

Perspectives Canada III

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SYMBOLS

- .. figures not available
- ... figures not appropriate or not applicable
- nil or zero

In some tables figures will not add to totals because of rounding.

The data in *Perspectives Canada III* are the most recent available at press time.

New and more recent data are, however, continually being released by Statistics Canada.

Readers wishing to ascertain whether more recent data have become available for any particular table or chart in this publication, or wishing to make further queries are advised to contact

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Introduction

Introduction

What is the Perspectives Canada Series about?

We hope that this publication can be read easily by anyone who has made it to the last year or two of high school. Nevertheless, it has been written with a number of groups in mind—including citizen social action groups, high school and university students and teachers, government officials and administrators, as well as politicians. What is more important than to whom the publication is addressed is what each of these groups can find inside the book.

This book is more than a collection of statistics. It is rather a set of descriptive essays which rely primarily on statistics to provide a variety of perspectives on the social and economic features of Canadian life. The choice of topics in each volume of the *Perspectives Canada* series has a common core. We have taken a view of society which assumes that certain basic functions such as maintaining health, providing education, or protecting individual rights and property, are the essential elements of Canadian life that we, as a collective of individuals, provide for all constituent individuals. These functions are often referred to from another perspective as social domains or social concerns. Aside from these points of focus, we have also treated subjects that are important to understanding the processes at work within each function or social concern. This complementary information covers the attitudes of Canadians, the process of urbanization, a look at the native people in Canada, some Canadian-American comparisons and other related items.

The statistics found in each chapter are selected because of their relevance to the objective description of the function treated in a particular chapter, or to the theme or social process that is being highlighted. When we present a perspective in each chapter we are trying not to put forth a one-sided view. For example, the author of the Health chapter writes in part about smoking and lung cancer, but the intent of the chapter is not to persuade the reader that he should or should not smoke. Because of widespread discussion of the effects that our lifestyles have on health, both from the public and the medical profession, this chapter attempts to let the reader see, for example, whether people are smoking more or less, how many deaths result from lung cancer, and how many of these cancer deaths are likely to be consequences of smoking.

Several of the chapters were written by authors outside Statistics Canada—an attempt to bring differing approaches to the discussion of social trends. This is part of the evolutionary process that will add continued vitality to future volumes of the *Perspectives Canada* series.

What does the book try to do?

Statistics Canada has another publication to summarize what information it collects—*The Canada Year Book*. It has another to describe in words and pictures our political and socio-economic institutions—*The Canada Handbook*. *Perspectives Canada* looks primarily at the social forces at work in Canada and tries to respond to the need for a description from the social and human perspective of what has happened in Canada in recent years, and what are thought to be the driving forces behind those trends.

The point is to allow the reader a factual basis for forward thinking—a basis that starts with a description of where our social system is undergoing alteration or a change in direction. Some of the data provided present a background necessary to give a picture of the present state of Canadian education, health, justice, and other domains. The information should permit the reader to at least begin to assess his own well-being in contrast to that of the rest of his country's citizens. We are far from completely successful in this enterprise and in some areas we may stumble somewhat blindly. For the most part, we are constrained by the reality that data are not collected with the main intent of describing individual and societal well-being and doing so in a way that reflects truly human values. We believe, however, that an examination of the data we do have and the bringing together of information from different surveys or administrative records around a single topic, can tell us much more about these values. This is an ongoing process to which the *Perspectives Canada* series is dedicated.

Social Indicators versus Social Statistics

We have so far spoken of the *Perspectives Canada* series as an evolving one. We think readers should know the direction of that evolution. At present, the volume contains selected social statistics brought together within some covering theme. The ultimate intention of the series is to complement this approach by publishing, in addition, indicators of social well-being—what have traditionally been called "social indicators". For explanatory purposes, social indicators can be thought of as similar to economic indicators. Economic indicators are measures of our country's economic well-being. But they are much more than a collection of interesting economic statistics. They are *indicators* because they allow us to draw conclusions about the functioning and well-being of the economy using relatively few measures. Their status as indicators derives from their presence within theories of the economy that shows how they are central to economic well-being. Social indicators can be seen in a similar way. The main difference resides in the fact that social indicators will not emanate from an encompassing social theory that explains how the entire social system functions. Not only is the social system much more diverse and complicated than the economic system, but in fact the social system includes the economic system as one of its parts. Social indicators will issue from theories about sub-components of the social system such as health and education and the elements of well-being that these bring to individuals.

The future

What can the reader expect in the realm of social indicators within the *Perspectives Canada* series at least in its present form? We look forward to an increasing use of the theme approach coupled with experiments in the choice and organization of candidates for social indicators. Thus the role of *Perspectives Canada* will be to describe our social and economic well-being both in terms of indicators that should allow us to assess our position, and in terms of discussions of the social changes that interplay to effect that well-being.

How this volume differs from previous ones

The *Perspectives Canada* series is altered in response to readers' views about what formats and subjects are most useful. We receive this feedback in the form of letters, reviews and evaluations—some sought out by our regional offices, others sent directly to us by readers. This feedback has resulted in the following changes: (1) sources are given directly on the exhibits instead of being consigned to the back of a book; (2) a detailed list of tables and charts is given at the front of each chapter; (3) the binding has been improved; (4) the size of charts and other exhibits has been scaled down; (5) charts have been constructed to allow easier photocopying; and (6) we have tried to bring the reading level of the text more in line with that found in quality newsmagazines.

Due to a series of factors, including the lack of new data, treatments of bilingualism and housing are not included in this volume. However, later issues will include material in these areas.

A note on the title

Much of our mail concerning *Perspective Canada I* and *II* referred to these publications as *Perspectives Canada I* and *II*—adding an *s* to the original title. Essentially these people were correct in their view of the publication for it is indeed a set of perspectives rather than a single integrated view. Half as a concession to users and half as a correction, this and subsequent volumes will be called *Perspectives Canada*—with the *s*.

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The image features a stylized world map where each landmass is represented by a grid of small squares. The density of these squares varies, with higher density in more populated areas, creating a halftone effect. The word "Population" is printed in a bold, white, sans-serif font in the upper right corner of the map.

Population

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Population

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To most Canadians, Canada is a land of virtually limitless space; population problems are generally associated with other countries and societies—the severe over-population in underdeveloped Third World nations, or the crowding and congestion characteristic of a number of other industrialized societies, such as those found in Japan and some Western European countries.

The reality of the Canadian situation, however, is that many of our pressing social problems—unemployment, the deterioration of the natural environment, urban congestion, and inter-group conflict—have been very much influenced by the growth, composition and distribution of the Canadian population. To a large extent the resolution of many of these problems may be a function of our ability to influence population change in a manner consistent with other national goals.

This chapter describes many of the dynamics of population change in Canada and attempts to provide some brief insight into the effect of population parameters on other aspects of the social and economic fabric of Canadian life.

