation to the larger society. Cultural assimilation (or behavioural assimilation), refers to the absorption of the cultural behaviour patterns of the host society (Gordon, 1961: 279). The weaker a person's ethnic identification, the more likely he is to be culturally assimilated by the host society. On the contrary, a person with a strong ethnic identification will likely exhibit less cultural assimilation to the wider society because of his greater retention of ethnic orientation and behaviour. For this reason, it seems reasonable to agree with Lieberman (1970: 8) who contends that an ethnic group which maintains its identity will be more likely to retain its language.

In light of the above discussions, it is just a logical extension of thought to hypothesize a positive relationship between the ethnic identification of parents and their activeness in directly promoting the ethnic language to their children. Parents who maintain stronger ethnic identification will likely retain more ethnic way of living, of which the use of ethnic language at home is probably one of the most salient features.

Parents' Ethnic Community Involvement

It has been demonstrated that the social organization of the ethnic community is a very important determinant of the direction of the interpersonal relations of immigrants (Breton, 1964). According to Breton, ethnic communities with high "institutional completeness"¹² are able to exert stronger attracting forces to the ethnic members. In other words, higher intensity of ethnic community involvement of ethnic members are present in more cohesive ethnic communities. Without doubt, the interpersonal, informal relations within the highly institutionally complete ethnic group constantly reinforce ethnic group identification, social solidarity, and the maintenance of ethnic cultural activities. Isajiw (1975: 130) also noted that Max Weber's discussion of "community closure" implies that ethnic community closure serves to maintain a positively esteemed ethnic identity.

There could be three possible effects due to the social integration and ethnic identity maintenance capacities of the ethnic community. The first one is the heightening of the parents' inclination to want their children to learn the ethnic language. Parents who are intensively involved in ethnic community activities are more likely to maintain a stronger ethnic identification, which pushes them to make greater efforts to promote the ethnic language.

Another consequence of ethnic community involvement

derives from the habitual retention of a cultural way of living by participating parents. The ethnic community is a prominent domain of ethnic language use. Parents who frequently participate in ethnic community activities have more chances to use the ethnic language. Because of this, it may become a matter of habit to make greater use of the ethnic language at home.

There is yet another possible effect of ethnic community participation. Parents intensively participating in ethnic community activities would come to value the maintaining of ethnic community involvement for its own sake. The holding of this value may lead them to encourage and help their children to join ethnic community activities. One efficient way to achieve this is, of course, to transmit the ethnic language to their children. Such a motivation of promoting ethnic language to children can be designated as "integrative",¹³ as the parents' aim is to enable their children to participate in and be integrated into the ethnic community.

These three effects due of parents' ethnic community involvement (strengthening of ethnic identification, greater habitual use of the ethnic language at home, and helping of their children to engage in ethnic community activities) would lead to parents' active direct promotion, and hence wield subsequent influences on ethnic language retention by children. (forthcoming)
However, as argued by Reitz, /although ethnic community reinforces the family as a basis of ethnic language retention, it nevertheless has no direct influence on language retention,

That is to say, the influence is indirect, and is likely to be via parents' direct promotion at home.

Parents' Knowledge of English/French¹⁴

That parents' knowledge of the official dominant language is inversely related to their use of ethnic language with children is a commonplace. Parents unable to speak the official language automatically rely on the ethnic language in their discourse with children. Thus, direct promotion of ethnic language is prompted. For bilingual parents, there exists flexibility in language use. They can choose either the ethnic language or the official language. This flexibility in language use may persuade them to use the dominant language more often in their conversation with their children in order to minimize language barrier and misunderstanding. Weinreich (1964: 94-5) postulated that in the early period, the children of American immigrant families (who learn English quickly) switch back to the ethnic tongue in communication with their elders; but a generation later, the grandchildren become unilingual English and it is the parents and grandparents who must switch language in deference to their interlocutors. This suggests that forces are operating on parents to try to use the dominant language with their children as far as their knowledge of the language allows. In sum, an inverse relationship between parents' knowledge of English/French and their activeness in direct promotion of ethnic

language could be hypothesized.

A common inability to speak the dominant language necessitates the establishment of an ethnic community for the reason of not being able to communicate with people in the host society. Parents who do not know the dominant language probably have a circle of friends limited to people in the same ethnic group. Their social activities tend to polarize towards those offered by the ethnic community. On the other hand, parents able to speak the dominant language fluently can have more Canadian friends and can participate in activities offered in the host society. This may have the consequence of reducing their extent of involvement in ethnic community activities. As demonstrated by Breton and Pinard (1960), poor knowledge of the dominant language is associated with a high degree of ethnic homophily. Hence, parents' knowledge of English/French is likely to be negatively related to their intensity of ethnic community involvement.

What could be the influence of parents' knowledge of the dominant language on their ethnic identification? As mentioned above, better knowledge of the dominant language allows immigrants to take on more aspects of the dominant culture, hence facilitating a higher degree of cultural assimilation. A higher degree of cultural assimilation would of course entail a weakening of ethnic identification. In short, parents' knowledge of English/French would be inversely associated with their ethnic identification.

Parents' Length of Time in Canada

Parents' knowledge of English/French, their ethnic community involvement, and their ethnic identification may all be affected by the time factor: their length of time in Canada. Firstly, immigrants who did not know the dominant language or could not speak it fluently upon their first arrival at Canada might find it practical to learn, at least to an elementary level, the dominant language. Channels of learning the dominant language in Canada are generally easy to obtain access to. There are many basic official language courses offered for immigrants who are not familiar with English or French. For example, organizing such courses is one of the major concern of the Multicultural Centre in Hamilton.¹⁵ In this way, it is reasonable to hypothesize that the longer the length of time in Canada, the better would be the knowledge of the dominant language among immigrants who were ignorant of the language upon first arrival.

Secondly, length of time in the host society may have negative effects on ethnic community involvement and ethnic identification. Duncan and Lieberman (1959) found a positive correlation between assimilation and length of time that the immigrant group has been established in the United States. The longer the time in the host society, the greater is the extent of cultural assimilation. This in turn may bring about a reduction in the extent of ethnic community involvement (because the immigrant is now able to engage in more activities in the host society), and a weakening of

ethnic identification (also an outcome of increased assimilation).

In sum, it could be posited that parents' length of time in Canada would be positively related to their knowledge of English/French but negatively related to their ethnic community involvement and ethnic identification.

RESEARCH HYPOTHESES

From the above discussions on the parental variables and ethnic language retention by children, a number of hypotheses can readily be generated. All these hypotheses are stated "other things being equal".

1. The more active the parents' direct promotion of ethnic language, the greater the extent of ethnic language retention by children.
2. The stronger the parents' ethnic identification, the more active their direct promotion of ethnic language.
3. The greater the parents' ethnic community involvement, the more active their direct promotion of ethnic language.
4. The greater the parents' ethnic community involvement, the stronger their ethnic identification.
5. The better the parents' knowledge of English/French, the less active their direct promotion of ethnic language.
6. The better the parents' knowledge of English/French, the weaker their ethnic identification.

7. The better the parents' knowledge of English/French, the less their ethnic community involvement.
8. The longer the parents' length of time in Canada, the weaker their ethnic identification.
9. The longer the parents' length of time in Canada, the less their ethnic community involvement.
10. The longer the parents' length of time in Canada, the better their knowledge of English/French.

This investigation attempts to determine the direct causal effect of parents' direct promotion of ethnic language, and the indirect effects of the other four parental variables on ethnic language retention by children. The causal effects among the other four parental variables themselves will also be depicted. The above hypotheses can be represented by the following path diagram (FIGURE 1):

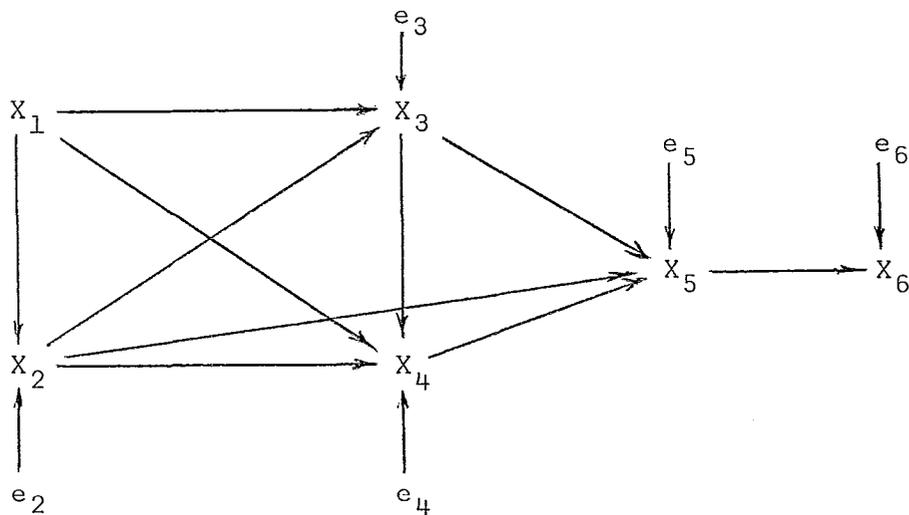


FIGURE 1. The Hypothesized Path Diagram

X_6	Ethnic language retention by children
X_5	Parents' direct promotion of ethnic language
X_4	Parents' ethnic identification
X_3	Parents' ethnic community involvement
X_2	Parents' knowledge of English/French
X_1	Parents' length of time in Canada

In the diagram, an arrow running from a certain variable to another variable represents the direct causal effect of the former to the latter. The causal order among the variables is represented by the directions of the arrows. Arrows running from the residuals e_2 , e_3 , e_4 , e_5 and e_6 to the variables X_2 , X_3 , X_4 , X_5 , and X_6 are residual paths. A residual path represents the composite effect of all other unobserved predictor variables on a certain dependent variable. As it was hypothesized that direct effects from X_1 to X_5 and from X_1 , X_2 , X_3 and X_4 to X_6 are absent, it follows that arrows representing these effects are absent.

SUMMARY

This chapter has reviewed some relevant literature on the functions of language, the relationship between ethnic language and the ethnic community, and the role of the family in ethnic language retention by children. There are two important characteristics of language. Firstly, language serves as a system of communication, and is both part and

symbol of culture. Secondly, language is an agent that welds people together and helps maintain group consciousness, identity, solidarity and integration. An ethnic language, therefore, not only facilitates communication between ethnic members, but also preserves the ethnic culture and maintains ethnic identity and solidarity among the ethnic group. Ethnic language loss, a wide-spread phenomenon in North American societies, is likely to bring about fading of ethnic culture and weakening of ethnic group identity and cohesion. In Canada, the quest for ethnic language retention has gained official support. Social scientific research is needed to examine the factors conducive to ethnic language retention.

Although influences on children's ethnic language retention from domains such as ethnic schools, ethnic community, and so^{on}, have been studied, little research has specifically dealt with the impact of the family on ethnic language retention by children. The objective of this thesis is to examine, in the context of five Chinese communities in urban Canada, the effect of parental influence on ethnic language retention by children.

FOOTNOTES

1. So far, the only systematic treatment on issues related to ethnic language retention in Canadian Chinese communities is contained in O'Bryan, Reitz and Kuplowska (1976), which will be discussed later.
2. Studies and discussions on problems associated with the two official languages include, among others, Lieber-son (1970) and Joy (1972).
3. For a comprehensive review of studies on language, see, for example, Hertzler (1953).
4. A term used by Hertzler (1965: 227).
5. "Speech-community" is defined by Bloomfield (1933: 29) as "A group of people who use the same system of speech signals."
6. A term used by Fishman (1966a: 21).
7. The policy has generated both positive and negative ap-praisals. For a review and discussion on the different opinions on the policy, see, for example, Palmer (1971, 1975).
8. By this Glazer means that if people emigrate because of oppression and deprivation of national freedom, cultural freedom, or religious freedom, they will cling more strongly to the national language than if they emigrate only for economic improvement (Glazer, 1966: 365).
9. Defined broadly, the term La Raza refers to "a special kind of unity of all Mexican-Americans who are united by cultural and spiritual bonds derived from God, and the use of Spanish is the primary symbol among Mexican-Americans of loyalty to La Raza" (Skrabanek, 1970: 280).
10. By "communication advantage" Lieber-son means the rela-tive numbers of monoglots with whom one can talk in each of the tongues. The index of communication ad-vantage reflects the communication within the ethnic group that is potentially available to a child about to learn one of the official languages (Lieber-son, 1970: 225, 235).

11. Except Reitz's analysis (forthcoming) mentioned above.
12. Breton measured the degree of institutional completeness of ethnic communities by using three indicators: the numbers of churches, welfare organizations, newspapers and periodicals.
13. The notion of "integrative motivation" here is similar to that used by Lambert (1967: 102), except that Lambert was using it in the context of the student learning more about the other cultural community.
14. For respondents in Montreal, French was also taken into account in determining their knowledge of the dominant language. See explanation in next chapter on measurements of variables.
15. See Hamilton Multicultural Centre (1977).

CHAPTER TWO:

METHODOLOGY

This chapter describes the sources of data for this thesis, some characteristics of the sample, and the operational measurements of the variables. The methods of data analysis are also mentioned, but a discussion is postponed to the next chapter.

THE NON-OFFICIAL LANGUAGES SURVEY

Data for this thesis were extracted from the Non-Official Languages Survey conducted in 1973. The survey, which was undertaken by J. G. Reitz of the University of Toronto, K. G. O'Bryan and O. M. Kuplowska of the Ontario Institute for Studies in Education, was mandated to examine the desire of Canadian ethnic groups for ethnic language retention and factors related to that desire. It was intended not only to provide a basis for federal policy-making in the area of promotion of ethnic cultures and languages, but also to contribute to the development of a large data bank on Canadian ethnic groups. The sample consisted of ten ethnic groups in five metropolitan cities in Canada. Ethnic origin, defined in the same manner as in the Canadian census, was determined on the basis of the country of birth of the nearest ancestor on the male side born outside America. The

choice of cities took into consideration (i) the size of the city and its ethnic concentration, (ii) the desire to include cities in as many provinces as possible, and (iii) to include at least one city in which the dominant language was French rather than English. Eventually, the cities selected were: Toronto, Ontario; Vancouver, British Columbia; Edmonton, Alberta; Winnipeg, Manitoba; and Montreal, Quebec. The ten ethnic groups were: Chinese, Dutch, German, Greeks, Hungarian, Italian, Polish, Portuguese, Scandinavian, and Ukrainian. As noted by O'Bryan, Reitz and Kuplowska (1976: 26), these were the ten largest ethnic groups in Canada (other than British and French) over the five cities. For the purpose of this thesis, only the Chinese subsample was utilized for analysis.

The sampling design of the Survey was complex. As a detailed description of the whole sampling procedure can be found in O'Bryan, Reitz and Kuplowska (1976: 26-34, Appendices A, B and C), a brief introduction will be sufficient here. Moreover, as the present study concerns only the Chinese subsample, descriptions on other subsamples will be omitted.

At the onset, the unavailability of a sampling frame for non-English, non-French residents of the five cities prompted the investigators to execute a systematic screening process in order to get at a representative sample. This screening process formed the first phase of the sampling procedure. It was achieved by using city-wide stratified sampling in each of the five cities. This was to ensure

adequate representation for all ethnic group members. Some 24,575 households were selected for screening interviews to determine ethnic origin. Among these, 20,760 households or 84.5 per cent of the total number of selected households were successfully interviewed. Then, one person eighteen years of age or older in each household was selected at random for interviewing. This screening yielded 3,228 eligible respondents, who then comprised the target-group for the second phase of sampling. In the second-phase sampling, the main interview was conducted. Among the 3,228 eligible respondents, 2,433 intensive interviews were completed, producing a 75.4 per cent completion rate. Out of these 2,433 respondents, 151 or 6.3 per cent were Chinese.

In order that estimates of characteristics of the population in the five cities could be made, a weighting scheme was devised. The weighting procedure took account of differential sampling probabilities and interview completion rates. In the Chinese subsample, the average weighting factor was 381.7, producing a weighted sample size of 57,635. The weighting factors for Chinese in the different cities were: 431.9 for Montreal, 692.0 for Toronto, 106.3 for Winnipeg, 323.7 for Edmonton, and 348.7 for Vancouver. TABLE 1 shows the distributions of the weighted and unweighted Chinese subsample in the five cities:

TABLE 1. Distribution of the Chinese Subsample
by City

City	Weighted	Unweighted
Montreal	3,455	8
Toronto	19,377	28
Winnipeg	2,126	20
Edmonton	5,827	18
Vancouver	26,850	77
Total	57,635	151

How accurate was such an estimate of the population of Chinese in the five cities based on the weighted sample size? The method employed by the investigators to appraise the accuracy of the estimate was to compare the weighted distribution of the sample with that reported in the 1971 census enumeration. It turned out that the total number of Chinese in the five cities reported in the 1971 census was 53,090. As the weighted sample size of Chinese was 57,635, the estimate of the Chinese population based on the weighted Chinese subsample in the Survey therefore exceeded the 1971 census by only 8.6 per cent. Compared to the overall discrepancy of 15.3 per cent between the total weighted sample of the ten groups and the corresponding population shown in the census, the estimate of the Chinese subsample appeared reasonably accurate.