Population Growth

Since the first post-Confederation census in 1871, the Canadian population has grown from 3.7 million persons to 23.0 million in 1976 (*Chart 1.1*). While the population has grown in absolute terms between each population census, the rate of growth has been erratic. High annual rates of growth (in excess of 2.5%) were recorded in the 1901-11 period (when the population was bolstered by the infusion of masses of European immigrants seeking free land in the newly opened western expanses of Canada, or jobs in the burgeoning eastern industrial heartland), and in the baby-boom years of the 1940s and the 1950s. The depression eras of 1881-1901 and 1931-41 were characterized, on the other hand, by much lower growth rates. Since 1956, the growth rate of the Canadian population has been steadily declining, from 2.8% in 1956 to just over 1.0% in the late 1970s.

Population growth results from the combination of two components—natural increase (births minus deaths) and net migration (immigration less emigration). Of these two components, natural increase has been the most significant factor in population growth, accounting for over 85% of total Canadian population growth since 1851.¹ Net immigration (which is discussed in more detail in the Migration section of this chapter) contributed less than 15% of total population growth and actually represented net population losses in 1871-1901 and 1931-41. It is important to note, however, that since the 1956-61 period, net immigration's share of population increase has climbed steadily to 34% in 1971-76 (*Chart 1.3*) and to over 40% in 1976-77, a trend that should continue, since, as suggested below, fertility rates are not expected to increase in the near future.

Mortality rates have declined steadily in Canada from 11.8

deaths per thousand persons in 1923 to a rate of 7.3 in 1976 (*Chart 1.4*). This decrease has occurred primarily as a result of an almost fourfold decline in the infant (less than one year) death rate, due largely to improved health and sanitary conditions which have resulted in reductions in the incidence of diseases such as influenza, bronchitis, pneumonia and whooping cough. Population groups aged 1-4 and 65 and over also experienced less substantial declines in death rates, but for age groups between 5 and 65 years, improvements in mortality have been only minimal.²

The decline in mortality rates has had some impact on natural increase; however, fertility has been the dynamic element of natural increase and the principal factor in the two dramatic shifts in population growth following World War II—the baby-boom expansion of the late 1940s and 1950s and the abrupt and precipitous decline in natural increase since 1960 (*Chart 1.4*).

A series of related factors, a number of which revolve around the changing role of women in Canadian society, combined to influence the downturn in fertility in the 1960s. In particular, more women opted to remain in the education system for longer periods, and labour force participation rates of women increased dramatically, from less than 25% in 1956 to over 45% in the late 1970s. As a result, the time many women have available for childbearing and rearing has been greatly reduced; marriages and childbearing have been delayed; and family sizes have shrunk.

It is also important to note that while fertility rates have declined in all provinces since the mid-1950s, Quebec has experienced much larger declines in fertility than other regions, and this has had a major impact on the magnitude of the downturn in the fertility rate for all Canada.

Fertility in Quebec fell from fourth highest in Canada in 1955 to lowest in 1968, a position it maintained through 1974 (see the table below). It is likely that the factors affecting fertility in Canada as a whole were also prevalent in Quebec, although perhaps in more extreme forms. The process of re-evaluating and modifying traditional values and institutions was very pronounced in Quebec during the "Quiet Revolution" of the early 1960s. In addition, there was a significant increase in labour force participation of women in Quebec, particularly in the 20-24 age group. Between 1953 and 1968 the labour force participation rate of women aged 20-24 in Quebec increased by almost 30% (to a national high

Fertility in Canada and Quebec

	Crude birth rate in Quebec as % of Canadian rate	Quebec's rank
1921-25 ¹	129.6	1
1941	119.6	2 ²
1955	104.6	4
1960	100.0	4
1968	92.6	10
1974	90.9	10

¹ This figure represents the five-year average.

² Tied with New Brunswick.

Source: *Vital Statistics*, Catalogue 84-201, 1974.

of 60%). The comparable increase for all Canada was 25% and for Ontario less than 20%.³

Age Distribution of the Population

While causal factors affecting post-World War II population changes are difficult to document fully, much more is known about the effects of these shifts. The baby-boom cohort, for example, swelled the ranks of the under-15 age category in 1956-66, then the 15-24 year group in 1966-76, and had just begun to affect the 25-34 age category by 1976 (*Chart 1.6*). It will continue to affect subsequent age groups for the rest of this century and the first two or three decades of the next.⁴

Serious social problems have emerged in conjunction with these population shifts. As the different age groups have swelled or contracted severe stresses have been placed on the various services and institutions designed to meet the needs and demands of each group. Often, too, Canadians have failed to appreciate that the demands placed on their facilities by shifting population distributions are not permanent, but rather fluctuate depending in large measure on the size of the age group.

For example, as the baby boom passed through the education system, its size put tremendous pressure, first on the elementary and secondary levels in the 1960s, and then on post-secondary institutions in the 1970s. But even in the late 1960s and early 1970s, as school boards across Canada were considering the prospect of closing schools and laying off staff because of declining elementary and high school enrolments, the nation's teachers' colleges were still graduating large numbers of newly qualified teachers, many of whom have been unable to find jobs in the profession. Similarly, many universities reacted to the unprecedented waves of applicants by expanding physical capacity and teaching and support staff only to be faced with the need to make painful cuts when enrolments declined less than a decade later.⁵

Perhaps the most spectacular effect of the baby-boom phenomenon, however, has been its impact on the labour force. The leading edge of this cohort began entering the labour market in the mid-1960s and has swelled the labour force to unprecedented levels since that time. It is expected that labour force entrants from the tail-end of the baby boom will continue entering the labour force in large numbers into the mid-1980s.

Unfortunately, the supply of jobs, while growing, has not kept pace with the demand. Between 1966 and 1977 the labour force grew by 41.7% but total employment increased by only 34.7%.⁶ As a result, unemployment increased from 3.8% in 1966 to 8.1% in 1977, with the increase in unemployment in the 15-24 age category accounting for 51% of the increase in the total number of unemployed persons during that period.⁷

The continuing increase in the proportion of the population over 25 years of age will be one of the principal changes in the Canadian population in the next few decades,⁸ and this trend will have ramifications in other areas of social concern.

For example, if, as suggested above, population pressure on the labour force abates after the mid-1980s, it is possible there will be increased demands for liberalization of compulsory retirement legislation and immigration regulations. There may also be demands that the orientation of such areas as leisure and recreation be reorganized to favour more adult as opposed to youth participation; that health care delivery systems and housing and education policies be geared more for older persons; and that alternative uses for many schools and college facilities be devised. In addition,

there will be increased pressure on the social security framework as the proportion of the population aged 65 and over grows, and conditions in areas that tend to be highly age-selective, such as crime rates and consumer demand, may undergo significant changes.⁹

Language

The relationship between different language groups in Canada—English, French, and other minority language groups—has long been one of the central issues in the evolution of Canadian society. The data on mother tongue¹⁰ (*Table 1.9 to Chart 1.11*) indicate that the proportion of Canadians reporting English as their mother tongue is increasing while the percentage reporting French and other mother tongues is declining.

Between 1941 and 1976 the proportion of Canadians of English mother tongue increased by 11% while those of French mother tongue fell by 12% (*Table 1.9*). This overall decline in the percentage of persons reporting French mother tongue is the result of two other trends. First, Quebec's share of the Canadian population has declined since 1941 (*Table 1.5*), as a result of declining fertility in Quebec and significant net out-migration from Quebec (*Chart 1.17*). Second, the proportion of persons of French mother tongue fell in all provinces except Quebec and British Columbia (which recorded no change) between 1961 and 1976, primarily as a result of French-speaking persons adopting the English language. It was reported, for example, that in 1971 less than 50% of persons outside Quebec who reported French as their mother tongue listed French as the language spoken at home.¹¹

The French-speaking population within Quebec, however, has remained relatively stable at around 82%. The language retention of French Quebecers is over 98%¹² and while the number of non-Anglophone Quebecers adopting English is significantly greater than the number of non-Francophones adopting French in Quebec, this shift is more than offset by relatively heavy out-migration of non-Francophones.

The shrinking proportion of persons of French mother tongue outside Quebec reflects a broader trend toward increased anglicization of all minority mother tongue groups outside Quebec. The proportion of persons of all minority mother tongues (including French) dropped from 26.4% in 1941 to 20.5% in 1976, with the percentage of other minority groups falling from 18.6% to 15.1%.

This phenomenon partly reflects significant language transfer, particularly among second and succeeding generations of immigrant families. As they leave their families and pass through the education system, marry, find work, join community organizations, etc., they learn and use the majority language, while the perceived need and value of retaining the mother tongue is considerably diminished.

In the past, such losses from the large minority mother tongue groups have been offset by the arrival of new immigrants from the home country. However, immigration from the major non-British European nations has fallen drastically, from 55.3% of all immigration in 1961 to 19.3% in 1977. In terms of absolute numbers, immigration from Germany, for example, declined from a high of 12,000 in 1967 to just over 2,000 in 1977, while Italian immigration fell from over 31,000 in 1966 to 3,400 in 1977.

The result is that groups such as Germans, Italians and Ukrainians are no longer able to replenish their ranks, and without a major upsurge in immigration from these countries, it is likely that the proportion of Canadians able to speak these languages will continue to decline.

This trend has serious implications for the survival of minority ethnic groups in Canada. Language, both as a central unifying force and a medium through which group history, traditions and aspirations can be transmitted, is one of the integral elements of a culture. The problem that many ethnic groups may soon have to face is how to maintain their sense of ethnic identity as the prevalence of their language declines.

Migration

The movement of population is one of the basic ways by which societies adjust to a variety of economic and social problems. Changes in technology, the discovery of new natural resources, and shifts in the structure of consumer demand all have differing impacts on regional economies, and the movement of people facilitates the most productive use of Canada's resources. This section discusses the two basic types of migration: international movements and internal migration.

It was indicated in the previous discussion on population growth that of its two major components—natural increase and net immigration—the latter has been the smaller, accounting for only about 15% of total growth since 1871. Immigration, however, has permitted relatively rapid, short-term adjustments to fluctuations in economic conditions in Canada. Net immigration generally has increased during periods of economic expansion and high employment, for example, in 1901-11 and 1951-61, while periods characterized by depressed conditions and reduced labour demand usually have experienced low rates of immigration or even net emigration.

The effect of this phenomenon in the recent past can be seen by comparing the immigration data in Chart 1.12 and the Canadian unemployment figures in Table 5.1. Since 1966 the levels of immigration and net immigration have varied inversely with the unemployment rate. This relationship also leads to the speculation that if high unemployment levels continue in Canada into the 1980s, immigration levels will remain at relatively low levels for the next few years.

Unfortunately, much less is known in Canada about the magnitude and composition of the emigration component of international migration because Canada does not collect statistics on emigration. Statistics Canada, however, does produce estimates of emigration, and these estimates indicate that changes in emigration have played only a minor role in changes in net immigration levels (Chart 1.12). Emigration from Canada declined from over 100,000 persons per year in 1966-68 and stabilized at about 70,000 in the late 1970s. During the same period there was a major shift in the direction of emigration flows from Canada away from the United States. In the period 1961-66 an average of 47,000 Canadians a year migrated to the United States, but through 1971-76 this figure had fallen to less than 14,000 per year.

Where people emigrating from Canada have gone, 1961-76

	United States	United Kingdom	Other countries	Total	Total emigration
	<i>per cent</i>				
1961-66	54.4	9.9	35.7	100.0	432,100
1966-71	32.9	13.1	54.0	100.0	472,400
1971-76	19.3	13.5	67.2	100.0	357,200

Source: *International and Interprovincial Migration in Canada, 1977-78*, Catalogue 92-208.

Immigration to Canada is also important because the characteristics of new arrivals have considerable impact on the ethnic, age, educational and occupational composition of Canadian society. Prior to the 1960s, Canadian policy was to encourage immigration from societies which were culturally similar to Canada, in particular European countries. In the 1960s, however, regulations were introduced which eliminated the discriminatory aspects of the Immigration Act and emphasized levels of education and professional training, as well as humanitarian considerations such as uniting families. This resulted in massive increases in immigration from many non-European regions, particularly India, Pakistan, Hong Kong and the Philippines (Chart 1.14).

The belief that Canada has suffered an acute "brain drain", that is, the loss of highly-trained manpower, particularly to the United States, has long been part of conventional wisdom in Canada. A 1965 paper reported, however, that while many highly-qualified Canadians have indeed emigrated, their loss has been more than offset by the number of professional and skilled workers immigrating to Canada;¹³ and it is unlikely that this trend has changed since 1965 given the major reduction in emigration from Canada since that time.

The comparison of intended occupations of immigrants (Table 1.16) with the actual 1971 Canadian labour force figures suggests that labour force participation rates of immigrants may be higher than for the overall population and that immigrants will be somewhat over-represented in the professional and managerial categories, and considerably under-represented in the primary (agriculture, fishing, forestry and mining) and labour categories. These data suggest that the education level of the Canadian labour force is increased by the influx of immigrants.

Net immigration, however, is only one aspect of migration and, in fact, the other aspect, internal migration, may have a more profound effect on the development of Canadian society.

Internal migration includes a variety of moves ranging from crossing the street to a new residence to moving from Newfoundland to British Columbia; this section, however, focuses on rural-urban and interprovincial migration.