Interviewing was conducted by the Institute for Behavioural Research of York University and the Centre de

Sondage of the Université de Montréal in the spring of 1973. Interviews were conducted in English or French except in cases in which the respondents' knowledge of one of those languages was inadequate. Multilingual interviewers were available where necessary. Also, translations of the entire interview schedule were available for use with respondents speaking English, French, Greek, Italian, Chinese, Portuguese, Ukrainian, Magyar, Polish or German. A pre-test of the interview schedule was also carried out before the main interview was conducted.

SOME CHARACTERISTICS OF THE CHINESE SUBSAMPLE

Since this thesis studies the effect of parents' direct promotion of Chinese language on language retention by their children, only those Chinese respondents who were parents and who had at least some knowledge of Chinese were selected for the present analysis. To identify the parents, the respondents were asked: "How many children do you have?" Those who reported that they have one or more children were parents. TABLE 2^(p. 35) shows the weighted and unweighted distributions of parents in the Chinese subsample:

The respondents' knowledge of Chinese was assessed by the following method.¹ They were asked to indicate their mother tongue and their self-perceived competence in understanding, speaking, reading, and writing Chinese. Those who

TABLE 2. Distribution of Parents in the Chinese Subsample

Parents	%		N	
	W	(UW)*	W	(UW)
Yes	63.1	(63.6)	36,341	(96)
No	36.9	(36.4)	21,294	(55)
Total	100.0	(100.0)	57,635	(151)

* W = Weighted; UW = Unweighted

This abbreviation will be used throughout the thesis

reported that they could understand, speak, read, and write very well were classified as "most fluent"; for those who indicated their mother tongue was Chinese, it was presumed that they could understand and speak Chinese well. If they reported that they could read and write Chinese "very well", they would also be classified as "most fluent". The "some knowledge" category consisted of those respondents who had a degree of knowledge of Chinese but were not very well in all aspects. The "no knowledge" category was comprised of respondents whose mother tongue was not Chinese, and who did not claim any knowledge of Chinese in all the above aspects. The distribution of knowledge of Chinese in the Chinese subsample is given in TABLE 3:

TABLE 3. Distribution of Parents' Knowledge of Chinese in the Chinese Subsample

Knowledge	%		N	
	W	(UW)	W	(UW)
Most Fluent	48.2	(49.0)	27,759	(74)
Some Knowledge	42.6	(42.4)	24,556	(64)
No Knowledge	9.2	(8.6)	5,321	(13)
Total	100.0	(100.0)	57,635	(151)

Respondents who were not parents or had no knowledge of Chinese were excluded. In so doing, the final weighted and unweighted numbers of respondents selected from the Chinese subsample became 33,557 and 89. Although it might be better to have a selected sample size larger than the present one, the present one is not too small. The notion of sampling is to make inference about the population from a small sample. What is important is that the sample size has the degrees of freedom required in statistical analysis. In this study, regression analysis is performed, and the t-statistic used for the test of significance. As the t-statistics is specifically designed for small number of cases, the present sample size appears adequate.

A few socio-demographic characteristics of the selected Chinese subsample are presented here. Both the

weighted and unweighted distributions are given. However, the weighted distribution is chosen for description because it represents the estimation of population characteristics. The socio-demographic characteristics are age, sex, total family income, education, and occupational status. It should be noted that missing cases are not included in the distributions.

Age

A majority of the Chinese population were quite young, as over 60 per cent were below the age of 40. TABLE 4 gives the proportions of Chinese in various age groups:

TABLE 4. Age Distribution of the Selected Sample

Age Group	%		N	
	W	(UW)	W	(UW)
18 - 30	16.7	(17.2)	5,466	(15)
31 - 40	52.9	(49.4)	17,347	(43)
41 - 50	14.2	(18.5)	4,661	(16)
51 or Over	16.2	(14.9)	5,303	(13)
Total	100.0	(100.0)	32,777	(87)

Sex

As shown by TABLE 5, the selected sample contains a larger proportion of male than female:

TABLE 5. Sex Distribution of the Selected Sample

Sex	%		N	
	W	(UW)	W	(UW)
Male	59.4	(59.6)	19,948	(53)
Female	40.6	(40.4)	13,609	(36)
TOTAL	100.0	(100.0)	33,557	(89)

Total Family Income

TABLE 6 indicates that in 1973, the largest proportion (37.5 per cent) of Chinese was found in the income categories "\$5,000 - 9,999" and "\$10,000 - 15,999". Only 18.7 per cent had an amount of total family income equal to or over \$16,000, and only 17.3 per cent had it below \$5,000.

TABLE 6. Total Family Income Distribution
of the Selected Sample

Amount	%		N	
	W	(UW)	W	(UW)
Less than \$5,000	17.3	(18.6)	4,609	(13)
\$5,000 - 9,999	37.5	(37.1)	9,988	(26)
\$10,000 - 15,999	26.5	(25.7)	7,065	(18)
\$16,000 or More	18.7	(18.6)	4,977	(13)
Total	100.0	(100.0)	26,639	(70)

Education

While quite a large proportion of Chinese had received less than eight or less than twelve years of formal education, a considerable proportion (37.4 per cent) had received more than thirteen years of formal education (TABLE 7):

TABLE 7. Education Distribution of the
Selected Sample

Years of Formal Education	%		N	
	W	(UW)	W	(UW)
8 Years or Less	33.3	(33.3)	11,016	(29)
9 - 12 years	29.4	(31.1)	9,718	(27)
13 Years or More	37.4	(35.6)	12,368	(31)
Total	100.0	(100.0)	33,102	(87)

Occupational Status

Occupations of the Chinese were classified according to the scheme used by the Dominion Bureau of Statistics (1971) in Census of Canada, 1971. Here, they were ranked according to the Pineo-Porter Occupational Prestige Scores (Pineo and Porter, 1967). Those occupations with scores less than 40 were further placed into the category of "low" occupational prestige. Those with scores between 40 and 60 were in the category of "medium" occupational prestige. "high" occupational prestige was assigned to those occupations with scores over 60. Slightly less than half (48.6 per cent) of the Chinese were in occupations with low occupational prestige. However, over a quarter (27.4 per cent) held jobs with high occupational prestige (TABLE 8):

TABLE 8. Distribution of Occupational Status of the Selected Sample

Status	%		N	
	W	(UW)	W	(UW)
Low	48.6	(53.6)	12,185	(37)
Medium	24.0	(21.7)	6,026	(15)
High	27.4	(24.7)	6,882	(17)
Total	<u>100.0</u>	<u>(100.0)</u>	<u>25,093</u>	<u>(69)</u>

OPERATIONAL MEASUREMENT OF THE VARIABLES

Ethnic Language Retention by Children

Fishman (1964: 35-6) distinguished three aspects of language ability which may be possessed in different degrees. He called this variation in language ability "media variance", whose aspects include written, read and spoken language. The assessment of language ability, therefore, calls forth the measurement of at least writing, reading and speaking abilities. In this thesis, however, only ability to speak the ethnic language was measured. There are two reasons for this. Firstly, whereas the Non-Official Languages Survey provided measurements of respondents ethnic language ability in various aspects, only speaking ability was assessed for their children. Therefore, other aspects of children's ethnic language ability such as reading and writing were not determined. Secondly, this thesis deals with parents' direct influence on children's language retention. As parents' direct influence would largely be cast through daily conversation in the ethnic language,² it is consistent to examine its effect on the speaking aspect. Abilities in reading and writing the language could be better acquired through other domains such as ethnic schools. However, the examination of the effects of other domains on ethnic language retention by children lies outside the province of this thesis.

Another point that should be noted is that only ethnic language retention (speaking aspect) by the oldest child was assessed. This is because it was assumed that, other things being equal, the effects of parents' direct promotion on ethnic language retention would be more or less similar for various children, provided that the activeness of promotion impinged equally upon them.

Ethnic language retention by children, operationalized as retention of ethnic language speaking ability by the oldest child, was measured by the following item in the interview schedule:

How well can he/she (oldest child) speak Chinese?

Clearly, the assessment was based on parents' subjective evaluation of the speaking ability of their children. It should be noted that variation in subjective standards among parents was possible.

Response categories for the item were "very well", "fairly well", "not very well", and "not at all", with assigned scores 3,2,1, and 0, respectively. TABLE 9 shows the distribution of this variable:

In general, the retention rate was high, as indicated by 61.5 per cent of Chinese who said that their oldest children could speak Chinese very well or fairly well. This high retention rate might have been due to the presence of oldest children who were brought up in China or Hong Kong.

TABLE 9. Distribution of Ethnic Language Retention by Children

Degree	%		N	
	W	(UW)	W	(UW)
Not At All	18.8	(16.5)	5,606	(13)
Not Very Well	19.7	(21.5)	5,853	(17)
Fairly Well	16.9	(17.7)	5,041	(14)
Very Well	44.6	(44.3)	13,277	(35)
Total	100.0	(100.0)	29,777	(79)

Parents' Direct Promotion of Ethnic Language

Parents' direct promotion of ethnic language was assessed by three indicators, namely, speaking to children in ethnic language, insisting reply in ethnic language by children, and teaching children the ethnic language. The index of direct promotion was constructed from three items in the interview schedule:

- (i) What proportion of the time do you use Chinese when you speak to him/her (oldest child)?

Scores assigned to the response categories were 3 for "always", 2 for "most of the time", 1 for "some of the time", and 0 for "never".

- (ii) Do you ever insist that your children speak to you in Chinese?
- (iii) Have you tried to teach your children by using books?

Response categories for items (ii) and (iii) were "yes", which would score 1, and "no", for which score was 0.

The three items were summed to form the index of parents' direct promotion. It can easily be seen that the scoring system for item (i) was different from those of items (ii) and (iii). Item (i) had scores ranging from 0 to 3, whereas items (ii) and (iii) ranged from 0 to 1 only. Therefore, item (i) would likely yield a variance larger than those of items (ii) and (iii), producing an effect analogous to assigning greater weight for item (i). If equal weighting for the three items is desired, then standardized scores rather than raw scores for the items might have to be used. For each item, each score was converted into its standard form by subtracting from the mean and then being divided by the standard deviation. Then the combined scale of the three items using standard scores was correlated with that using the original raw scores. It turned out that the correlation between the two scales was extremely high ($r = .96$), indicating that the difference due to the use of raw scores was negligible. In view of this, the raw scores for each item were used for the construction of the index of parents' direct promotion. The index had scores ranging from a low of 0 to a high of 5.

Next, the reliability of the index has to be examined. A scale or test is reliable to the extent that repeated measurement made by it under constant conditions will give the same result (Moser and Kalton, 1971: 353). Ideally,

the "test-retest" method should be employed in estimating reliability. However, this method is seldom practical in the survey context not only because it involves greater cost but also because the first interview is likely to influence the informant's response in the second interview. Moreover, attitudes with respect to whatever item to be measured may change between the two timings. For these and other reasons, the "split-half" method is more often used. The set of items in the test is divided into two matched halves and the scores for the two halves are correlated. The correlation so obtained relates to a test of half the full length and it therefore needs to be corrected to give the "stepped-up" reliability of the whole test (Moser and Kalton, 1971: 354). The stepped-up reliability for a test divided into two halves is given by the generalized Spearman-Brown formula:

$$r_w = \frac{2r_m}{1 + r_m}$$

where r_w is the stepped-up reliability and r_m the correlation between halves.

A more rigorous method of assessing the reliability of a scale is to use coefficient alpha developed by Cronbach (1951). Alpha is in effect the mean of all possible split-half coefficients. It is an index of the internal consistency reliability of the scale. A short-cut and approximate formula for coefficient alpha, involving only the number of

items in the scale and the interitem correlations, is given as follows (McKennell, 1977: 197):

$$\text{Alpha} = \frac{m\bar{r}_{ij}}{1 + (m-1)\bar{r}_{ij}}$$

where m is the number of separate items in the test, \bar{r}_{ij} is the average of all the interitem correlations.

For the present index of parents' direct promotion of ethnic language, the correlations between items (i) and (ii), (i) and (iii), and (ii) and (iii) were .41, .27, and .44, respectively. The calculation of the coefficient alpha of the index of direct promotion using the above interitem correlations is as follows:

$$\begin{aligned} \text{Alpha} &= \frac{3(.41+.27+.44)/3}{1 + (3-1)(.41+.27+.44)/3} \\ &= .64 \end{aligned}$$

To be considered consistent and reliable, an index should have a coefficient alpha over .60. Though the value for the coefficient alpha did not turn out extremely big, the index did appear to have reasonably acceptable internal consistency and reliability. TABLE 10 shows the distribution of the index of parents' direct promotion:

TABLE 10. Distribution of Index of Parents' Direct Promotion of Ethnic Language

Score	%		N	
	W	(UW)	W	(UW)
0. Lowest	14.1	(13.7)	4,222	(11)
1.	16.0	(13.7)	4,791	(11)
2.	10.9	(15.1)	3,248	(12)
3.	18.9	(16.2)	5,621	(13)
4.	21.1	(23.8)	6,282	(19)
5. Highest	19.0	(17.5)	5,651	(14)
Total	100.0	(100.0)	29,815	(80)

The greatest proportion of Chinese were found in categories with scores of 4 and 5. Together they formed 40.1 per cent of the estimated Chinese population. This indicates a high degree of direct promotion. As can be seen from TABLE 11 (p. 48), Chinese had the largest proportion (19.0 per cent) of the estimated population with the highest score among the ten ethnic groups in the Non-Official Languages Survey. Next were the Greek and Portuguese, who had 18.5 and 12.2 per cents, respectively, of their estimated population with the highest score of parents' direct promotion of ethnic language.

Parents' Ethnic Identification

Parents' ethnic identification was measured by the

TABLE 11. Weighted Distribution of Index of
Parents' Direct Promotion of Ethnic
Language for the Other Nine Ethnic
Groups

Score	Dutch %	German %	Greek %	Hungarian %	Italian %	Polish %	Portu- guese %	Scandi- navian %	Ukrain- ian %
0. Lowest	49.4	28.0	11.7	30.1	19.6	43.3	0.0	64.8	36.7
1.	25.3	32.2	9.2	31.2	16.3	18.7	12.4	17.3	20.7
2.	17.6	15.7	11.0	8.9	7.8	13.1	9.7	11.7	14.0
3.	5.3	12.5	17.4	18.6	20.7	4.5	31.8	4.4	14.3
4.	2.5	10.7	32.3	19.1	24.9	14.8	33.9	1.8	8.5
5. Highest	0.0	0.9	18.5	2.1	10.7	3.6	12.2	0.0	5.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	(40,601)	(132,689)	(61,489)	(19,539)	(263,588)	(42,955)	(34,851)	(25,360)	(80,617)

following item:

How do you usually think of yourself; as a Chinese, or a Chinese-Canadian, or a Canadian-Chinese, or a Canadian, or what?

The "Chinese" category, which represents the strongest ethnic identification, would be assigned a score of 3. For the categories "Chinese-Canadian" and "Canadian-Chinese", score would be 2. "Canadian of Chinese origin" would score 1. Lastly, 0 score would be given to a response of "Canadian", "other", or "no particular group".

The distribution of parents' ethnic identification is given in TABLE 12:

TABLE 12. Distribution of Parents' Ethnic Identification

Category	%		N	
	W	(UW)	W	(UW)
Chinese	31.5	(30.0)	10,579	(27)
Chinese-Canadian or Canadian- Chinese	39.7	(40.4)	13,308	(36)
Canadian of Chinese Origin	14.2	(13.6)	4,770	(14)
Canadian or other or No Particular Group	14.6	(15.7)	4,899	(14)
Total	100.0	(100.0)	33,557	(39)

From the above table, it can be noticed that over

three-tenths of Chinese held the strongest ethnic identification. The largest proportion identified themselves either as Chinese-Canadian or Canadian-Chinese. Less than 15 per cent did not associate "Chinese" with their ethnic labels.

Parents' Ethnic Community Involvement

The index of parents' ethnic community involvement originally had four indicators. They were: ethnic friends, visit to ethnic people, ethnic neighbours, and reading ethnic publications. The four items in the interview schedule were:

- (i) I would like you to think about your three closest friends (or couples) who are not relatives. Now of these, how many are Chinese?
(A couple is counted as one friend; If either member of the couple is Chinese, the couple is counted as Chinese)

A response of "three" would score 3. Scores for "two", "one", and "none" would be 2, 1, and 0, respectively.

- (ii) When you visit ~~other~~ people in their homes, are these people usually...?

If "Chinese" was the response, a score of 3 would be given. For respondents who reported "no particular group", a score of 2 would be assigned. If "English-Canadians" or "French-Canadians" were reported, the score would be 1.

- (iii) Of the people living in this neighbourhood, are they mostly Chinese, or mostly English-Canadian, or mostly French-Canadian, or some other group or what?

"Mostly Chinese" would score 3; "no particular group, mixed"

would score 2; "mostly English-Canadians", "mostly French-Canadians", or "other" would score 1; and "don't know" would score 0.

- (iv) Would you say you read Chinese publications?

Response categories were "regularly", "occasionally", "rarely", and "inappropriate", with scores 3, 2, 1, and 0 respectively.

An examination of the interitem correlations reveals that "ethnic neighbours" (iii) should be dropped. Correlations between "ethnic friends" (i) and "visit" (ii) was .58; between "ethnic friends" (i) and "read ethnic publications" (iv) was .54; and between "visit" (ii) and "read ethnic publications" (iv) was .44. But the correlations between "ethnic neighbours" (iii) and "ethnic friends" (i), "visit" (ii), and "read ethnic publications" (iv) were only .03, -.06, and .04, respectively. In view of the extremely low correlations of "ethnic neighbours" with the other three indicators, its utility in the construction of the index was doubted: Consequently, ethnic neighbours was abandoned, and the index of parents' ethnic community therefore was constructed from the remaining three items. The index has scores ranging from 1 to 9. The coefficient alpha of the index calculated from the approximate formula mentioned above was .76, indicating that it was of acceptable internal consistency and reliability. TABLE 13 gives the distribution of the index:

TABLE 13. Distribution of Index of Parents' Ethnic Community Involvement

Score	%		N	
	W	(UW)	W	(UW)
1. Lowest	2.1	(1.1)	692	(1)
2.	9.9	(9.0)	3,335	(8)
3.	4.6	(4.5)	1,554	(4)
4.	5.3	(5.6)	1,794	(5)
5.	8.4	(11.2)	2,818	(10)
6.	12.3	(12.4)	4,139	(11)
7.	11.7	(12.4)	3,919	(11)
8.	21.4	(21.3)	7,168	(19)
9. Highest	24.3	(22.5)	8,138	(20)
Total	100.0	(100.0)	33,557	(89)

It can be observed from TABLE 13 that large proportions of Chinese had high degrees of ethnic community involvement. In fact, 45.7 per cent had scores 8 or 9. The percentage with scores less than 4 was only 16.6. Among the ten ethnic groups in the Non-Official Languages Survey, Chinese had the highest degree of parents' ethnic community involvement. 24.3 per cent of the estimated Chinese population had the highest score. As indicated by TABLE 14, the groups with largest proportions in the highest score among the other nine ethnic groups were Portuguese and Italian, and the proportions were 16.5 and 16.2 per cents, respectively. Scandinavian, Dutch and German had the lowest degrees of parents' ethnic community involvement.

TABLE 14. Weighted Distribution of Index of
Parents' Ethnic Community Involvement
For Other Nine Ethnic Groups

Score	Dutch %	German %	Greek %	Hungarian %	Italian %	Polish %	Portu- guese %	Scandi- navian %	Ukrain- ian %
1. Lowest	13.1	10.3	0.9	10.4	6.5	9.4	1.6	14.8	5.0
2.	26.8	27.0	9.5	19.4	12.2	34.4	7.1	48.5	26.8
3.	9.6	19.8	4.3	17.3	6.3	16.9	4.7	14.5	15.8
4.	12.4	10.7	6.4	10.1	5.2	4.0	3.2	8.0	9.3
5.	15.8	8.9	11.8	8.3	10.1	7.3	7.1	5.6	9.3
6.	8.2	8.7	24.3	14.5	18.0	5.7	37.1	4.0	9.5
7.	7.5	4.9	11.6	5.7	10.5	5.5	8.9	2.3	6.3
8.	5.3	6.0	16.3	8.7	14.9	6.7	13.8	2.3	9.9
9. Highest	1.2	3.8	15.1	5.7	16.2	10.2	16.5	0.0	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	(55,343)	(194,390)	(67,574)	(21,715)	(295,612)	(56,009)	(41,581)	(48,164)	(99,113)

Parents' Knowledge of English/French

The fact that there were respondents in Montreal posed the necessity of taking into account their knowledge of French. For these respondents, knowledge of French was considered rather than knowledge of English either if they knew French instead of English, or if they knew both languages but their knowledge of French was better than that of English. For respondents in the other four cities, only knowledge of English was considered.

Parents' knowledge of English/French was measured by their ability to read and write the language. Other aspects of language ability such as understanding and speaking might have been included. However, as it is safe to assume that one who can read and write a language would also be able to understand and speak it, the index of parents' knowledge of English/French was measured by reading and writing abilities.

The two items in the interview schedule asked:

- (i) How well can you read English/French?
- (ii) How well can you write English/French?

Scores for the two items were 3 for "very well", 2 for "fairly well", 1 for "not very well", and 0 for "not at all".

The correlation between ability to read English/French and ability to write English/French was .96. A very high coefficient alpha was therefore obtained (.98). The index has scores ranging from 0 to 6.

The distribution of the index of parents' knowledge of English/French is shown in TABLE 15:

TABLE 15. Distribution of Index of Parents' Knowledge of English/French

Scores	%		N	
	W	(UW)	W	(UW)
0. No Knowledge	16.6	(17.7)	4,882	(14)
1.	3.6	(3.8)	1,046	(3)
2.	26.3	(22.8)	7,708	(18)
3.	5.9	(6.3)	1,719	(5)
4.	14.0	(15.2)	4,119	(12)
6. Most Fluent	33.6	(34.2)	9,867	(27)
Total	100.0	(100.0)	29,341	(79)

From the above table, it can be observed that over 45 per cent of Chinese scored 4 or 6, indicating that quite a large proportion of them could read and write English/French fluently.

Parents' Length of Time in Canada

Length of time in Canada was determined by the difference in years between the respondent's age and his/her age when he/she moved to Canada. The item for "age when moved to Canada" simply asked: How old were you when you moved to Canada? Scores assigned to the different lengths of time in Canada were: 1 for "0 - 4 years" (1969-1973); 2 for "5 - 9

years" (1964-1968); 3 for "10 - 14 years" (1959-1963); 4 for "15 - 19 years" (1954-1958); 5 for "20 - 27 years" (1946-1953); 6 for "28 years or more" (1945 or before). Respondents who grew up in Canada also scored 6. The distribution of parents' length of time in Canada is as follows (TABLE 16):

TABLE 16. Distribution of Parents' Length of Time in Canada

Years	%		N	
	W	(UW)	W	(UW)
0 - 4	27.4	(27.0)	9,194	(24)
5 - 9	18.0	(19.1)	6,047	(17)
10 - 14	5.2	(4.5)	1,738	(4)
15 - 19	19.5	(16.8)	6,528	(15)
20 - 27	9.1	(10.1)	3,055	(9)
28 or more	20.9	(22.5)	6,998	(20)
Total	100.0	(100.0)	33,557	(89)

The above table illustrates that in 1973 the Chinese parents in Canada were characterized by their recency of immigration. 45.4 per cent moved to Canada after 1968. However, a substantial amount (20.9 per cent) had been staying in Canada for twenty-eight years or more at the time of the Survey. Among all the ten ethnic groups, Chinese also had the largest proportion (27.4 per cent) who came to Canada after 1968 (TABLE 17). Portuguese and Greek also had relatively large

TABLE 17. Weighted Distribution of Parents' Length of Time in Canada for Other Nine Ethnic Groups

Years	Dutch %	German %	Greek %	Hungarian %	Italian %	Polish %	Portu- guese %	Scandi- navian %	Ukrain- ian %
0 - 4	2.6	2.9	19.4	9.8	5.2	1.4	21.8	4.9	0.0
5 - 9	2.6	4.7	30.0	5.2	18.8	2.6	35.4	1.1	2.6
10 - 14	9.2	7.9	26.7	6.2	16.8	7.5	21.5	3.9	0.5
15 - 19	20.2	21.8	10.0	37.7	25.2	5.1	18.9	7.7	2.7
20 - 27	20.2	12.7	7.2	10.9	11.0	12.8	0.0	2.6	9.3
28 or More	45.2	50.0	6.8	30.3	23.0	70.1	2.4	79.8	84.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	(55,343)	(194,390)	(67,574)	(21,715)	(295,612)	(56,009)	(41,581)	(48,164)	(99,113)

amounts of most recent immigrants (21.8 and 19.4 per cent, respectively). On the other hand, Chinese, Portuguese and Greek had the smallest amounts of immigrants who had been in Canada for twenty-eight years or more.

METHODS OF DATA ANALYSIS

Path analysis is the major instrument employed for data analysis in this thesis. The use of path analysis entails certain assumptions. The major assumptions will be tested in order to see if they are met in the present analysis. One of the assumption - absence of interaction effects among the variables - will be tested by using Goodman's log-linear system. A brief description of path analysis and the test of assumptions is incorporated in the next chapter on presentation of results.

FOOTNOTES

1. This method was used by O'Bryan, Reitz and Kuplowska (1976: 43) in their construction of language knowledge index.
2. As will be described later, parents' direct promotion of ethnic language includes also teaching children the ethnic language. However, the chief effect would focus around speaking ability; and teaching the ethnic language may be conceived as a way to facilitate speaking ability.

CHAPTER THREE:

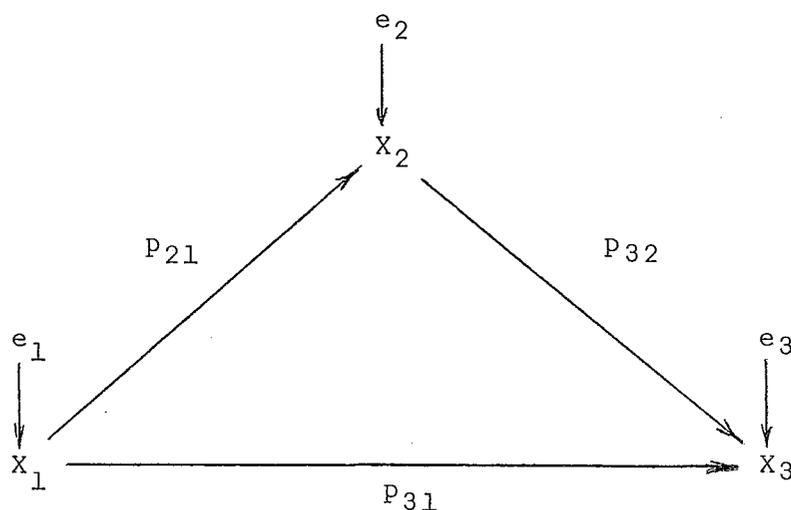
RESULTS

In this chapter, path analytic results of the data are presented. In addition, the major assumptions made in the use of path analysis are examined. Goodman's log-linear system is employed to detect interaction effects, the absence of which is one of the important assumptions in path analysis. Before the path analytic results are presented, a brief introduction to the basic principles of path analysis is necessary.

PATH ANALYSIS: A BRIEF OUTLINE

Path analysis was originally introduced by Sewell Wright (1921, 1960). In sociology, path analysis was discussed and brought into application by (among others) Duncan (1966), Blau and Duncan (1967), Sewell and Shah (1968), Blalock (1964, 1971), Land (1968), and Heise (1968, 1970, 1975). In brief terms, path analysis is a "method of decomposing and interpreting linear relationships among a set of variables by assuming that (i) a weak causal order among the variables is known, and (ii) the relationships among these variables are causally closed." (Kim and Kohout, 1975a: 383) The above relationships can be represented by

a so-called path diagram, in which the assumption about causal order or direction among the variables concerned is explicitly represented by the directions of the arrows. The following path diagram with three variables serves as an illustration:



The causal relationships among the three variables in the diagram can also be represented by a system of linear equations. Assuming that all the variables are in standard form, the structural equations representing the above path diagram are:

$$X_1 = e_1$$

$$X_2 = p_{21}X_1 + e_2$$

$$X_3 = p_{32}X_2 + p_{31}X_1 + e_3$$

where p_{ij} are path coefficients and e_i are error terms. Path coefficients may be estimated as the regression coefficients. In a recursive model such as this, p_{21} may be estimated as the regression coefficient of X_2 on X_1 , p_{32} and p_{31} as the

regression coefficients of X_3 on X_2 and on X_1 :

$$P_{21} = B_{X_2 X_1}$$

$$P_{32} = B_{X_3 X_2}$$

$$P_{31} = B_{X_3 X_1}$$

where $B_{X_i X_j}$ represents the partial regression coefficient of X_j on X_i . It is customary to use b^* , the standardized partial regression coefficient as estimate of path coefficient. The path coefficient for the error term (ξ) associated with a dependent variable in the path diagram is estimated by the formula $\sqrt{1 - R^2}$, where R is the multiple correlation between the dependent variable and the independent variables which directly influence it.

Unbiased and efficient estimation of path coefficients and their standard errors by multiple linear regression method entails certain assumptions. The major assumptions are as follows:

- (i) The relationships between the variables are linear;
- (ii) There exist no interaction effects among the variables i.e., the relationships are additive;
- (iii) There is absence of correlations between error terms, and between error terms and predictor variables;
- (iv) An equal interval level of measurement is achieved for each of the variables;

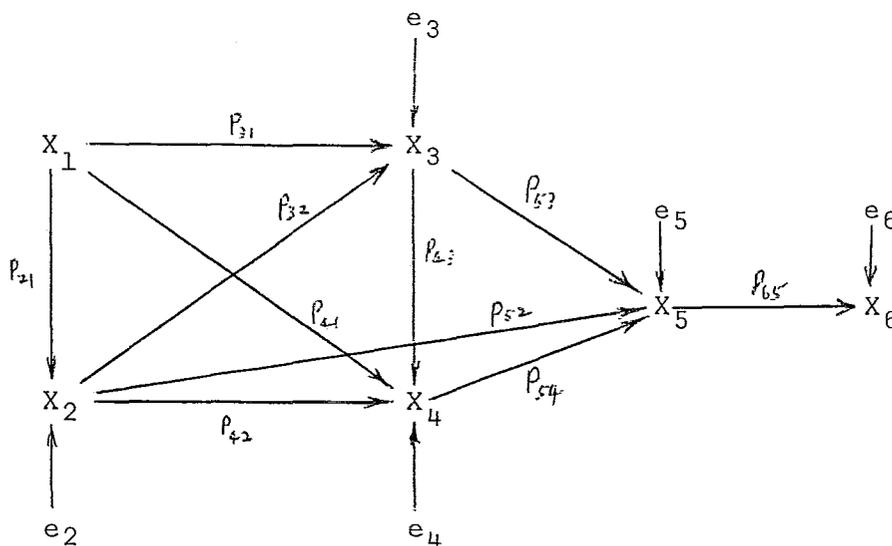
- (v) The error terms are homoscedastic; i.e. the expectation of an error of prediction is the same for all cases.
- (vi) The absence of multicollinearity; i.e., independent variables are not so highly correlated (e.g. 0.8 to 1.0) that it becomes difficult or impossible to separate the effects of one variable from another;
- (vii) The model is recursive; i.e., the flow of causation is one-way only: from the independent variable to the dependent one.¹

PATH ANALYTIC RESULTS OF THE DATA

As discussed earlier, the variables in the present analysis are:

- X₁ Parents' length of time in Canada
- X₂ Parents' knowledge of English/French
- X₃ Parents' ethnic community involvement
- X₄ Parents' ethnic identification
- X₅ Parents' direct promotion of ethnic language
- X₆ Ethnic language retention by children

According to the theoretical discussions in CHAPTER ONE, the above variables were hypothesized to be in a causal order represented by the following path diagram (see FIGURE 1 in p. 25):



To test the above recursive path model and estimate for the path coefficients, a procedure suggested by Duncan (1966: 7) appears useful. The idea is to add in all other possible paths into the model, and then perform multiple linear regressions for the estimation of the path coefficients. After all the regressions have been performed, those paths with non-significant t values could be eliminated. Then the regressions could be run over again for the estimation of only those significant path coefficients. Following this method, other possible paths were added into the hypothetical path diagram. The result is shown as FIGURE 2 (p.65).

The path coefficients (p_{ij}) for the model shown in FIGURE 2 may be estimated as the standardized partial regression coefficients (b_{ij}^*) in the following regression equations (all variables assumed in standard form).