The drift of population from rural to urban areas of Canada constituted perhaps the most significant population shift of Canada's first century (Chart 1.8).¹⁴ In 1871, 80% of the population lived in rural areas but improvements in agricultural technology and productivity made more and more farm workers surplus. These workers, along with others who were unable to generate the capital necessary to remain competitive moved to urban labour markets to find jobs. By 1976, the proportion of persons living in areas designated rural had fallen below 25% and fewer than 5% of Canadians lived on farms.

Note, though, that the rural to urban drift reversed slightly from 1971 to 1976, and it is expected that the rural-urban distribution will remain relatively stable at this 25-75% split, at least in the immediate future.

Within areas classified as urban, the trend has been toward larger cities. Between 1951 and 1976, the 23 cities classified as Census Metropolitan Areas (in the 1976 *Census of Canada*) increased their share of the population from 43% to 56%. Census Metropolitan Area growth, however, slowed markedly in the 1966-71 period, and stabilized at around 56% in the 1971-76 period.

Urban growth has meant considerably more than just larger Canadian cities. The magnitude of urban growth has

brought about a wide range of changes which are discussed in depth in Chapter 11 of this volume.

Interprovincial migration has also been a major source of social change and development in Canada. Natural increase has been the major component of growth within each province (except British Columbia), but because differences in provincial rates of natural increase are generally minimal,¹⁵ interprovincial migration has been the principal factor affecting the changing provincial distribution of the Canadian population (*Table 1.5*).

Moreover, interprovincial migration has been a key element in changes to regional economic growth and balance. Surplus workers leave slow-growth regions, thus lessening competition for jobs and forcing up per capita incomes, and move to areas of greater growth where they fill gaps in the labour force and function to moderate wages by providing increased competition for jobs.

Since the 1920s, interprovincial migration in Canada has generally followed this pattern. Net movement has been from the Atlantic and Prairie regions to Ontario and British Columbia, and more recently to Alberta. As a result, these three provinces have claimed an increasing share of the Canadian population at the expense of the other seven provinces (*Table 1.5*).

The 1970s have been characterized by a number of new trends in interprovincial migration. There have been particularly large net flows into Alberta (which has experienced very significant economic growth) and out of Quebec (attributed primarily to the unsettled political climate in that province in the 1970s). In addition, the traditional streams into Ontario and British Columbia and out of the Atlantic and Prairie regions were reversed (*Table 1.17* and *Chart 1.18*).

This latter phenomenon occurred partly because the baby boom actually affected different regions at different times (see table below). The baby boom reached its peak in the Atlantic region (except for Newfoundland) in the late 1940s, but Ontario and British Columbia reached this point only in the late 1950s. (*Table 1C*).

Peak years of the baby boom by province

	Peak year		Peak years ¹
	year	fertility rate	
Newfoundland	1957	28.6	1954-57
Prince Edward Island	1948	21.1	1946-50
Nova Scotia	1947	21.5	1947
New Brunswick	1947	26.5	1947
Quebec	1954	22.8	1952-57
Ontario	1957	18.1	1954-60
Manitoba	1954	18.8	1954-55
Saskatchewan	1954	21.4	1954-55
Alberta	1954	24.7	1953-57
British Columbia	1957-58	16.8	1956-59

¹ Includes years in which fertility rate was within one percentage point of the peak year.

Source: *Vital Statistics*, Catalogue 84-201, 1974.

As a result, the Atlantic region was characterized by a relatively large number of labour force entrants in the mid-1960s, but by the 1970s, this pressure had shifted to Ontario and British Columbia. Between 1966 and 1971, for example, the number of persons aged 15-19 increased by 7.8% in the Atlantic region compared with 19.1% in Ontario and 27% in British Columbia. In the 1970s, the Atlantic region, and to a lesser extent the Prairies, experienced significant economic

growth relative to the growth of the labour force entry population, leaving them with a demand for extra workers (see table below).

Growth of employment and the population aged 15-19, by region

	Growth of population aged 15-19 1966-71	Growth of employment 1971-77
	per cent	
Atlantic	7.8	17.2
Quebec	9.7	15.0
Ontario	19.1	20.8
Manitoba and Saskatchewan	9.0	18.6
Alberta	24.7	32.7
British Columbia	27.0	27.5

Source: 1971 Census of Canada, Catalogue 91-715; *Historical Labour Force Statistics, Actual Data, Seasonal Factors, Seasonally Adjusted Data*, Catalogue 71-201, 1971 and 1977.

Whether interprovincial migration has in fact functioned to alleviate inter-regional economic imbalances has aroused considerable debate because, while there has been large population movement between regions there has been little change in relative levels of per capita income, labour force participation, and unemployment. This suggests that migration has served at least to maintain the existing balance, but that it has not been sufficient to correct regional economic imbalances.

Footnotes

¹ This figure tends to underestimate the impact of immigration since, once in Canada, immigrants contribute to natural increase.

² Kalbach, W.E., and McVey, W.W., *The Demographic Bases of Canadian Society*, McGraw-Hill Company of Canada Ltd., Toronto, 1971.

³ Cycles and Trends in Labour Force Participation: 1953-1968; *Catalogue 71-517*.

⁴ It is important to note that these proportional differences mask changes in the actual population in each age group. For example, between 1956 and 1976 the total number of persons aged 15 and under declined by about 300,000 while the number of persons aged 15-24 increased by 1.9 million, and the number aged 25-34 and 65 and over increased by approximately 600,000 each.

⁵ This discussion is not meant to imply that all the decrease in university enrolment is a result of demographic factors. No doubt such variables as competition from community colleges, the lessened probability of finding a good job upon graduation, and the apparent decreased social prestige attached to university diplomas have played a role in this phenomenon.

⁶ By comparison, employment in the United States increased by 17.7%.

⁷ Again, this discussion is not meant to imply that all change in employment is a result of population change. Clearly, factors such as the increasing labour force participation of women, the liberalization of unemployment insurance benefits, and the performance of the Canadian and foreign economies also have significant effects.

⁸ This assumption is based on the probability that fertility rates are unlikely to increase dramatically given trends toward smaller families and continued high labour force participation by women.

⁹ For example, since persons aged 15-25 tend to be highly over-represented in criminal activity, it is likely that as this group declines in size that crime rates will also fall.

¹⁰*Mother tongue is defined as the language first learned and still understood. Mother tongue is used in this chapter because it was the only variable relating to language or ethnicity collected in the 1976 Census of Canada. Unfortunately, mother tongue as an indicator of language in Canada has certain drawbacks; in particular, it tells very little about what languages are actually being used.*

¹¹Language in Canada, 1971 Census of Canada Profile Studies, by John Krait, Catalogue 99-707, Ottawa, 1976.