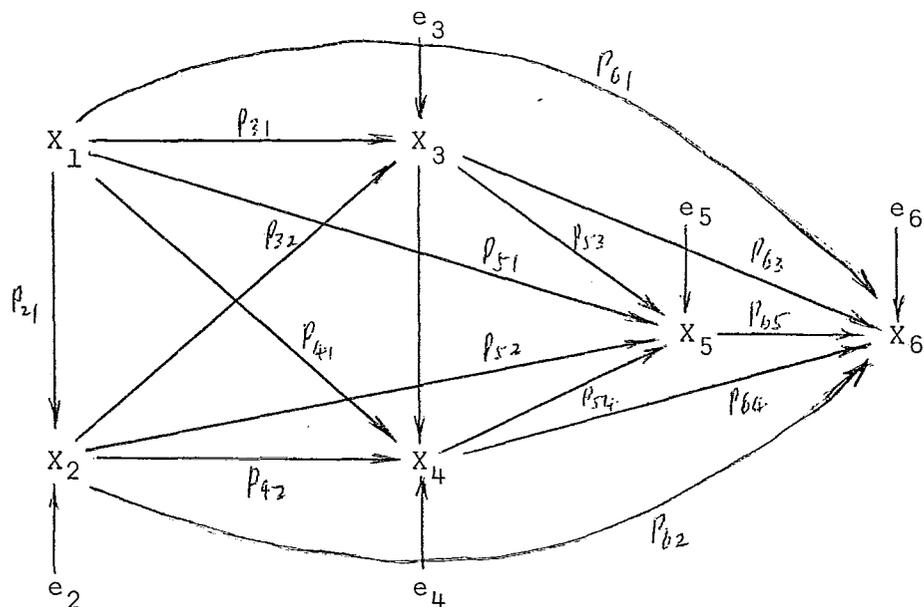


FIGURE 2. The Path Diagram with all Possible Paths

$$X_6 = b_{65}^* X_5 + b_{64}^* X_4 + b_{63}^* X_3 + b_{62}^* X_2 + b_{61}^* X_1 + e_6$$

$$X_5 = b_{54}^* X_4 + b_{53}^* X_3 + b_{52}^* X_2 + b_{51}^* X_1 + e_5$$

$$X_4 = b_{43}^* X_3 + b_{42}^* X_2 + b_{41}^* X_1 + e_4$$

$$X_3 = b_{32}^* X_2 + b_{31}^* X_1 + e_3$$

$$X_2 = b_{21}^* X_1 + e_2$$

Before the results of the above regressions are reported, it is necessary to note the correlations between the variables. TABLE 18 shows the correlation matrix of the variables:²

TABLE 18. Correlation Matrix of the Variables*

	X ₆	X ₅	X ₄	X ₃	X ₂	X ₁
X ₆	1.00	.66	.25	.65	-.44	(-.19)
X ₅		1.00	(.18)	.62	-.55	(-.16)
X ₄			1.00	(.21)	(-.00)	(-.12)
X ₃				1.00	-.48	(-.19)
X ₂					1.00	(.16)
X ₁						1.00

* All unbracketed correlation coefficients were significant at .05 level; those in brackets were non-significant.

Weighted N varied between 26,099 and 33,557, depending on missing data for a particular pair of variables; unweighted N varied between 71 and 89.

X₆: Ethnic language retention by children; X₅: Parents' direct promotion of ethnic language; X₄: Parents' ethnic identification; X₃: Parents' ethnic community involvement; X₂: Parents' knowledge of English/French; X₁: Parents' length of time in Canada.

The table of correlations show that ethnic language retention by children was strongly correlated with parents' direct promotion of ethnic language ($r=.66$) and parents' ethnic community involvement ($r=.65$), moderately strongly (but negatively) correlated with parents' knowledge of

English/French ($r = -.44$), and rather weakly correlated with parents' ethnic identification ($r = .25$). The correlation between ethnic language retention by children and parents' length of time in Canada was non-significant. The correlation coefficients indicate that the more active the parents' direct promotion, the greater their degree of ethnic community involvement, the less their knowledge of English/French, and the stronger their ethnic identification, the greater would be the extent of ethnic language retention by their children. The relative importance of these predictor variables is revealed by their correlations with ethnic language retention by children: a correlation coefficient indicates the number of standard deviation change in ethnic language retention produced by an increase of one standard deviation unit of a certain predictor variable without controlling for other predictor variables, given the causal ordering.

How was parents' direct promotion correlated with other variables? Besides being strongly correlated with ethnic language retention by children, it also had strong and positive correlation with their ethnic community involvement ($r = .62$) and negative correlation with their knowledge of English/French ($r = -.55$). Hence, the greater the parents' ethnic community involvement, the less their knowledge of English/French, the more active would be their direct promotion of ethnic language. However, parents' direct promotion was not significantly correlated with their ethnic identification nor their length of time in Canada.

It is somewhat astonishing to find that parents' ethnic identification was not significantly related to any other variables except ethnic language retention by children ($r=.25$). This means that whether or not parents were highly involved in ethnic community activities, whether or not they were good in English/French, and whether or not they had been in Canada for a long time were not likely to affect their ethnic identification. On the other hand, as indicated by the absence of a significant relation to their direct promotion, parents' ethnic identification did not allow a correct prediction of their activeness in direct promotion. But apparently, the stronger the parents' ethnic identification, the larger seemed to be the extent of ethnic language retention by children.

Besides being significantly related to their direct promotion of ethnic language and language retention by children, parents' ethnic community involvement was also significantly correlated (negatively) with their knowledge of English/French ($r=-.48$). That is to say, the worse the parents' English/French, the greater would be their ethnic community involvement. The relationship between parents' ethnic community involvement and their length of time in Canada was non-significant.

As pointed out above, parents' knowledge of English/French was significantly but negatively correlated with their ethnic community involvement ($r=-.48$), their direct promotion ($r=-.55$), and language retention by children

($r = -.44$). It was not significantly correlated with their ethnic identification, nor with their length of time in Canada.

Lastly, parents' length of time in Canada was found to have no significant relationships with other variables. This has been pointed out earlier.

When placed in the context of causal ordering of the variables in the path diagram, the above simple correlation coefficients are not appropriate for estimating the causal effects among the variables. This is because each of these coefficients shows only the gross effect of a certain independent variable on a certain dependent variable without controlling for other independent variables. To assess the direct contribution or effect of each independent variable on each dependent variable controlling for other independent variables, multiple linear regression could be employed. Path coefficients, which represent the direct causal effects of independent variables on dependent ones in the path model, would be estimated as the standardized partial regression coefficients (b^*) in multiple linear regressions. The values of the t-statistic could be used to test the significance of the b^* coefficients. As explained earlier, all other possible paths in addition to the hypothesized ones were added to the original path diagram (see FIGURE 2). Hence, the first performance of regression contained: X_6 on X_5, X_4, X_3, X_2, X_1 ; X_5 on X_4, X_3, X_2, X_1 ; X_4 on X_3, X_2, X_1 ; X_3 on X_2, X_1 ; and X_2 on X_1 . The structural equations then

were:

$$X_6 = p_{65}X_5 + p_{64}X_4 + p_{63}X_3 + p_{62}X_2 + p_{61}X_1 + e_6$$

$$X_5 = p_{54}X_4 + p_{53}X_3 + p_{52}X_2 + p_{51}X_1 + e_5$$

$$X_4 = p_{43}X_3 + p_{42}X_2 + p_{41}X_1 + e_4$$

$$X_3 = p_{32}X_2 + p_{31}X_1 + e_3$$

$$X_2 = p_{21}X_1 + e_2$$

where all the variables are in standard form, and p_{ij} is the path coefficient of the arrow running from X_j to X_i estimated as b_{ij}^* . The results of the regressions are presented in TABLE 19:³

TABLE 19. Standardized Partial Regression Coefficients (b^*), Multiple Correlations (R), and Squared Multiple Correlations (R^2) in the First Regressions*

Dependent Variables	Independent Variables					Multiple	
	X_5	X_4	X_3	X_2	X_1	R	R^2
X_6	.42	(.11)	(.16)	(-.13)	(-.13)	.67	.45
X_5		(.17)	.30	-.41	(-.00)	.64	.41
X_4			(.07)	(.04)	(-.10)	(.12)	(.01)
X_3				-.45	(-.16)	.50	.25
X_2					(.16)	(.16)	(.02)

*

All unbracketed b^* coefficients were significant at .05 level; bracketed ones were non-significant. Weighted N varied between 25,750 and 29,341, depending on missing data for a particular set of variables in a regression; Unweighted N varied between 70 and 79.

X_6 : Ethnic language retention by children; X_5 : Parents' direct promotion of ethnic language; X_4 : Parents' ethnic identification; X_3 : Parents' ethnic community involvement; X_2 : Parents' knowledge of English/French; X_1 : Parents' length of time in Canada.

As shown in TABLE 19, only four b^* coefficients turned out significant after the first regressions. This indicates that in the path diagram with all possible paths (FIGURE 2), only arrows from X_5 to X_6 , from X_3 to X_5 , from X_2 to X_5 , and from X_2 to X_3 could be established. Other arrows could be eliminated. The path model was then simplified into FIGURE 3 as follows:

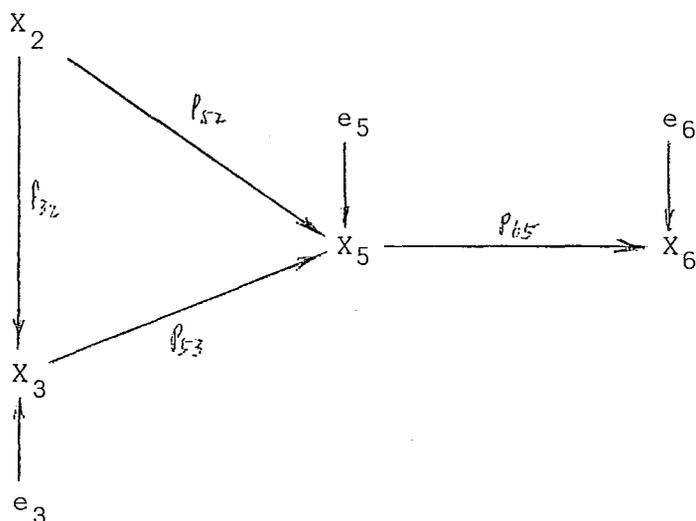


FIGURE 3. Simplified Path Diagram after First Regressions

- X₂ Parents' knowledge of English/French
- X₃ Parents' ethnic community involvement
- X₅ Parents' direct promotion of ethnic language
- X₆ Ethnic language retention by children

X₄ (parents' ethnic identification) was withdrawn from the original path diagram because (i) it was found to make no significant contribution to the prediction of ethnic language retention by children (X₆) nor to parents' direct promotion of ethnic language (X₅), and (ii) it could not be predicted from the remaining three variables (X₁, X₂ and X₃). Note that in TABLE 18 (p. 66) it was indicated that parents' ethnic identification (X₄) was correlated with ethnic language retention by children ($r=.25$). But after controlling for the other four independent variables, the effect became non-significant. This suggests that the original correlation between the two variables might be spurious. The exogenous variable in the original path diagram - parents' length of time in Canada (X₁), was also omitted due to the absence of significant arrows running from it to the other five variables.

The standardized partial regression coefficients shown in TABLE 16 should not be taken as final, because they were obtained from a regression analysis in which predictor variables not significantly correlated with dependent variables were included. The inclusion of predictor variables that yield non-significant b* coefficients would have caused the standard errors of the b* coefficients for the other

predictor variables to be inflated.⁴ Following Duncan's suggestion stated earlier, another estimation of regression coefficients is necessary. The second regressions need only involve the four remaining variables shown in the simplified path diagram (see FIGURE 3 in p. 71). The structural equations then became:

$$X_6 = P_{65}X_5 + e_6$$

$$X_5 = P_{53}X_3 + P_{52}X_2 + e_5$$

$$X_3 = P_{32}X_2 + e_3$$

The results of the second regressions are given in the following table (TABLE 20):⁵

TABLE 20. Standardized Partial Regression Coefficients, Multiple Correlations, and Squared Multiple Correlations, in the Second Regressions*

Dependent Variables	Independent Variables			Multiple R	R ²
	X ₅	X ₃	X ₂		
X ₆	.66	--	--	.66	.44
X ₅		.32	-.40	.62	.38
X ₃			-.48	.48	.23

* All b*s were significant at .05 level. Weighted N varied between 27,438 and 29,341, depending on missing data for a particular set of variables in a regression; unweighted N varied between 74 and 79.

As pointed out earlier, the residual path coefficient for a dependent variable can be obtained from the squared multiple correlation between the dependent variable and the independent variables by the following formula:

$$e_Y = \sqrt{1 - R_Y^2(X_1 X_2 \dots X_n)}$$

where e_Y is the residual path coefficient, R^2 the multiple correlation, Y the dependent variable, and $X_1 X_2 \dots X_n$ the n independent variables. For the simplified path diagram (FIGURE 3), the residual path coefficients for e_6 , e_5 and e_3 were calculated as follows:

$$e_6 = \sqrt{1 - R_{X_6}^2(X_5)} = \sqrt{1 - (.44)} = .75$$

$$e_5 = \sqrt{1 - R_{X_5}^2(X_3 X_2)} = \sqrt{1 - (.38)} = .79$$

$$e_3 = \sqrt{1 - R_{X_3}^2(X_2)} = \sqrt{1 - (.23)} = .88$$

After obtaining these residual paths, the complete and final path diagram for the present study can be shown in FIGURE 4:

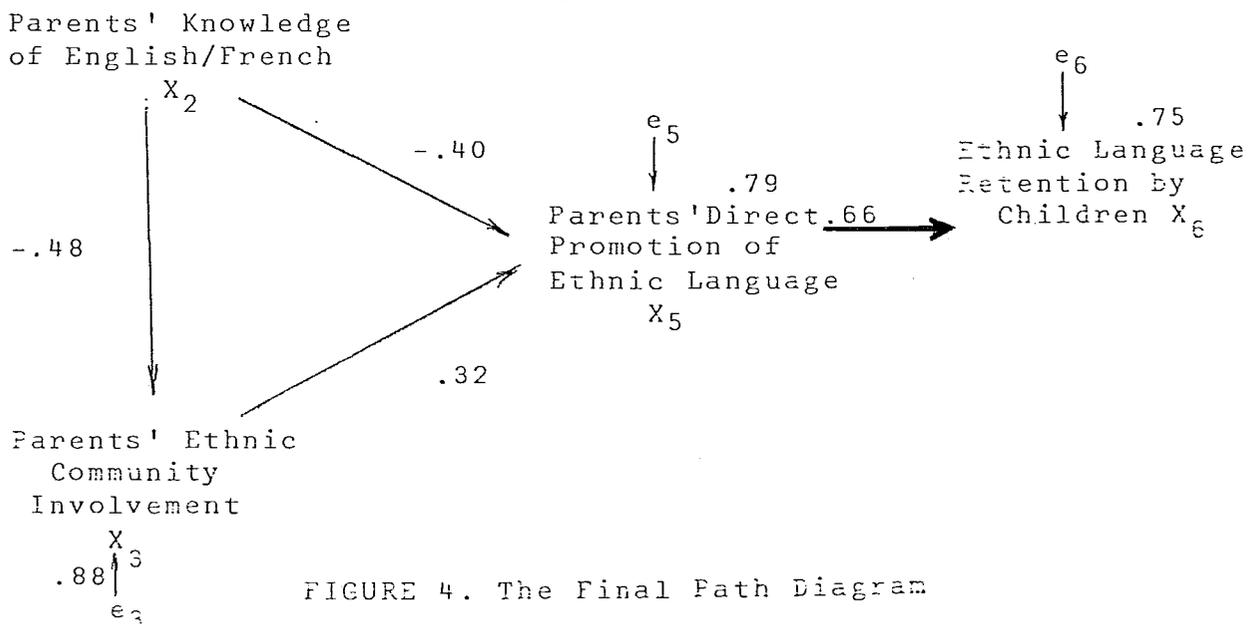
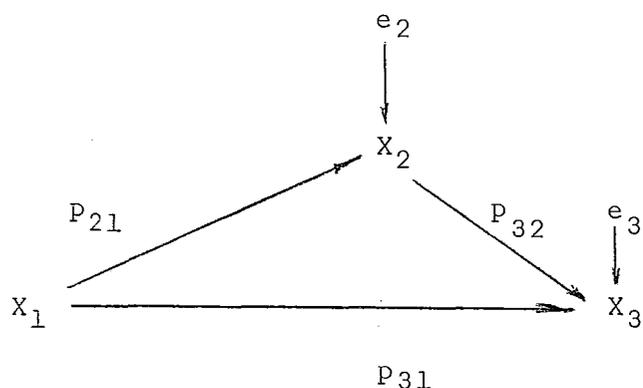


FIGURE 4. The Final Path Diagram

How should the above path analytic results be interpreted? It is conventional for the interpretation of path analytic results to centre around the relationship between correlation coefficients and path coefficients. In the absence of spurious relationship, the correlation coefficient for a pair of variables in a recursive model represents the gross or total effect for the independent variable on the dependent one: the number of standard deviation units change in the dependent variable produced by a change in one standard deviation of the independent variable. In cases where there is one or more intervening variable between the independent and dependent variables, this gross effect can further be decomposed into direct and indirect effects. Take the following simple path diagram as an example:



The path coefficients p_{31} of the arrow running directly from the independent variable X_1 to the dependent variable X_3 can be taken as the direct effect, whereas the indirect effect can be assessed by the formula $p_{32}r_{21}$, where p_{32} is the path coefficient of the path running from X_2 to X_3 , and r_{21} is the

correlation between X_2 and X_1 . The decomposition of the gross effect of X_1 on X_3 can be represented by the following equation:

$$r_{31} = P_{31} + P_{32}r_{21}$$

(gross effect)	(direct effect)	(indirect effect)
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The above operation is very handy for interpreting the present path analytic results. Since there were no other arrows running to the variable ethnic language retention by children from the predictor variables except parents' direct promotion, the only direct effect on ethnic language retention came from parents' direct promotion (excluding effects from unobserved predictor variables represented by e_6). An increase in one standard deviation of the parents' direct promotion index would bring about an increase of .66 standard deviation of the extent of ethnic language retention by children. Or put in another way, 44 per cent ($.66^2 \times 100$) of the total variance of language retention by children was explained by parents' direct promotion.

Although parents' ethnic community involvement and their knowledge of English/French had no direct effects on language retention (b_{63}^* and b_{62}^* not significant), they did, however, exert indirect effects by first influencing parents' direct promotion. The indirect effect of parents' ethnic community involvement on language retention by children was

given by p_{65r53} , which was $(.66)(.62)$ or $.40$. Likewise, the indirect effect of parents' knowledge of English/French on language retention was given by p_{65r52} , which was $(.66)(-.55)$ or $-.36$. It was therefore revealed that parents' ethnic community involvement and their knowledge of English/French cast similar indirect effects on ethnic language retention by children.

Parents' ethnic community involvement had a direct effect on their promotion of ethnic language, as represented by the path coefficient p_{53} which had a value of $.32$. As there is no intervening variable between the two, an indirect effect should be absent. With no indirect effect on promotion of ethnic language, the total effect of parents' ethnic community involvement should manifest itself through the direct effect. However, the correlation between the two variables, which should indicate the total effect, was $.62$, whereas the direct effect shown by p_{53} was only $.32$. This difference $(.62 - .32 = .30)$ can be attributed to the situation where both parents' ethnic community and direct promotion had a common cause knowledge^{of} English/French which spuriously inflated the correlation between them. Since the squared multiple correlation between the dependent variable (direct promotion) and the independent variables (ethnic community involvement and knowledge of English/French) was $.38$, 38 per cent of the total variance of parents' direct promotion of ethnic language was explained by their ethnic community involvement and knowledge of English/French.

Unlike parents' ethnic community involvement, their knowledge of English/French had both direct and indirect effects on their activeness in directly promoting ethnic language. The direct effect was represented by p_{52} , which was $-.40$. The indirect effect went through ethnic community involvement and then to direct promotion, and was given by $p_{53}r_{32}$ which was $(.32)(-.48)$ or $-.15$. The total effect of parents' knowledge of English/French on their direct promotion was therefore equal to $(-.40) + (-.15)$ or $-.55$, which, of course, was exactly the same as the value of the correlation coefficient between the two. It was shown earlier that parents' knowledge of English/French had about the same amount of indirect effect on language retention by children as their ethnic community involvement. But when it comes to the case of influence on direct promotion, knowledge of English/French had a slightly larger effect ($-.55$) than ethnic community involvement ($.32$).

Lastly, a note on the residual paths should be made. A residual path is a representation of the composite effect of all other unobserved predictor variables on a certain dependent variable. The three residual path coefficients in the final path diagram were $.75$ for e_6 , $.79$ for e_5 , and $.88$ for e_3 . That means 56 per cent ($.75^2 \times 100$) of the total variance of ethnic language retention, 62 per cent ($.79^2 \times 100$) of the total variance of parents' direct promotion, and 77 per cent ($.88^2 \times 100$) of the total variance of parents' ethnic community involvement were not explained in the model. These residuals are bigger than the path coefficients of the vari-

ables specified in the model. In the absence of chance fluctuation, large residual path coefficients certainly entail the possibility of having missed other predictor variables in the model. In the present path analysis, the rather big residuals did not necessarily stand problematic. As put by Blau and Duncan (1967: 174), sociologists who are often disappointed in the size of the residual "... seldom reflect on what it would mean to live in a society where nearly perfect explanation of the dependent variable could be secured by studying causal variables like father's occupation or respondent's education."⁶ Indeed, social phenomena are so complex that several independent variables are unlikely to account for most or all changes in a certain dependent variable. Paradoxically, obtaining very small residual path coefficients in a simple path model could be a negative signal, warning that something might have gone wrong (e.g. wrong conceptualization of research problem, measurement errors, and so on). In the present analysis, only parental effects on ethnic language retention by children were assessed. Other domains could certainly exert influence on children's language retention. Therefore, the rather large residual for ethnic language retention by children ($e_6 = .75$) was not surprising. By the same token variations in parents' direct promotion and their ethnic community involvement were not expected to be completely explained by just one or a few other parental variables.

As maintained by Blau and Duncan (1967: 175), what

is relevant about a residual is not its size but whether the unobserved factors it stands for are uncorrelated with the independent variables. Indeed, as long as one is willing to accept the assumption that the unobserved variables or residual terms are uncorrelated with the predictor variables in the model, the size of the residual path coefficients does not become unsettling.

EXAMINATION OF MAJOR ASSUMPTIONS OF PATH ANALYSIS

After the presentation and interpretation of the path analytic results, it is worthwhile to examine the major assumptions of path analysis and see if they hold. The assumptions examined are: linearity, recursiveness, interval level of measurement, homoscedasticity, multicollinearity, and absence of interaction effects.

Linearity

To a certain extent, linearity in relationships can be checked by the examination of error terms, which was presented in p. 82. The ideal pattern of the plot of residuals shown in p. 82 indicates linearity in relationships between variables. As the plots of residuals in the present analysis resembled to a large extent such a desirable pattern, the assumption of linearity was met.

Recursiveness

Theoretical formulation in this study pointed to the test of a recursive model as represented by the hypothesized model in p. 25 (FIGURE 1). Hence, this assumption was met.

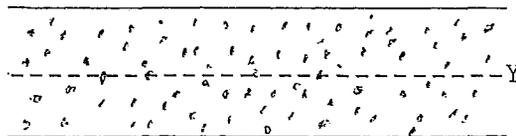
Interval Level of Measurement

Many sociologists tend to shy away from the use of correlational statistics because of the criterion of interval level of measurement that is seldom satisfied by variables in sociological research. Error is bound to occur if ordinal data are treated as interval for the use of correlation methods. However, it has been argued and demonstrated on empirical grounds that treating ordinal data as if they are interval so as to use correlational techniques entails certain advantages which not only compensate the loss (error) but also brings forth a gain in data analysis. Labovitz (1970) maintained that ordinal variables can be treated as if they conform to interval scales because this then allows (i) the use of more powerful, sensitive, better developed and interpretable statistics with known sampling error, (ii) the retention of more knowledge about the characteristics of the data, and (iii) greater versatility in statistical manipulation. After a close examination of some actual data, Boyle (1970) also concluded that interval-scale assumptions are not of crucial importance in path or regression analysis. Wilson (1971) has criticized the weaknesses of ordinal variables,

but pointed out that "although such interval techniques cannot be taken literally when applied to ordinal data, they can nevertheless perform an important heuristic and metaphorical function in the interpretation of social phenomena." (Wilson, 1971: 441) Due to the forceful advocacy from these "pragmatists", the austere criterion of interval scale measurement insisted by those "perfectionists" with "hard science" perspective or philosophy of science over-tone (e.g. Henkel, 1975) was relaxed in the present analysis.⁷

Homoscedasticity

Homoscedasticity refers to the expectation of constant variance in each error term. To test the extent to which this assumption is met, an examination of residuals is helpful. Residuals (deviations of observed Y scores from estimated Y value) **can be plotted against the estimated \hat{Y} value.** The assumption of homoscedasticity of error term is met if the pattern of residuals in the plot appears as follows:



Patterns other than the above one would be indication of the presence of "abnormalities" such as curvilinear relationships between dependent and independent variables, or omission of a constant term from the regression analysis, and so on (Kim and Kohout, 1975b: 341-2 ; Bibby, 1977: 51-4). In the re-

gression for the present analysis, the plots of residuals (not shown in this report) exhibited to a large extent the above desirable pattern (with occasional outliers). Hence, the assumption of homoscedasticity seemed to have been reasonably met.

Multicollinearity

Multicollinearity refers to the existence of very high correlations (e.g. 0.8 to 1.0) among some or all of the independent variables. Should this occur, it becomes difficult to separate the effects of one variable from another, and hence the partial regression coefficients may not be uniquely determined (Kim and Kohout, 1975b: 340-1; Heise, 1970: 44-59). In terms of effects on the significance test of the standardized partial regression coefficients, multicollinearity inflates the standard errors of these coefficients, bringing about diminished t values, which means increasing the probability of type-one error.

In the present analysis, correlations between independent variables did exist. However, out of the ten relationships between pairs of independent variables, only four were statistically significant; and among these four significant correlations, only two exceeded .5 ($r_{53} = .62$ and $r_{52} = .55$ in TABLE 18). Hence, it could be safely asserted that multicollinearity was not serious enough to create problems in the present analysis.

Absence of Interaction Effects

An important assumption to be made in path analysis is that of absence of interaction among the independent variables. This assumption implies that the relationship between the dependent variable and any given independent variable is the same for all values of the other independent variables. Should interactive relationships exist, steps must be taken to consider the interactive effects in the regressions. A widely used approach is to introduce into the regression equation multiplicative terms, which are formed by the products of two or more other terms (Kim and Kohout, 1975a: 372-3). Now the question is: Did the three independent variables in the final path diagram (FIGURE 4) have interactive relationships among them? If yes, were the interaction effects large enough in magnitude to cause faulty estimation of the path coefficients, and to call for the inclusion of multiplicative variables into the regressions? In order to answer these questions, a test of interaction effects among the independent variables in the final path diagram was performed, using Goodman's log-linear system.

The log-linear system for the analysis of contingency tables presented by Goodman (1972a, 1972b) is very useful for testing the main and interaction effects of variables. The Goodman's system is built upon the idea of odds, which refers to the ratio of frequencies for two categories of some variable. The odds are 1.0 when the categories are equal in frequency. In a cross-classification of two vari-

ables, conditional odds or odds ratio are obtained. Conditional odds are the different odds of the categories of a variable in different categories of the other variable. A comparison of these conditional odds by taking their ratio enables one to capture some knowledge of the dependence or association between the two variables. If the ratio of these conditional odds (called relative odds) has a value of 1.0, then the two variables are said to be independent of each other, or, have no association between them. In the case of three-variable cross-classification, relative odds of two of the variables may differ across different categories of the third variable. Should this occur, interaction effects among the variables are present. For the interaction effects to be absent, the ratio of the relative odds have to be 1.0. By the same token, higher-order effects in cross-classifications of more variables are absent only if the higher-order ratios of odds equal 1.0.

Since the different orders of odds are good indicators of the presence or absence of association or interaction effects between variables, it is possible to test a set of actual data by constructing a series of models and then comparing them with the actual data. The idea is that a model can be created in such a way that the variables are forced to be statistically independent. A familiar method is, of course, to find the expected frequency for each cell in the cross-classification. Then this model can be compared with the actual data, and the discrepancy or lack of discrepancy can be used to assess the presence of certain statistical

effects. To achieve this, a chi-square-like statistic can be employed to test whether the discrepancy between the actual data and the constructed independence model is statistically significant or just due to chance fluctuation. The likelihood-ratio chi-square⁸ is commonly used for this purpose. If such a chi-square is non-significant, then the model is said to fit the data. For example, in a cross-classification of, say, four variables (e.g. A,B,C,D), a non-significant chi-square for a model including only a two-variable effect (e.g. AB) would indicate that there is partial association (strength represented by standardized lambda λ^{AB})⁹ between variables A and B, but there are no interaction effects among the variables. On the other hand, if the chi-squares of all models with two-variable effects (e.g., AB, AC, AD, BC, BD, CD, (AB)(CD), (AB)(BC)(CD)) appear significant, then it is a warning that interaction effects may be present. Should this occur, three-variable models (e.g. ABC, ACD, BCD) should be constructed and tested with the actual data to elicit the interaction effects.

Back to the final path diagram in the present analysis. The task is to test whether there were interaction effects among the three independent variables (namely, parents' direct promotion of ethnic language, parents' ethnic community involvement, and parents' knowledge of English/French). Before the test could be performed, all the four variables were dichotomized.¹⁰ For the dependent variable ethnic language retention by children, the categories "not at all"

and "not very well" were collapsed into "low", and "fairly well" and "very well" into "high". For parents' direct promotion of ethnic language, a "low" category was assigned to scores 0 to 2, and a "high" category for 3 to 5. In the case of parents' ethnic community involvement, scores 0 to 6 were collapsed to be "low", and 7 to 9 to be "high". For parents' knowledge of English/French, scores 0 to 3 were categorized as "not good", and 4 to 6 as "good". The distribution of the cell frequencies after the above dichotomization is shown in TABLE 21:

TABLE 21. Cell Frequencies for Cross-Classification of the Variables*

Parents' Knowledge of English/French (D)	Parents' Ethnic Community Involvement (C)	Parents' Direct Promotion of Ethnic Language (B)	Ethnic Language Retention by Children (A)	
			Low	High
Not Good	Low	Low	349 (1)	0 (0)
Not Good	Low	High	0 (0)	2,087 (6)
Not Good	High	Low	349 (1)	1,021 (3)
Not Good	High	High	1,719 (5)	9,133 (25)
Good	Low	Low	3,460 (9)	1,602 (4)
Good	Low	High	432 (1)	1,253 (3)
Good	High	Low	1,124 (3)	1,046 (3)
Good	High	High	0 (0)	2,175 (6)
			7,433 (20)	18,317 (50)

WN = 25,750

UWN = 70

* Bracketed cell frequencies were corrected ones, and were used in the tests. See discussion below.

Before proceeding to the tests, some notes on the cell frequencies must be made. Unbracketed figures in TABLE 21 represent the cell frequencies obtained from the weighted sample. As explained in the last chapter, the sample was weighted according to a scheme devised for the estimation of population parameters. In the case of testing the significance of standardized partial regression coefficients in the above path analysis, it has been noted that using the weighted sample size would tremendously inflate the t values. A correction procedure (explained in APPENDIX ONE) was performed. Likewise, the use of the weighted frequencies here would artificially lead the present test to fall into a disadvantageous position similar to one of those noted by Reynolds (1977: 130): the use of a very large sample may lead to significant chi-square statistics even when magnitudes of the effects are trivial. This is due to the fact that the value of chi-square is directly proportional to the sample size. For this reason, a correction procedure was applied in order to yield cell frequencies appropriate for the present test. The correction procedure was discussed in APPENDIX TWO. The corrected cell frequencies were given by the bracketed figures in TABLE 21.

The presence of zero cells in data would create another difficulty in using log-linear models. In the present data, three zero cells were present. They were, of course, unwelcome. However, they could not be improved by using the

strategy of re-categorizing the data, as the dichotomizing scheme used was already most reasonable. The problem, in fact, has its root in the small size of the actual sample and in the associations among the variables.

But how to get round the problem of zero cells? As pointed out by Reynolds (1977: 131), the routine method is to add a constant to each observed frequency, such as .5 or $1/T$, where T is the total number of cells in the table. As after correction many cell frequencies in TABLE 21 appeared to be small, adding .5 to each cell would be a strong loading which might produce distorted results. Hence, $1/T$ was preferred. There are sixteen cells in TABLE 21, which means that the constant to be added to each cell was $1/16$ or .06. Due to this operation, it should be kept in mind that .06 was added to each bracketed cell frequency in TABLE 21 for the actual tests using log-linear models.