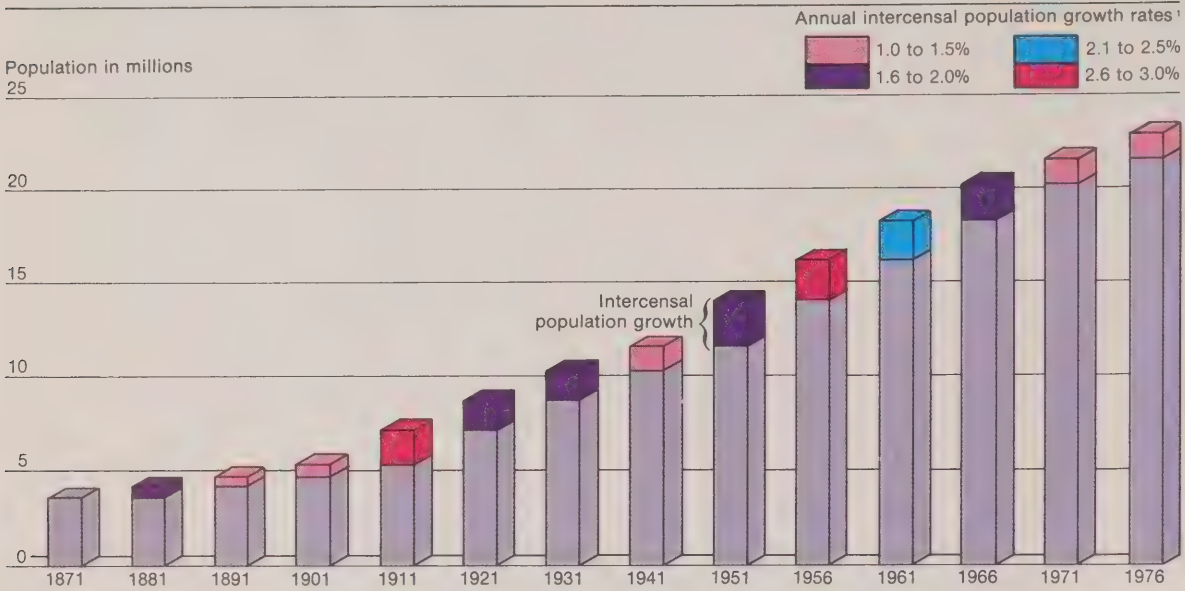
¹²*The rate of language retention represents the percentage of a given mother tongue group which uses that language in the home.*

¹³Parai, L., Immigration and Emigration of Professional and Skilled Manpower During the Post-war Period, *Special Study No. 1, Economic Council of Canada, Ottawa, 1965.*

¹⁴*The rural-urban distribution will also be affected by changes in definitions of what constitutes urban areas. For a discussion of this factor, see Chapter 11.*

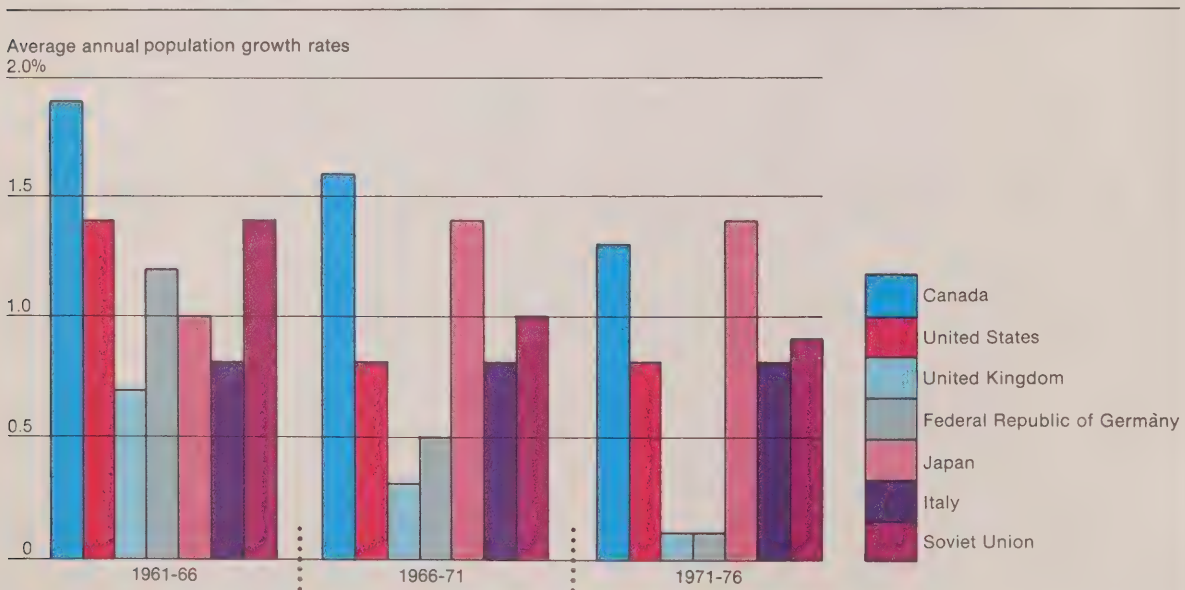
¹⁵*The rates of natural increase for Newfoundland and Alberta were the only provincial rates that differed from the national rate by more than 20% in 1974.*

CHART 1.1
Growth of the Canadian population, 1871-1976



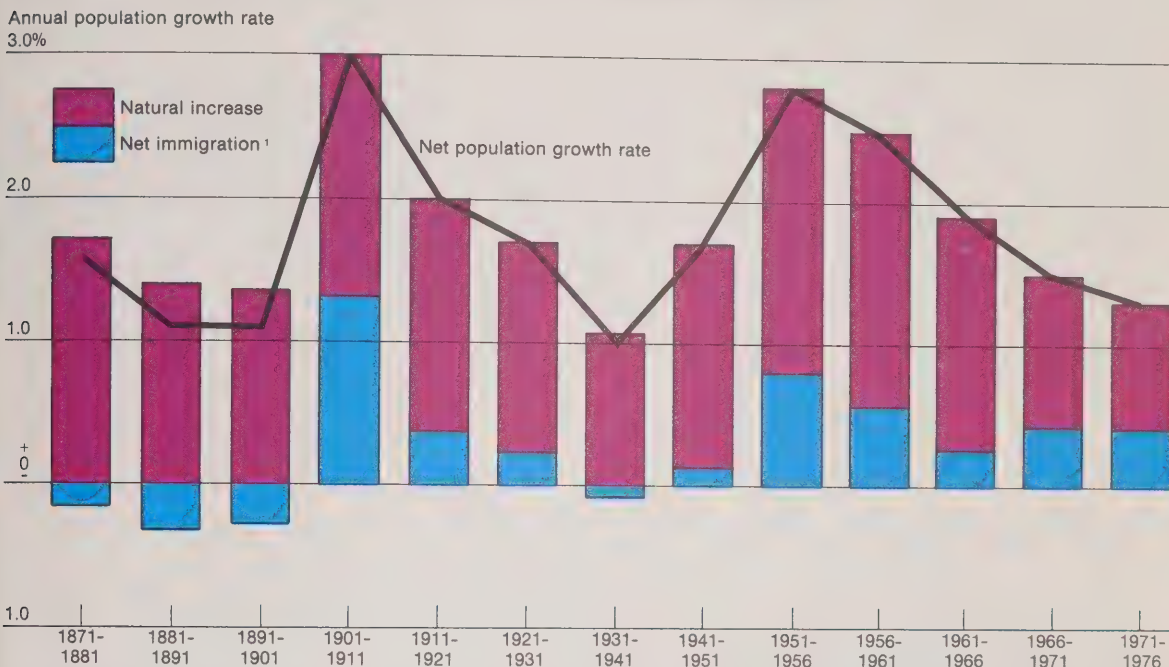
¹Represents the annual population growth rate from the preceding year. Newfoundland was not included in the calculation of the rate for 1941-51.
Source: 1941 *Census of Canada*, Volume I; 1971 *Census of Canada*, Catalogue 92-702; *Population Growth in Canada, 1971 Census of Canada*, Catalogue 99-701, by M.V. George; 1976 *Census of Canada*, Catalogue 92-823.

CHART 1.2
Five-year average annual population growth rates in Canada and selected industrial nations, 1961-76



Source: 1971 *Census of Canada*, Catalogue 92-702; 1976 *Census of Canada*, Catalogue 92-823; *Monthly Bulletin of Statistics*, Department of Economic and Social Affairs, United Nations, August 1970 and August 1978.

CHART 1.3
Components of population growth: Natural increase and net immigration, 1871-1976



¹Net immigration is the difference between immigration and emigration.

Source: *Population Growth in Canada, 1971 Census of Canada, Catalogue 99-701*, by M.V. George; *Vital Statistics, Catalogue 84-201, 1974*; unpublished data, Vital Statistics Branch, Health Division, Statistics Canada.

CHART 1.4
Natural increase,¹ 1922-76



¹The natural increase rate represents the difference between the crude birth rate and crude death rate.

Source: *Vital Statistics, Catalogue 84-201, 1974*; unpublished data, Vital Statistics Branch, Health Division, Statistics Canada.

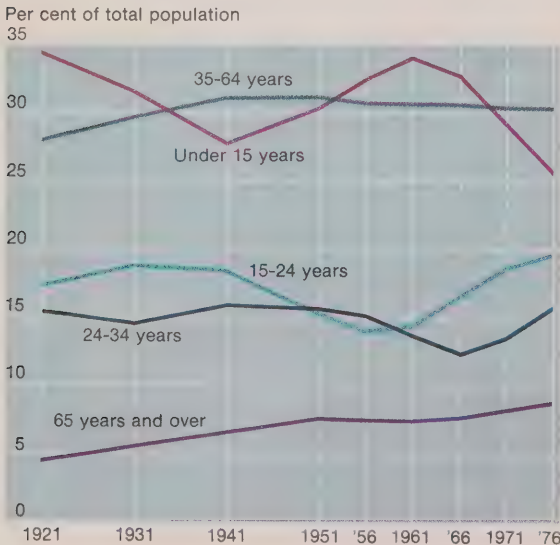
TABLE 1.5
Provincial distribution of the Canadian population, 1921-78

	1921	1931	1941	1951	1961	1971	1976	1978 ¹
	<i>per cent</i>							
Newfoundland	..	..	..	2.6	2.5	2.4	2.4	2.4
Prince Edward Island	1.0	0.8	0.8	0.7	0.6	0.5	0.5	0.5
Nova Scotia	6.0	4.9	5.0	4.6	4.0	3.7	3.6	3.6
New Brunswick	4.4	3.9	4.0	3.7	3.3	2.9	2.9	3.0
Quebec	26.9	27.7	29.0	28.9	28.8	27.9	27.1	26.8
Ontario	33.4	33.1	32.9	32.8	34.2	35.7	35.9	36.0
Manitoba	6.9	6.7	6.3	5.5	5.1	4.6	4.4	4.4
Saskatchewan	8.6	8.9	7.8	5.9	5.1	4.3	4.0	4.0
Alberta	6.7	7.1	6.9	6.7	7.3	7.5	8.0	8.3
British Columbia	6.0	6.7	7.1	8.3	8.9	10.1	10.7	10.8
Yukon and Northwest Territories	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population	'000 8,788	10,377	11,507	14,009	18,238	21,568	22,993	23,481.1

¹ 1978 figures are preliminary mid-year estimates and are subject to revision; all other figures are census data.

Source: 1971 *Census of Canada*, Catalogue 92-702; 1976 *Census of Canada*, Catalogue 92-823; *Estimates of Population for Canada and the Provinces, June 1, 1978*, Catalogue 91-201, 1978.

CHART 1.6
Age distribution of the Canadian population, 1921-76



Source: 1971 *Census of Canada*, Catalogue 92-715; 1976 *Census of Canada*, Catalogue 92-823.

TABLE 1.7
Proportion of provincial populations defined as urban,¹ 1951-76

	1951 ²	1961	1971 ³	1976
Newfoundland	42.7	50.7	58.9	58.9
Prince Edward Island	25.1	32.4	38.9	37.1
Nova Scotia	55.3	54.3	58.0	55.8
New Brunswick	42.6	46.5	54.5	52.3
Quebec	67.0	74.3	79.5	79.1
Ontario	73.4	77.3	81.8	81.2
Manitoba	56.6	63.9	70.1	69.9
Saskatchewan	30.4	43.0	52.7	55.5
Alberta	48.0	63.3	73.6	75.0
British Columbia	70.8	72.3	79.7	76.9
Canada	62.9	69.6	76.0	75.5

¹ See Chapter 11 for definition of urban.

² 1951 calculations based on the 1956 definition of urban area.

³ 1971 calculations based on the 1976 definition of urban area.

Source: 1961 *Census of Canada*, Catalogue 92-536; 1976 *Census of Canada*, Catalogue 92-807.

CHART 1.8
Urban-rural population distribution,¹ 1871-1976



¹See Chapter 11 for definitions of rural, rural-farm and urban.

²1951 figures calculated using the 1956 definition of urban area.

³1971 figures calculated using the 1976 definition of urban area.