To begin with, models with one-variable effect ("independence" models) were to be tested first. If there occurs any model that fits the data, then associations between the variables may be absent. If all models do not fit the data, there may be association effects, and then models with two-variable effects ("no interaction" models) have to be tested to see if interaction effects are present. If there exist models that fit the data, then interaction effects could be treated as absent or non-significant. TABLE 22 shows the models pertaining to the odds of dependent variables. In order to find out the best fitting model, the tests of all

possible models with one and two effects are presented:¹¹

TABLE 22. Log-Linear Models

Model	Parameters included in Model	Degrees of Freedom	Likelihood Ratio Chi-Square	p-value (significant at .05 level)
1	(A)	14	75.10	.0000
2	(B)	14	81.25	.0000
3	(C)	14	81.25	.0000
4	(D)	14	86.15	.0000
5	(BA)	12	52.82	.0000
6	(CA)	12	63.02	.0000
7	(DA)	12	66.75	.0000
8	(CB)	12	65.18	.0000
9	(DB)	12	57.32	.0000
10	(DC)	12	66.20	.0000
11	(BA)(CA)	10	40.74	.0000
12	(BA)(DA)	10	44.48	.0000
13	(BA)(CB)	10	36.75	.0001
14	(BA)(DB)	10	28.89	.0013
15	(BA)(DC)	9	30.84	.0003
16	(CA)(DA)	10	54.67	.0000
17	(CA)(CB)	10	46.94	.0000
18	(CA)(DB)	9	32.15	.0002
19	(CA)(DC)	10	47.97	.0000
20	(DA)(CB)	9	43.74	.0000
21	(DA)(DB)	10	37.92	.0000
22	(DA)(DC)	10	46.81	.0000
23	(CB)(DB)	10	41.25	.0000
24	(CB)(DC)	10	50.13	.0000
25	(DB)(DC)	10	37.38	.0000
26	(BA)(CA)(DA)	8	32.40	.0001
27	(BA)(CA)(CB)	9	35.73	.0000
28	(BA)(CA)(DB)	8	16.81	.0321
29	(BA)(CA)(DC)	8	25.69	.0012
30	(BA)(DA)(CB)	8	28.40	.0004
31	(BA)(DA)(DB)	9	28.66	.0007
32	(BA)(DA)(DC)	8	24.53	.0019
33	(BA)(CB)(DB)	9	12.82	.1182
34	(BA)(CB)(DC)	8	21.70	.0055
35	(BA)(DB)(DC)	8	8.95	.3466
36	(CA)(DA)(CB)	8	38.60	.0000
37	(CA)(DA)(DB)	8	25.84	.0011
38	(CA)(DA)(DC)	9	44.96	.0000
39	(CA)(CB)(DB)	8	23.01	.0033
40	(CA)(CB)(DC)	8	31.89	.0001

41	(CA)(DB)(DC)	8	19.14	.0141
42	(DA)(CB)(DC)	8	21.85	.0052
43	(DA)(CB)(DC)	8	30.73	.0002
44	(DA)(DB)(DC)	8	17.98	.0214
45	(CB)(DB)(DC)	9	35.57	.0001
46	(BA)(CA)(DA)(CB)	7	27.38	.0003
47	(BA)(CA)(DA)(DB)	7	16.58	.0203
48	(BA)(CA)(DA)(DC)	7	22.69	.0019
49	(BA)(CA)(CB)(DC)	7	20.68	.0043
50	(BA)(CA)(CB)(DB)	7	11.80	.1073
51	(BA)(CA)(DB)(DC)	7	6.87	.4420
52	(BA)(DA)(CB)(DB)	7	12.59	.0827
53	(BA)(DA)(CB)(DC)	7	17.79	.0130
54	(BA)(DA)(DB)(DC)	7	8.72	.2734
55	(BA)(CB)(DB)(DC)	7	7.14	.4144
56	(CA)(DA)(CB)(DB)	7	18.51	.0099
57	(CA)(DA)(CB)(DC)	7	28.89	.0002
58	(CA)(DA)(DB)(DC)	7	16.13	.0239
59	(CA)(CB)(DB)(DC)	7	17.33	.0154
60	(DA)(CB)(DB)(DC)	7	16.17	.0236
61	(BA)(CA)(DA)(CB)(DB)	6	11.57	.0723
62	(BA)(CA)(DA)(CB)(DC)	6	17.67	.0071
63	(BA)(CA)(DA)(DB)(DC)	6	6.87	.3326
64	(BA)(CA)(CB)(DB)(DC)	6	6.12	.4098
65	(BA)(DA)(CB)(DB)(DC)	6	6.91	.3291
66	(CA)(DA)(CB)(DB)(DC)	6	14.33	.0262
67	(BA)(CA)(DA)(CB)(DB)(DC)	5	6.09	.2980
68	(BA)(DCB)	6	6.74	.3455

The significant likelihood-ratio chi-squares of models 1 to 4 indicate that the single-variable effect of each of the four variables could not account for the "state of affairs" in the data. In other words, there could be association or perhaps interaction between the variables. To clarify this, models with two-variable effects were examined. Models 5 to 10 each included only one two-variable effect. All the chi-squares were found to be significant. This was also the case for models that contain two effects (models 11 to 25).

The first model that fitted the data adequately appeared in the group of models containing three effects (models 26 to 45). The model was 33, which had a chi-square value of 12.82 and a p value of .1182. However, there was yet another model in the same group that also fitted the data. That model was 35, which, with the same degree of freedom as model 33 (8), had a chi-square of 8.95 and a p value of .3466. This means that model 35 fitted the data better than model 33 did.

Could models that are even better than model 35 be obtained by adding more two-variable effects? To answer this question, models with four effects (models 46 to 60) were tested. The first model in this group that fitted the data was 50, which had a chi-square value of 11.80 at 7 degrees of freedom and a p value of .1073. To determine whether this model could improve model 35, its chi-square value was subtracted from that of model 35. This yielded a difference of 2.85 ($11.80 - 8.95$), which was not statistically significant at 1 degree of freedom ($df_{35} - df_{50} = 5 - 7 = 1$). This indicates that model 50 did not make a statistically significant contribution to model 35, and hence was not preferred to it. Similarly, other models, (including those with five and six effects) that were also found to fit the data (models 51, 52, 54, 55, 61, 63, 64, 65, and 67) did not significantly contribute to improve model 35. Judging from these results, model 35 could be taken as the one that best fitted the data.

Note that model 35 is not quite the same as the model that best represents the final path diagram (which should be model 55). Model 35 shows that there were partial associations between B and A, D and B, and D and C. Model 55, which luckily also fitted the data, indicates that partial associations existed not only between B and A, D and B, and D and C, but also between C and B. The fact that model 35 is more parsimonious than model 55 suggests that, in the context of the present log-linear models analysis, the strength of the partial association between C and B (standardized $\lambda = .46$) was weak enough to be excluded from model 55 to yield a better fitting model (35). This is not at all unsettling, as the standardized partial regression coefficient for the path from C to B (or X_3 to X_5 in the final path diagram) was the smallest one among others in the diagram ($b_{53}^* = .32$).

Although the model that represents the final path diagram in this study (model 55) can be reduced to a simpler one (model 35), it nevertheless fitted the data, and hence leads to the conclusion that there were no significant interaction effects among the independent variables (which are: parents' direct promotion of ethnic language, parents' ethnic community involvement, and parents' knowledge of English/French).

Lastly, it is interesting to also test a model that supposes the presence of interaction effects among the independent variables in the final path diagram. As A (X_6) was not found to be significantly correlated with C (X_3) and D (X_2),

the interaction effect to be detected would be among B (X_5), C and D. Hence, the model that is to be tested can be written as (BA)(DCB). Model 68 in TABLE 22 shows that it fitted the data. This means that interaction effect did exist among X_5 , X_3 , and X_2 . However, the difference in chi-square values between this model and the best fitting one (model 35) was only 2.21 (8.95 - 6.74), which was not statistically significant at 2 degrees of freedom ($df_{35} - df_{68} = 2$). This reveals that model 68 did not make significant contribution to model 35. In view of this, the interaction effect among the three independent variables could be treated as trivial or non-significant. Indeed, the size of the interaction effect was represented by a standardized lambda value of only -.23, which is small enough to enable the assumption of absence of interaction effects in the present path analysis to be held with more confidence.

VERIFICATION OF HYPOTHESES

Did the findings obtained above verify the various research hypotheses in this thesis? Out of the ten hypotheses, four were supported and the other six were rejected. The supported ones are the first, third, fifth, and seventh hypotheses; whereas those rejected are the second, fourth, sixth, eighth, ninth, and tenth hypotheses (see p. 24-5). To recapitulate, they are stated again here:

The Four Supported Hypotheses

The more active the parents' direct promotion of ethnic language, the greater the extent of ethnic language retention by children.

The greater the parents' ethnic community involvement, the more active their direct promotion of ethnic language.

The better the parents' knowledge of English/French, the less active their direct promotion of ethnic language.

The better the parents' knowledge of English/French, the less their ethnic community involvement.

The Six Rejected Hypotheses

The stronger the parents' ethnic identification, the more active their direct promotion of ethnic language.

The greater the parents' ethnic community involvement, the stronger their ethnic identification.

The better the parents' knowledge of English/French, the weaker their ethnic identification.

The longer the parents' length of time in Canada, the weaker their ethnic identification.

The longer the parents' length of time in Canada, the less their ethnic community involvement.

The longer the parents' length of time in Canada, the better their knowledge of English/French.

As can readily be observed, the supported hypotheses correspond to the final path diagram. Since parents' ethnic identification and parents' length of time in Canada were eliminated due to their non-significant relationships with other variables, all hypotheses involving these two variables turned out rejected.

FOOTNOTES

1. Recursiveness is not a necessary assumption in path analysis. One could estimate path coefficients in a non-recursive model. In this **study**, a recursive model is assumed. For an example of estimating procedures in a non-recursive model, see, for example, Henry and Hummon (1971). Also, recursiveness is important only if one is estimating by ordinary least square method.
2. A note on the test of significance of correlation coefficients needs to be made here. As the sample is a weighted one, the chance of getting significant correlation coefficients is artificially increased, due to the spurious increase in the sample size. In view of this, a correction procedure has to be performed so that the significance of r coefficients could be more realistically determined. Notice that in the bivariate case, the simple r coefficient is just equal to the standardized partial regression coefficient b^* . Hence, testing the significance of r coefficients for pairs of variables is analogous to testing that of b^* coefficients. But the use of weighted sample also necessitates a correction to be taken in the test of significance of b^* coefficients. As the correction procedure for the test of significance of b^* coefficients has already been devised (discussed in APPENDIX ONE), the correction for that of r coefficients is achieved by using the corrected significance levels of b^* coefficients as indicators of those of r coefficients.
3. The t values for b^* coefficients in the regressions were obtained from weighted data, and therefore have to be corrected. For the discussion on the correction procedure for the test of significance of b^* coefficients, see APPENDIX ONE.
4. From the formula for the calculation of the standard error of b^* coefficient shown by Equation (1) in p. 120, it is clear that the standard error is inversely proportional to $(1 - R^2)$, where R^2 is the squared multiple correlation. If predictor variables that yield non-significant b^* coefficients are included in the regressions, the R^2 would be larger than that obtained when such variables are not included. Therefore, the inclusion of such variables brings about an inflation of the R^2 , which reduces the value of $(1 - R^2)$. Consequently, the standard error of the b^* coefficient is inflated.

5. The correction for t values was done in the same manner as that in the first regressions. See APPENDIX ONE for discussion on the correction procedure for the test of significance of b* coefficients.
6. Blau and Duncan were studying the causal effects of father's education, father's occupation, respondent's education, and respondent's first job on respondent's occupation in 1962.
7. The terms "pragmatists" and "perfectionists" were used by Lamy (1976: 86-8) in his discussion on the same issue.
8. For the formula of the likelihood-ratio chi-square, see Goodman (1972a: 1049).
9. For the formula of the standardized lamda, see Goodman (1972a: 1048).
10. Because of the small actual sample size, dichotomization was preferred in the present analysis.
11. There could be four single-variable models, namely, (A), (B), (C), and (D). The number of possible models containing two-variable effects is given by the formula $\sum_{i=1}^n C_{ri}$, where n is the largest number of possible two-variable effects in a model (=6), C stands for the operation of combination, r is the number of two-variable effects taken at each time of the combination, and ${}_n C_r = n!/r!(n-r)!$. The total number of models with two-variable effects is then ${}_6 C_1 + {}_6 C_2 + {}_6 C_3 + {}_6 C_4 + {}_6 C_5 + {}_6 C_6 = 6 + 15 + 20 + 15 + 6 + 1 = 63$. Together with the four single-variable models, the total number of possible models is $63 + 4 = 67$.

CHAPTER FOUR:

SUMMARY AND DISCUSSION

THE RESEARCH PROBLEM AND SOURCE OF DATA

This thesis examines the effects of parents' influence on ethnic language retention by children in five Chinese communities in urban Canada. The study of ethnic language retention by children is important because a review of related literature suggests that ethnic language has a significant bearing on the survival and continuity of the ethnic community. Besides providing an efficient means of communication and preserving the ethnic culture, ethnic language also serves as an agent that welds together people in the ethnic group and fosters ethnic identity, solidarity and integration. Ethnic language loss is likely to be accompanied by loss of ethnic culture, weakening of ethnic identity and enfeebling of ethnic integration, and hence is a threat to the vitality of the ethnic community.

Ethnic language loss in the second and third generation is a well-known phenomenon in North American societies. Although ethnic language loss shows marked rapidity, it is important to pay attention to forces which contribute to ethnic language retention by counteracting the erosion of ethnic language by the dominant culture. In Canada, ethnic

language retention has become an official effort. To contribute to the study of ethnic language retention in Canada, this thesis sets its task to be an examination of a specific ethnic language retaining agent - the family. This thesis is meant to be a pioneer effort in revealing, by path analytic method, the magnitude of the effect of parents' direct promotion of ethnic language on language retention by children, in the context of Chinese in urban Canada. Four other parental variables were introduced into the analysis, namely, parents' ethnic identification, ethnic community involvement, knowledge of English/French, and length of time in Canada. They were hypothesized to affect parents' activeness in directly promoting ethnic language.

Data for the thesis were extracted from the 1973 Non-Official Languages Survey, which provides a rich source of survey on ethnic language and related issues of ten ethnic groups in five metropolitan cities in Canada. The ten ethnic groups were Chinese, Dutch, German, Greek, Hungarian, Italian, Polish, Portuguese, Scandinavian, and Ukrainian. The five cities included Montreal, Toronto, Winnipeg, Edmonton, and Vancouver. For the purpose of this thesis, the Chinese subsample was analysed, which contained 151 number of cases. A weighting scheme was devised by the investigators of the Survey in order that estimates of characteristics of the population in the five cities could be made. The average weighting factor for Chinese was 381.7, and the weighted sample became 57,635. As this thesis examines parental influence on

ethnic language retention by children, only those Chinese respondents who were parents and who had at least some knowledge of Chinese language were selected for analysis. The selected sample size was then reduced to 89 (weighted N = 33,557), which is adequate for regression analysis.

Path analysis was employed to assess the direct and indirect effects of the independent variables on dependent ones. A test of the major assumptions of path analysis was also carried out. It was found that to a large extent the assumptions were met.

IMPORTANCE OF THE FAMILY IN ETHNIC LANGUAGE RETENTION

The main dependent variable--ethnic language retention by children--was measured by the parents' report on the ethnic language speaking ability of their children. This was found to be highly correlated with parents' direct promotion of the ethnic language ($r=.66$). Hence, the hypothesis of positive relationship between the two was supported.¹ Moreover, the other four parental variables did not make significant contributions to language retention, implying that direct effect came only from parents' direct promotion. This result, the author believes, is of crucial importance to the crux of the matter. The family domain itself (or, specifically, parents' direct promotion of the ethnic language) explained 44 per cent of the total variance of ethnic language retention by children. This indicates that the family is a very important (perhaps the only important) ethnic language

retaining agent, at least among Chinese in Canada. This finding has important implications on ethnic language ^{retention} efforts.

It seems to be a widely-held idea that the most efficient way to help children learn and retain ethnic language is to organize ethnic schools. In the United States, for example, the ethnic school is the most active language retention institution in the majority of ethnic communities (Fishman, 1966b: 393). While it is impossible to infer from the present findings the effectiveness of ethnic schools in promoting ethnic language retention, reports about ethnic schools do not seem to give a very positive appraisal. Fishman (1966b: 393) pointed out that mother tongue teachers in ethnic schools rarely view themselves as powerful factors in determining language retention outcomes. They feel that pupils are not very motivated to learn the ethnic language. Fong (1968: 116) also described that a large number of Chinese youths in San Francisco dislike going to Chinese schools because they are tired before they attend the classes in the evenings. Being unable to realize the value of learning Chinese, they attend Chinese classes just because their parents want them to. Reitz (forthcoming) contends that ethnic schools, like other conditions outside home, have little if any effect on ethnic language retention. The present analysis indicates that if we wish to resort to some ethnic language retaining agent other than ethnic schools, the appropriate one is the family.

It does not mean that the family has not been playing

any role in ethnic language retention. What is noted here is that many parents seem to have a misconception that ethnic schools are the most important (if not the only) places for children to learn and use the ethnic language. This misconception has always led them to rely heavily on ethnic schools for their children's ethnic language learning. It is almost always the case that this over-reliance on ethnic schools shields them from consciously taking an active role in directly promoting the ethnic language themselves at home. The author's observation on some Chinese in Hamilton can serve as an illustration. The Chinese Cultural Association in Hamilton² is run by a committee whose members are very keen on promoting Chinese cultural activities in Hamilton. The Association has also organized Chinese classes for Canadian-born Chinese in Hamilton. However, the author noticed that when these "cultural leaders" among Chinese in Hamilton talked to their children, they mostly used English. It must as well be pointed out that most of their children were sent to the Chinese classes. This example shows that parents may be active in indirect promotion (such as sending children to ethnic schools), but may overlook the effect of their direct promotion efforts. The findings in this thesis draw our attention to the fact that parents' conscious, active efforts in speaking the ethnic language to children, insisting on reply from children in the ethnic language, and, if their knowledge of the ethnic language allows, teaching them the ethnic language, would

exert a great impact on their children's language retention.

Significant as it is, the family accounts for only 44 per cent of the total variance of language retention by children. Without doubt, ethnic schools and other agents would contribute to explain a considerable portion of the remaining variance. Moreover, it should be noted that although teaching children the ethnic language could be one of parents' direct promotion efforts, the effect largely focuses on the aspect of speaking ability of ethnic language. For effects on other aspects such as writing and reading, chances are that ethnic schools could make the most important contributions. For these reasons, the family and ethnic schools (and other possible domains) should be complementary agents of language retention. Emphasizing only one or a few agents would not likely yield sufficiently satisfactory results. Children's motivation to learn ethnic language in ethnic schools could be more easily inculcated if parents use the ethnic language more often at home. How can the parents expect their ^{children} to take an interest in learning the ethnic language if the children do not find it useful even at home? Besides, a language would not be retained in large measure if it is learned but not often used. Ethnic schools teach children the ethnic language, but, due to limited time of meeting, they do not provide a good chance for children to practise it. The family should offer a great deal of opportunities for children to use the ethnic language in daily life.