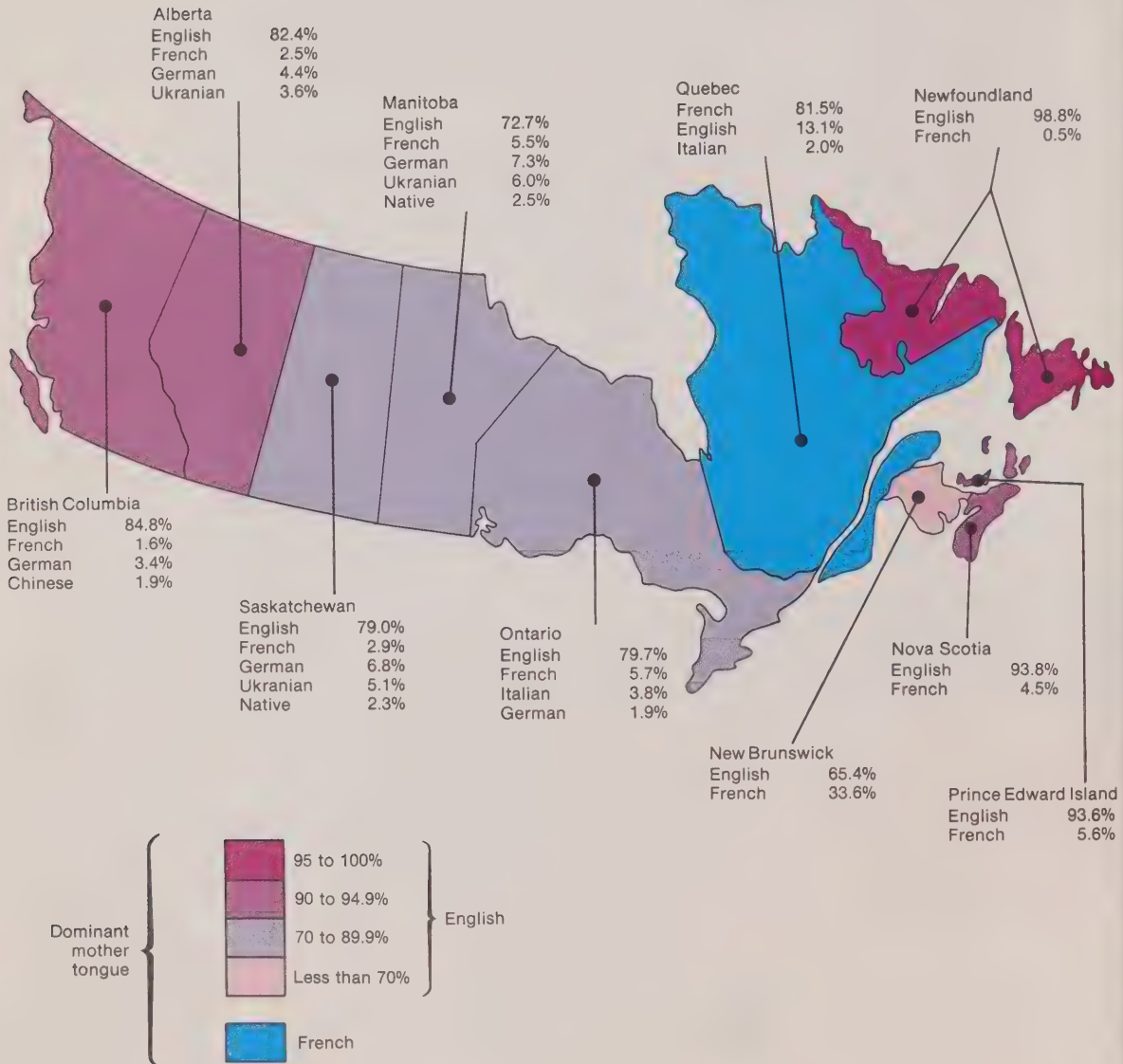
Source: 1951 Census of Canada, Volume I; 1961 Census of Canada, Catalogues 92-535 and 92-536; 1971 Census of Canada, Catalogues 92-708 and 92-709; 1976 Census of Canada, Catalogues 92-806 and 92-807.

TABLE 1.9
Primary mother tongue groups, 1941-76

Mother tongue	1941	1951	1961	1971	1976
			<i>per cent</i>		
English	56.4	59.1	58.5	60.2	62.6
French	29.2	29.0	28.1	26.9	26.1
Italian	0.7	0.7	1.9	2.5	2.1
German	2.8	2.4	3.1	2.6	2.1
Ukrainian	2.7	2.5	2.0	1.4	1.3
Portuguese	..	..	..	0.4	0.6
Chinese	0.3	0.2	0.3	0.4	0.6
Native Indian and Inuit	1.1	1.0	0.9	0.8	0.6
Polish	1.1	0.9	0.9	0.6	0.4
Other	5.7	4.2	4.3	4.2	3.6
Total	100.0	100.0	100.0	100.0	100.0

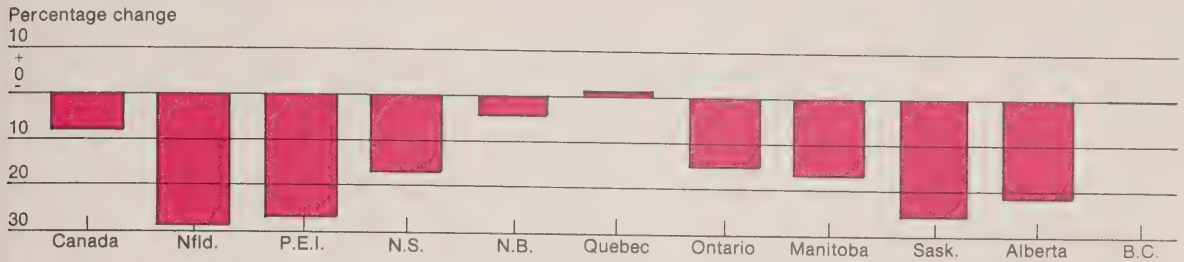
Source: 1961 Census of Canada, Catalogue 92-561; 1976 Census of Canada, Catalogue 92-821.

MAP 1.10
 Dominant mother tongue and significant minority mother tongues, by province, 1976



Source: 1976 Census of Canada, Catalogue 92-821.

CHART 1.11
Change in the proportion of provincial population with French mother tongue, 1961 to 1976



Source: 1961 Census of Canada, Catalogue 92-561; 1976 Census of Canada, Catalogue 92-821.