FACTORS CONDUCTIVE TO PARENTS' DIRECT PROMOTION OF ETHNIC LANGUAGE

In this thesis, four other parental variables were examined to see if they affected parents' direct promotion of ethnic language. They were parents' ethnic identification, their ethnic community involvement, their knowledge of English/French, and their length of time in Canada. Out of these four variables, it was found that only parents' ethnic community involvement and their knowledge of English/French had effects on their direct promotion. Together, they explained 38 per cent of the total variance of direct promotion. The hypotheses of positive relationship between ethnic community involvement and direct promotion, and negative relationship between knowledge of English/French and direct promotion were therefore supported. While these two factors are certainly important to parents' activeness of direct promotion, their relatively smaller coefficient of determination ($R^2=.38$) signifies that other factors have yet to be explored; and, of course, they would include other parental and non-parental ones.

KNOWLEDGE OF THE DOMINANT LANGUAGE AND ETHNIC COMMUNITY INVOLVEMENT

The hypothesis that the better the parents' knowledge of English/French, the less their ethnic community involvement was supported. Knowledge of English/French accounted for

23 per cent of the total variance of ethnic community involvement. Similarly, the small coefficient of determination suggests the necessity to explore other factors that may affect ethnic community involvement.

ETHNIC IDENTIFICATION: A DETERMINANT OF ETHNIC LIFE?

It was a somewhat unexpected finding that parents' ethnic identification had no significant relationships with other variables in the analysis. No hypotheses involving ethnic identification gained any support from the data. It is both interesting and important to ask: Why, among Chinese in Canada, does ethnic identification not have effects on direct promotion of ethnic language? And why is it not affected by ethnic community involvement, knowledge of English/French, or length of time in Canada?

Before answers for the above questions are attempted, it must be pointed out that findings on the relation between ethnic identification and language retention efforts have not always been consistent. Although most research has shown that ethnic identification and use of ethnic language are strongly associated, some findings indicated the absence of significant relationship between the two. Glazer and Moynihan (1963), for example, found that some form of ethnic identification is still often reported by many American immigrants who no longer possess a good command of their ethnic mother-tongue. Fishman (1966b: 402-6) noted that ethnicity

has become increasingly unable to support language retention in American society. In Canada, findings of the Non-Official Languages Survey (O'Bryan, Reitz and Kuplowska, 1976) also indicated that emotional support for ethnic language retention is evident no matter how people define themselves ethnically.

Clearly, the results of this analysis belong to this body of research findings. A strong ethnic identification (e.g. defining oneself as a Chinese) is not a necessary condition for active direct promotion of ethnic language. On the other hand, a weak ethnic identification (e.g. defining oneself as a Canadian) does not entail an inertia in direct promotion. This finding, in effect, does not add anything new to what has been depicted by O'Bryan, Reitz and Kuplowska (1976: 172) who, after examining the relationship between ethnic identification and support for language retention, remarked that:

...in the mind of many ethnic group members, to become a true Canadian is NOT necessary to become Anglocized or Francocized.(sic) Their definition of a Canadian does not stipulate abandonment of one's cultural traditions and complete conformity to the North American cultural norm.

However, the finding in this thesis makes a further point: not only is ethnic identification independent of the support for ethnic language retention, it is also independent of the actual extent of direct promotion of ethnic language. Of course, this is only evident among the Chinese. Realizing that no mention can be made about other ethnic groups until

an analysis is performed, the author would speculate that similar relationship between ethnic identification and direct promotion of ethnic language exists among other ethnic groups.

Having elicited the above important characteristics of ethnic identification in the Canadian society, the absence of significant relationships between ethnic identification and ethnic community involvement, knowledge of English/French, or length of time in Canada becomes apparent. One who is heavily involved in ethnic community activities does not encounter any conflict in defining himself as a hyphenated-Canadian or a Canadian. Likewise, one's ethnic identification is not dependent upon one's knowledge of English/French or length of time in Canada.

LENGTH OF TIME IN THE HOST SOCIETY: A CATALYST OF ASSIMILATION?

Like ethnic identification, length of time in Canada was also found to have no significant relationships with other variables in the analysis. All the hypotheses concerning this variable were therefore rejected. Length of time in Canada, the time factor, was introduced into the analysis because it was thought that relationships between direct promotion and language retention by children, and those between the parental variables themselves, might vary with time. It was originally hypothesized that the degree of cultural assimilation--the absorption of the cultural behaviour patterns of the host society (Gordon, 1961: 279)--would increase with the length of time in Canada. An increase in cultural assimi-

lation would entail an increase in the knowledge of English/French, a decrease in ethnic community involvement, a weakening of ethnic identification, and a decrease in activeness of direct promotion of ethnic language. The refutation of these hypotheses apparently drives us to conclude that the degree of cultural assimilation of Chinese immigrants remains rather stable over time. This finding is not necessarily annoying. Chinese communities are among the most cohesive in Canada.³ For those who did not possess the capabilities to assimilate to the Canadian society (e.g. the ability to speak English/French) during their first arrival at Canada, a cohesive ethnic community makes their social and economic life possible. But strong attachment to the ethnic community would insulate them from the wider society and palliate the necessity to equip themselves with the abilities to assimilate to the Canadian society. Consequently, no significant increase in their degree of assimilation could occur as time goes by. As for those who already possessed the ability to assimilate to the Canadian society when they first came, they easily got assimilated and hence maintain a higher and stable degree of assimilation. As a result, the degree of assimilation of Chinese immigrants with different assimilating abilities remains rather stable over time.

If cohesiveness of the ethnic community is a factor that prohibits, or at least delays, those ethnic members with low capabilities to assimilate from getting increasingly as-

simulated to the host society, then those ethnic groups that form less cohesive ethnic communities should exhibit increases in the degrees of assimilation over time. A comparison of Chinese with other ethnic groups in this regard is therefore an enlightening avenue for future research.

EPILOGUE

A summary of the research problem, the source of data, and the results of this thesis has been presented above. Discussions on the various findings have also be laid out. Before this thesis ends, some brief notes on the limitations of the analysis and some suggestions for future research should be made here.

Limitations of the Thesis

1. This thesis is a secondary analysis of data from the 1973 Non-Official Language Survey. Therefore, it suffers from those defects inherent in the Survey. As an overall discussion on the methodological loopholes of the Survey has been made by Darnell and Vanek (1976), only two major methodological drawbacks relevant to this thesis will be mentioned here:
 - a) Self-report data: The self-report method may affect the reliability of the data. Firstly, parents' subjective evaluations on (i) their children's Chinese speaking ability, (ii) the proportion of time they

speak to their children in Chinese, insist on reply in Chinese from the children, and teach children Chinese, (iii) how often they visit Chinese friends and read ethnic publications, and (iv) their knowledge of English/French and Chinese would quite likely have varied because of the absence of objective criteria for evaluation. Secondly, inaccurate responses on length of time in Canada might have been given by parents who did not remember well their age when they moved to Canada. Thirdly, the interview situation might also have affected the reliability of the responses. Parents might feel more comfortable in front of the interviewer (a stranger) to report a better Chinese speaking ability of their children, a greater activeness of their direct promotion of Chinese, a stronger ethnic identification, a larger extent of ethnic community involvement, or a better knowledge of English/French and Chinese. Had any of the above tendencies occurred, the reliability of data and the validity of measurement would have been undermined.

- b) Language of interview: Interviews were conducted in English or French except in the case that respondents did not have adequate knowledge of English/French. Multilingual interviews were used where necessary. Out of the 151 interviews of Chinese respondents, only 35 (23.1 per cent) were conducted in Chinese.

The others were conducted either in English or French, or were multilingual. It should be pointed out that the language of the interview determines much of the response. In the ethnic language, respondents were more likely to report stronger ethnic identification, greater activeness of direct promotion, learger extent of language retention by their children, and so on. On the other hand, in interviews conducted in English or French, respondents might be more relaxed in reporting greater degrees of assimilation abilities such as weaker ethnic identification and better knowlwdge of English/French. Also, they might be less uncomfotable in reporting a low degree of ethnic language retention by children, their inertia in direct promotion, a small extent of ethnic community involvement, and a limited knowledge of Chinese.

2. The path model that was estimated in this thesis was a recursive one. A recursive model assumes only one-way causation between pairs of variables. However, it would not be adequate to use recursive models to depict complex relationships between social phenomena. Distorted and biased results would likely be obtained. Also, the time factor has not been taken into account. Some variables might have immediate effects whereas the effects of some variables on others might require longer periods of time to realize. The introduction of the dimension of time in a causal model could help describe or explain what

happens during the course of the equilibrating process. To specify lag periods, dynamic formulation of the relationships between variables should be made (see, for example, Blalock, 1970: 287-9; Heise, 1975: 206-237).

3. In this thesis, only the effect of parental influence in the family domain on the retention of ethnic language speaking ability of children was examined. A fuller comprehension of the phenomenon of language retention by children cannot be attained until other aspects of language retention (such as writing and reading) and the effects of other domains (such as ethnic schools) are studied. Apart from the above-mentioned inadequacy, the thesis also suffers from the failure of bringing into the analysis the children's attitudes towards learning ethnic language. This motivational factor might also have crucial effects on their extent of language retention.
4. Since parents' direct promotion of ethnic language has important effect on language retention by children, factors conducive to direct promotion should have been more thoroughly studied. This study has examined only four parental variables that might affect direct promotion. Better accounting of the parents' direct promotion could have been given if more parental and non-parental variables had been introduced in the analysis.

5. In studying ethnic language retention by children, only the oldest child of each respondent was involved. Therefore, strictly speaking, the direct and indirect effects of parental influence cannot be generalized to other siblings.
6. It was unfortunate that the age of children was not asked in the interview. There might be differential effects of parental influence on language retention among different age groups of children.
7. For the variable parents' ethnic community involvement, only ethnic friends, ethnic visits, and reading ethnic publications were used as indicators. While these indicators are certainly relevant ones, it was unfortunate that participation in ethnic organizations was not asked in the interview. The author believes that this could be an important and powerful indicator of ethnic community involvement.
8. This thesis only examined the Chinese subsample of the Non-Official Language Survey. Moreover, the Survey only covered ethnic groups in Montreal, Toronto, Winnipeg, Edmonton, and Vancouver. Therefore, generalizability is only limited to the Chinese in the five metropolitan cities. Comparison between Chinese and other ethnic groups, and between Chinese in urban and rural Canada cannot be done.

9. The Non-Official Languages Survey was launched in 1973. While analysis of the data can elicit a clear picture of the situation in 1973, generalization of the results to the present-day situation necessarily entails a certain amount of risk.
10. As a final remark, it should be stated that the small actual sample size might not ensure a sufficient probability of accuracy in inference to the population. Although a large sample size is not in itself a guarantee of accuracy of results (Moser and Kalton, 1971: 146), and although to a large extent the weighting scheme has improved the accuracy in estimating population parameters, it is essential that the results should not be treated as "hard facts". Rather, they serve well as a preliminary assessment which invites verification from further large-scale surveys on Chinese in Canada.

Suggestions for Future Research

Most of the limitations of the present study mentioned above serve well to provide avenues for future research:

1. One of the most salient suggestions for future research of course would be the study of effects of other domains on ethnic language retention by children, and the comparison of the strengths of other domains to that of the family. Other aspects of language ability such as writing and reading should be incorporated into the measure-

ment of ethnic language retention. Moreover, children's motivation to learn the ethnic language and factors related to this should also be taken into consideration.

2. It would be a good idea to collect age-specific data of children in measuring their extent of ethnic language retention. Comparison of the rates of ethnic language retention among various age-groups of children could yield a clearer picture of the differential effects of parents' direct promotion.
3. Besides comparing the effects of parents' direct promotion among various age-groups of children, it is also interesting to compare parental influence among different siblings in the family. The oldest child may show marked differences in the extent of language retention from that of the youngest child in the family.
4. More parental and non-parental factors should be studied in order that the activeness of parents' direct promotion could be even better predicted.
5. In measuring ethnic community involvement, participation in ethnic organizations should be utilized as an indicator. It is believed that this could be an important aspect of ethnic community involvement.
6. It was found that length of time in Canada is not related to knowledge of English/French, ethnic community involvement, nor ethnic identification among Chinese in

Canada. A rigorous study of assimilation of Chinese and other ethnic groups in Canada should be attempted.

7. It was also found that ethnic identification of Chinese in Canada did not cast significant influence on their ethnic life. The impact of ethnic identification on ethnic life among other ethnic groups in Canada should be studied in order to gain deeper understanding of the dynamics of ethnic identification in the Canadian context.
8. In formalizing path models for the study of parental influence on language retention, attention should be drawn to the possibility of reciprocal flow of causation between pairs of variables. A case in point is that parents' activeness in directly promoting the ethnic language may also be influenced by the extent the children have retained the ethnic language. Parents may use the ethnic language more frequently with children who have a good knowledge of it. Estimating non-recursive models reduces the likelihood of oversimplifying the relationships between social phenomena. Also, a research designed to include measurements of variables at two or more time periods would allow the time dimension to be incorporated into path analysis.
9. Since the Non-Official Languages Survey provides data of nine other ethnic groups in Canada, it would be interesting to perform the same analysis on other ethnic

groups to yield group-by-group comparison of the effects of parental influence on ethnic language retention by children.

FOOTNOTES

1. Doubts may be cast on the non-spuriousness of the relationship between parents' direct promotion of ethnic language and ethnic language retention by children if one considers the fact that children who are not Canadian-born could have learned the ethnic language before their arrival at Canada. These non-Canadian-born children might have a high rate of language retention no matter whether their parents still use the ethnic language with them in Canada or not. On the other hand, the rate of language retention by Canadian-born children might be low regardless of the activeness of parents' direct promotion. If this had been the case, then the correlation between parents' direct promotion and children's retention would have been spurious, with "place of birth" being a possible common cause. To test whether this was the case, some control measure must be applied. It is unfortunate that place of birth of children was not asked in the interview schedule, and so it could not be used as a test factor. However, a close approximation to this factor was able to be constructed. It is safe to postulate that the probability for children to be Canadian-born would be greatest among parents who were young and whose lengths of time in Canada were long. Conversely, children of parents who were old and whose lengths of time in Canada were short would have the greatest probability of being born outside Canada. Hence, the variables respondent's age and length of time in Canada can be combined to form a test variable. It was found that after controlling for respondent's age and length of time in Canada simultaneously, the partial correlation between parents' direct promotion of ethnic language and ethnic language retention by children was .65, which is negligibly smaller than the original correlation ($r=.66$). Judging from this result, it can be concluded that the effect of parents' direct promotion on ethnic language retention by children was not affected by whether the children were Canadian-born or not.
2. For a brief description of the Association, see Cheung (1978).
3. For a ranking of cohesiveness of some ethnic communities in Canada, see Reitz (forthcoming). For discussions on the formation and functions of ethnic organizations, clan relations, and so on in Chinese communities in Canada, see for example, Lai (1972, 1975), Sedgwick and Willmott (1974), Voisey, (1970), and Willmott (1970).

APPENDIX ONE:

Correction Procedure for the Test of
Significance of b* Coefficients

The standardized error of the standardized partial regression coefficient $b_{YX_1}^*$ in a partial regression of Y on X_1 controlling for $X_2 \dots X_n$ is given by the equation

$$S.E.(b_{YX_1}^*) = \sqrt{\frac{\sigma_\varepsilon^2}{\sum (X_{1i} - \bar{X}_1)^2 (1 - R_{X_1 X_2 \dots X_n}^2)}} \quad (1)$$

where σ_ε^2 is the unexplained variance of Y: $\sum (X_{1i} - \bar{X}_1)^2$ is the sum of squared deviation of X_1 from the mean \bar{X}_1 ; $R_{X_1 X_2 \dots X_n}^2$ is the squared multiple correlation between Y and the independent variables. Since $\sum (X_{1i} - \bar{X}_1)^2 = \sigma_{X_1}^2 (N - k)$, where $\sigma_{X_1}^2$ is the variance of X_1 ; $(N - k)$ is the degrees of freedom; N is the sample size; and K is the number of independent variables plus 1, Equation (1) becomes

$$S.E.(b_{YX_1}^*) = \frac{\sigma_\varepsilon^2}{\sigma_{X_1}^2 (N - k) (1 - R_{X_1 X_2 \dots X_n}^2)} \quad (2) \quad (2)$$

From Equation (2), it can be seen that the standard error of b^* is inversely proportional to the sample size. The larger the sample size, the smaller the standard error of b^* . Since the value of the t -statistic is given by the formula

$$t = \frac{b^*}{S.E.(b^*)}$$

a larger sample size therefore will decrease the standard error of b^* and then increase the t value. An increase in t value, of course, will increase the probability for b^* to become statistically significant.

The sample in this study is a weighted one. This means that the total number of cases is greatly increased in the computation of the standard errors of b^* s, bringing about greatly contracted standard errors of the b^* s which greatly inflated the t values. But in actuality there is not such a (weighted) total number of cases in the sample. Therefore, a correction factor should be added to Equation (2) so as to minimize the inflation of the t values. A method (proposed by Dr. C. L. Jones) is to multiply Equation (2) by the ratio of the degrees of freedom of the weighted sample ($N_w - k$) and that of the unweighted sample ($N_{uw} - k$), so that the degrees of freedom of the weighted sample in Equation (2) is replaced by that of the unweighted one. In so doing, Equation (2) becomes

$$\begin{aligned} \text{S.E.}^2(b^*_{YX_1}) \frac{N_w - k}{N_{uw} - k} &= \frac{\sigma_z^2}{\sigma_{X_1}^2 (N_w - k) (1 - R_{X_1 X_2 \dots X_n}^2)} \cdot \frac{N_w - k}{N_{uw} - k} \\ &= \frac{\sigma_z^2}{\sigma_{X_1}^2 (N_{uw} - k) (1 - R_{X_1 X_2 \dots X_n}^2)} \end{aligned}$$

Now a corrected standard error is obtained which is represented by the formula

$$S.E.(b_{YX_1}^*)_{\text{corrected}} = \sqrt{S.E.^2(b_{YX_1}^*) \cdot \frac{N_w - k}{N_{uw} - k}}$$

and the corrected t value is given by

$$t_{\text{corrected}} = \frac{b^*}{S.E.(b_{YX_1}^*)_{\text{corrected}}}$$

In actual computation, the corrected t can be obtained by just dividing the original t value by the square root of the ratio of the degrees of freedom of the weighted sample and that of the unweighted sample. That is,

$$\begin{aligned} t_{\text{corrected}} &= \frac{b^*}{S.E.(b_{YX_1}^*)_{\text{corrected}}} \\ &= \frac{b^*}{\sqrt{S.E.^2(b_{YX_1}^*) \cdot \frac{N_w - k}{N_{uw} - k}}} \\ &= \frac{t_o}{\sqrt{\frac{N_w - k}{N_{uw} - k}}} \end{aligned}$$

where t_o is the original t calculated from the weighted sample size.

APPENDIX TWO:

Correction Procedure for Cell Frequencies
in the Test of Interaction Effects Us-
ing Log-Linear Models

As explained in the earlier part of this report, different weight factors were assigned to respondents in different cities (TABLE 1 in p. 33). In order to correct for the sample size so that a realistic operation can be performed using the log-linear system, a certain factor could be multiplied to the weighted distribution of the variables. An appropriate method (suggested by Dr. C. L. Jones) is to make the multiplying factor equal the ratio of the unweighted and weighted sample sizes. The weighted total number of cases in the four variables cross-classification shown in TABLE 21 is 25,750, and the corresponding unweighted total number of cases is 70. Hence, each (unbracketed) weighted cell frequency in TABLE 21 is multiplied by $70/25,750$ or $.003$. This procedure yields the bracketed cell frequencies in TABLE 21. The point is to get back to the actual number of cases in the sample, (which affects chi-square), while at the same time retaining the advantages of "post-stratification" of the sample.

BIBLIOGRAPHY

- Andracki, S. "The Immigration of Orientals into Canada with Special Reference to Chinese", Ph.D. Dissertation, McGill University, 1958.
- Arsenian, Seth. "Bilingualism in the Post-War World", Psychological Bulletin, 42 (February 1945), 65-68.
- Baureiss, Gunter. "The Chinese Community of Calgary", Canadian Ethnic Studies, 3 (June 1971), 43-55.
- Bibby, J. "The General Linear Model: A Cautionary Tale", in C. A. O'Muircheartaigh and C. Payne (eds.) The Analysis of Survey Data, Vol. 2: Model Fitting, London: John Wiley and Sons, 1977, 35-80.
- Blalock, Hubert M. Jr. Causal Inferences in Nonexperimental Research, Chapel Hill: University of North Carolina Press, 1964.
- "The Formalization of Sociological Theory" in J. C. McKinney and E. A. Tyriakian (eds.) Theoretical Sociology, New York: Appleton-Century-Crofts, 1970, 272-300.
- (ed.) Causal Models in the Social Sciences, Chicago: Aldine Publishing Company, 1971.
- Blau, Peter and O. D. Duncan. The American Occupational Structure, New York: John Wiley and Sons, 1967.
- Bloomfield, Leonard. Language, London: Compton Printing Limited, 1933.
- Bossard, James H. S. "The Bilingual as a Person--Linguistic Identification with Status", American Sociological Review, 10 (December 1945), 699-709.
- Boyle, Richard P. "Path Analysis and Ordinal Data", American Journal of Sociology, 75 (1970) 401-480.
- Breton, Raymond. "Institutional Completeness of Ethnic Communities and the Personal Relations of Immigrants", American Journal of Sociology, 70 (1964), 193-205.

- Breton, Raymond and Maurice Pinard. "Group Formation Among Immigrants: Criteria and Processes", Canadian Journal of Economics and Political Science, 26 (1960), 465-477.
- Bright, William. "Language--IV: Language and Culture", in David L. Sills (ed.) International Encyclopedia of the Social Sciences, 9 (1968), 18-22. U.S.A.: Crowell Collier Macmillan, Inc.
- Bronsdon, Madeline. "Cohesion and Competition: Family Structure in Eleven Chinese Households", M.A. Thesis, University of British Columbia, 1966.
- Carrol, John B. Language and Thought, New Jersey: Prentice-Hall, Inc., 1964.
- Chen, Tien-fang. "Oriental Immigartion in Canada", Ph.D. Dissertation, University of Toronto, 1926.
- Cheung, Yuet-wah. "Internal Heterogeneity, External Dominance, and the Incompleteness of the Chinese Community in Hamilton: A Hypothetical Assessment", Unpublished Paper, 1978.
- Cronbach, Lee J. "Coefficient Alpha and the Internal Structure of Tests", Psychometrika, 16 (September 1951), 297-334.
- Darnell, Regna and Anthony L. Vanek. "Some Reflections on the Non-Official Languages Survey", Canadian Ethnic Studies, 8 (1976), 74-82.
- Davidson, Anne M. "An Analysis of the Significant Factors in the Patterns of Toronto Chinese Family Life as a Result of the Recent Changes in Immigration Laws", M.S.W. Thesis, University of Toronto, 1952.
- Dominion Bureau of Statistics. Occupational Classification Manual, Census of Canada, 1971, Vol. 2, Canada: Ministry of Industry, Trade, and Commerce, 1971.
- Duncan, O. D. "Path Analysis: Sociological Examples", American Journal of Sociology, 72 (July 1966), 1-16.
- and Stanley Lieberman. "Ethnic Segregation and Assimilation", American Journal of Sociology, 64 (January 1959), 364-374.
- Fishman, Joshua A. "Language Maintenance and Language Shift as a Field of Inquiry", Lingustics, 9 (November 1964), 32-70.

- "The Historical and Social Contexts of an Inquiry into Language Maintenance Efforts", in Joshua A. Fishman, et al Language Loyalty in the United States, The Hague: Mouton and Company, 1966a, 21-33.
- "Language Maintenance in a Supra-Ethnic Age: Summary and Conclusions", in Joshua A. Fishman, et al Language Loyalty in the United States, The Hague: Mouton and Company, 1966b, 392-411.
- et al Language Loyalty in the United States, The Hague: Mouton and Company, 1966.
- Fong, Stanley L. M. "Identity Conflicts of Chinese Adolescents in San Francisco", in Eugene B. Brody (ed.) Minority Group Adolescents in the United States, Baltimore: Williams and Williams Company, 1968, 111-131.
- Fu, Carly Yee-bing. "A Study of Social Adjustment of the Chinese Family in Toronto", M.Sc. Thesis, University of Guelph, 1967.
- Glaser, Daniel. "Dynamics of Ethnic Identification", American Sociological Review, 23 (February 1958), 31-40.
- Glazer, Nathan. "The Process and Problems of Language-Maintenance: An Integrative Review", in Joshua A. Fishman, et al Language Loyalty in the United States, The Hague: Mouton and Company, 1966, 358-368.
- and Daniel P. Moynihan. Beyond the Melting Pot, Cambridge: M.I.T. Press, 1963.
- Gonzalez, Nancie. The Spanish Americans of New Mexico: A Distinctive Heritage, Los Angeles: University of California Press, 1967.
- Goodman, Leo A. "A Modified Multiple Regression Approach to the Analysis of Dichotomous Variables", American Sociological Review, 37 (February 1972a), 28-45.
- "A General Model for the Analysis of Surveys", American Journal of Sociology, 77 (May 1972b), 1035-1086.
- Gordon, Milton M. "Assimilation in America: Theory and Reality", Daedalus, 90 (Spring 1961), 263-285.
- Hamilton Multicultural Centre. Papers on the Hamilton Multicultural Centre Client: A Pilot Study, Hamilton: Multicultural Centre, 1977.

- Kloss, Heinz. "German-American Language Maintenance Efforts", in Joshua A. Fishman, et al (eds.) Language Loyalty in the United States, The Hague: Mouton and Company, 1966, 206-252.
- Ko, Bik-chi. "Survey of Leisure-Time Activities of the Chinese in Downtown Toronto", M.S.W. Thesis, University of Toronto, 1964.
- Kung, S. W. "Chinese Immigration into North America", Queen's Quarterly, LXVIII (1962), 610-620.
- Labovitz, Sanford. "The Assignment of Numbers to Rank Order Categories", American Sociological Review, 35 (June 1970), 515-524.
- Lai, Chuen-yan. "The Chinese Consolidated Benevolent Association in Victoria: Its Origin and Functions", B.C. Studies, 15 (Autumn 1972), 53-67.
- "Chinese Attempts to Discourage Emigration to Canada: Some Findings from the Chinese Archives in Victoria", B.C. Studies, 18 (Summer 1973), 50-69.
- Lai, Chuen-yan, David. "Home County and Clan Origins of Overseas Chinese in Canada in the Early 1880s" B.C. Studies, 27 (Autumn 1975), 3-29.
- Lai, Vivien Wai-ying. "The New Chinese Immigrants in Toronto", in J. C. Elliot (ed.) Minority Canadians 2: Immigrant Groups, Scarborough: Prentice-Hall, 1971, 120-140.
- Lamay, Paul. "Language and Ethnicity: A Study of Bilingualism, Ethnic Identity, and Ethnic Attitudes", Ph.D. Dissertation, McMaster University, 1976.
- Lambert, Wallace E. "A Social Psychology of Bilingualism", Journal of Social Issues, 23 (1967), 91-109.
- Land, Kenneth C. "Principles of Path Analysis", in F. Borgatta (ed.) Sociological Methodology, 1969, San Francisco: Jossey-Bass, 1968, 3-37.
- Leach, Edmund. "Culture and Social Cohesion", Daedalus, 94 (Winter 1965), 24-38.
- Lee, Jung-ok. "Some Aspects of Mental Illness Among Recent Immigrant Chinese", M.S.W. Thesis, University of British Columbia, 1961.
- Lieberson, Stanley. Language and Ethnic Relations in Canada, New York: John Wiley and Sons, 1970.

- Luk, Lordson Wai-chung. "The Assimilation of Chinese in Saskatoon", M.A. Thesis, University of Saskatchewan, 1971.
- McKennell, A. C. "Attitude Scale Construction", in C. A. O'Muircheartaigh and C. Payne, (eds.) The Analysis of Survey Data, Vol. 1: Exploring Data Structures, London: John Wiley and Sons, 1977, 183-220.
- Mead, George Herbert. George Herbert Mead on Social Psychology, Selected Papers, edited by Anselm Strauss, Chicago: University of Chicago Press, 1964.
- Migus, Paul M. (ed.) Sounds Canadian: Languages and Cultures in Multi-Ethnic Society, Canada: Canadian Ethnic Studies Association, 1975.
- Morton, James. In the Sea of Sterile Mountains: The Chinese in British Columbia, Vancouver: J. J. Douglas, 1974.
- Moser, C. A. and G. Kalton. Survey Methods in Social Investigation, London: Heinemann Educational Books, 1971.
- Munro, John A. "British Columbia and the 'Chinese Evil': Canada's First Anti-Asiatic Immigration Law", Journal of Canadian Studies, 6 (November 1971), 42-51.
- Nahirny, Vladimir C. and Joshua A. Fishman. "American Immigrant Groups: Ethnic Identification and the Problem of Generations", Sociological Review, 13 (1965), 311-326.
- O'Bryan, K. G., J. G. Reitz and O. M. Kuplowska. Non-Official Languages: A Study in Multi-Culturalism, Ottawa: Minister of Supply and Services, 1976.
- Palmer, Howard. "Anti-Oriental Sentiment in Alberta 1880-1920", Canadian Ethnic Studies, 2 (December 1970), 31-49.
- "Canada: Multicultural or Bicultural?" Canadian Ethnic Studies, 3 (June 1971), 109-118.
- (ed.) Immigration and the Rise of Multiculturalism, Toronto: Copp Clark Publishing, 1975.
- Paupst, K. "A Note on Anti-Chinese Sentiment in Toronto Before the First World War", Canadian Ethnic Studies, 9 (1977), 54-59.
- Pieris, Ralph. "Speech and Society: A Sociological Approach to Language", American Sociological Review, 16 (August 1951), 499-505.

- Pineo, Peter C. and John Porter. "Occupational Prestige in Canada", Canadian Review of Sociology and Anthropology, 4 (1967), 24-40.
- Reitz, Jeffrey G. "Language and Ethnic Community Survival", Canadian Review of Sociology and Anthropology, Special Issue, 1974, 104-122.
- "Language Maintenance in Urban Immigrant Communities", in Urban Ethnic Communities, Toronto: McGraw-Hill, forthcoming.
- Reynolds, H. T. "Some Comments on the Causal Analysis of Surveys with Log-Linear Models", American Journal of Sociology, 83 (July 1977), 127-143.
- Roy, Patricia E. "The Preservation of the Peace in Vancouver: The Aftermath of the Anti-Chinese Riot of 1887", B.C. Studies, 31 (Autumn 1976), 44-59.
- Royal Commission on Bilingualism and Biculturalism. Book IV: The Cultural Contribution of the Other Ethnic Groups, Ottawa: The Queen's Printer, 1970.
- Sampat-Mehta, R. International Barriers, Ottawa: Harpell's Press, 1973.
- Sapir, Edward. "Language", in Edwin R. A. Seligman and Alvin Johnson, (eds.) Encyclopaedia of the Social Sciences, 9 (1933), 155-169, New York: Macmillan Company.
- "The Status of Linguistics as a Science", in David G. Mandelbaum (ed.) Selected Writings of Edward Sapir in Language, Culture and Personality, Berkeley: University of California Press, 1968, 160-166.
- Sedgwick, C. P. and W. E. Willmott. "External Influences and Emerging Identity: The Evolution of Community Structure Among Chinese Canadians", The Canadian Forum, (September 1974), 8-12.
- Sewell, William H. and V. P. Shah. "Social Class, Parental Encouragement, and Educational Aspirations", American Journal of Sociology, 73 (March 1968), 559-572.
- Skrabanek, R. L. "Language Maintenance Among Mexican-Americans", International Journal of Comparative Sociology, 11 (1970), 272-282.
- Taylor, Gordon R. "Chinese Schools in Canada", M.A. Thesis, McGill University, 1933.
- Vallee, Frank G. and Norman Shulman. "The Viability of

- French Groups Outside Quebec", in Mason Wade (ed.) Regionalism in the Canadian Community, Toronto: University of Toronto Press, 1969.
- Voisey, Paul L. "The Chinese Communities in Alberta: An Historical Perspective", Canadian Ethnic Studies, 2 (1970), 15-29.
- Weinreich, Uriel. Languages in Contact, The Hague: Mouton and Company, 1964.
- Willmott, W. E. "Some Aspects of Chinese Communities in British Columbia Towns", B.C. Studies, 1 (Winter 1968), 27-36.
- "Approaches to the Study of the Chinese in British Columbia", B.C. Studies, 4 (Spring 1970), 38-52.
- Wilson, Thomas P. "Critique of Ordinal Variables", Social Forces, 49 (1971), 432-444.
- Wright, S. "Correlation and Causation", Journal of Agricultural Research, 20 (1921), 557-585.
- "Path Coefficients and Path Regressions: Alternative or Complementary Concepts?" Biometrics, 16 (1960), 189-202.
- Yao, Ju. "Ethnic Heterogeneity: A Study of Chinese Students", M.A. Thesis, McMaster University, 1975.
- Yiu, Ester Kam-yu. "Youth in Need: A Study of the Need of After School Programs Geared to Acculturation of Chinese Immigrant Youth from Downtown Toronto", M.S.W. thesis, University of Toronto, 1968.