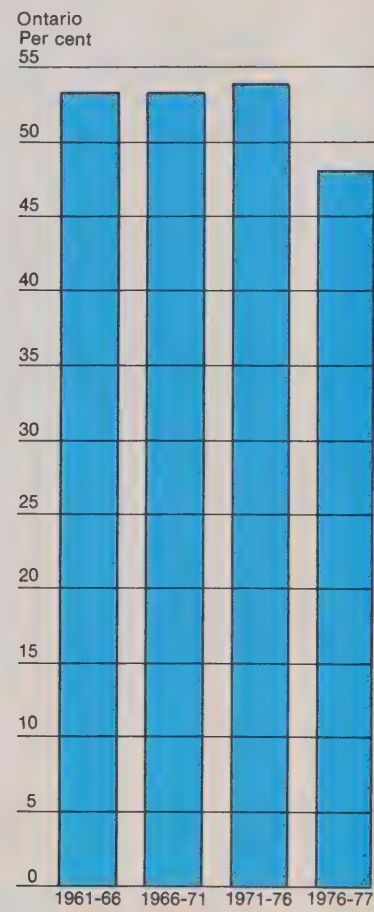
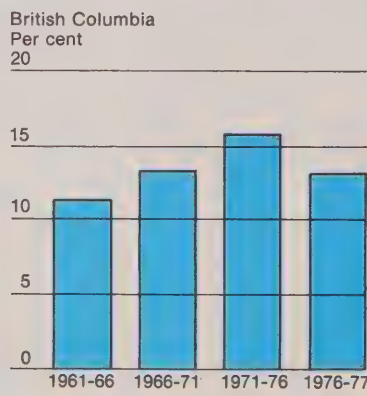
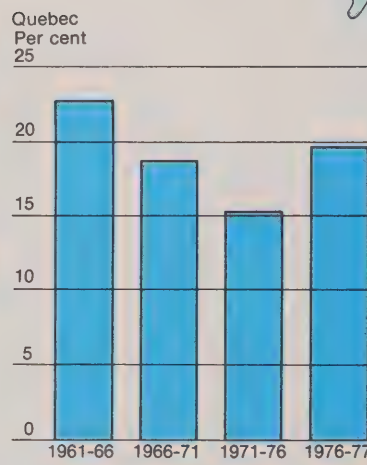
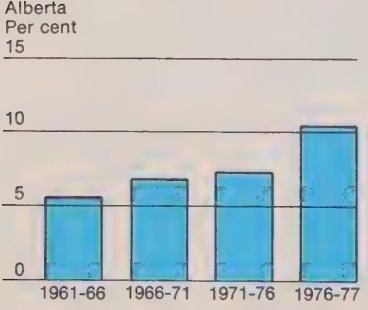
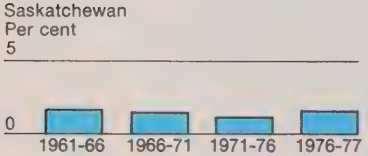
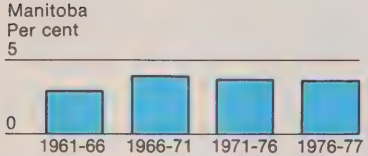
CHART 1.12
Net Immigration,¹ 1961-77



¹These figures differ slightly from those presented in Chart 1.3. The emigration data in Chart 1.3 represent residual figures (total population less natural increase and total immigration) while the above are estimates by Employment and Immigration Canada. In addition, the years in Chart 1.3 cover the period January 1 to December 31; those above are from June 1 to May 31.

Source: *International and Interprovincial Migration in Canada*, Catalogue 91-208, 1977, 1978 and 1979.

CHART 1.13
Proportion of immigrants arriving in Canada who went to the Atlantic region and to the other provinces, 1961-77¹



¹The percentage of immigrants going to the Yukon and Northwest Territories was 0.1 in 1961-66, 1966-71 and 1976-77, and 0.2 in 1971-76.
 Source: *International and Interprovincial Migration in Canada*, Catalogue 91-208, 1977 and 1978.

CHART 1.14
Immigration to Canada by last country of residence, 1961-77



Source: *Immigration Statistics, Employment and Immigration Canada, 1961-77.*

TABLE 1.15
Age distribution of immigrants arriving in Canada, 1961-77

Age group	Immigrants				All Canada 1976
	1961	1966	1971	1977	
			<i>per cent</i>		
0-14 years	21.9	25.4	21.7	23.7	25.6
15-24 years	28.4	26.1	28.6	23.7	19.5
25-34 years	25.7	27.7	29.3	26.3	15.7
35-64 years	20.8	18.7	17.2	20.7	30.4
65 years and over	3.2	2.0	3.1	5.6	8.7
Total	100.0	100.0	100.0	100.0	100.0

Source: *Immigration Statistics, Employment and Immigration Canada, 1961-77; 1976 Census of Canada, Catalogue 92-823.*

TABLE 1.16
Intended occupational status of immigrants in Canada,
1961-77

	1961	1966	1971	1977
	<i>per cent</i>			
<i>Occupation:</i>				
Professional and managerial	10.6	13.3	16.2	13.2
Clerical, sales and service	16.8	13.0	15.4	12.1
Skilled and semi-skilled labour	11.8	18.4	13.9	11.8
Primary	3.5	1.9	2.0	1.2
Labourers (and not stated)	5.7	4.3	2.7	3.1
<i>Others:</i>				
Spouses (including fiancés)	22.2	17.6	17.5	17.5
Children, students and others	29.4	31.5	32.3	40.7
Total	100.0	100.0	100.0	100.0
Total number of immigrants	71,689	194,743	121,900	114,914

Source: *Immigration Statistics, Employment and Immigration Canada, 1961-77.*

TABLE 1.17
Net region to region migration flows, 1961-77

	Annual net flows ¹			
	1961-66	1966-71	1971-76	1976-77
Atlantic:				
Quebec	-1,105	672	2,236	3,169
Ontario	-11,239	-9,514	5,393	2,406
Prairies ²	-362	-220	139	-958
Alberta	-526	-966	-727	-2,755
British Columbia	-1,001	-1,548	-911	-701
Total ³	-14,197	-11,620	6,001	1,168
Quebec:				
Atlantic	1,105	-672	-2,236	-3,169
Ontario	-4,497	-19,309	-9,388	-13,290
Prairies ²	176	-74	-314	-1,073
Alberta	-53	-1,351	-1,511	-3,551
British Columbia	-704	-2,953	-2,063	-2,317
Total ³	-3,972	-24,547	-15,522	-23,346
Ontario:				
Atlantic	11,239	9,514	-5,393	-2,406
Quebec	4,497	19,309	9,388	13,290
Prairies ²	1,980	4,163	114	-2,625
Alberta	869	-289	-4,895	-10,293
British Columbia	-1,864	-2,671	-6,729	-3,460
Total ³	17,074	30,142	-7,712	-5,732
Prairies:²				
Atlantic	362	220	-139	958
Quebec	-176	74	314	1,073
Ontario	-1,980	-4,163	-114	2,625
Alberta	-5,441	-10,227	-8,229	-2,899
British Columbia	-5,976	-9,965	-4,989	1,088
Total ³	-13,113	-24,418	-13,516	2,883
Alberta:				
Atlantic	526	966	727	2,755
Quebec	53	1,351	1,511	3,551
Ontario	-869	289	4,895	10,293
Prairies ²	5,441	10,227	8,229	2,899
British Columbia	-5,668	-6,243	-3,635	7,377
Total ³	-397	6,401	11,714	27,496
British Columbia:				
Atlantic	1,001	1,548	911	701
Quebec	704	2,953	2,063	2,317
Ontario	1,864	2,671	6,729	3,460
Prairies ²	5,976	9,965	4,989	-1,088
Alberta	5,668	6,243	3,635	-7,377
Total ³	15,549	22,993	18,457	-1,466

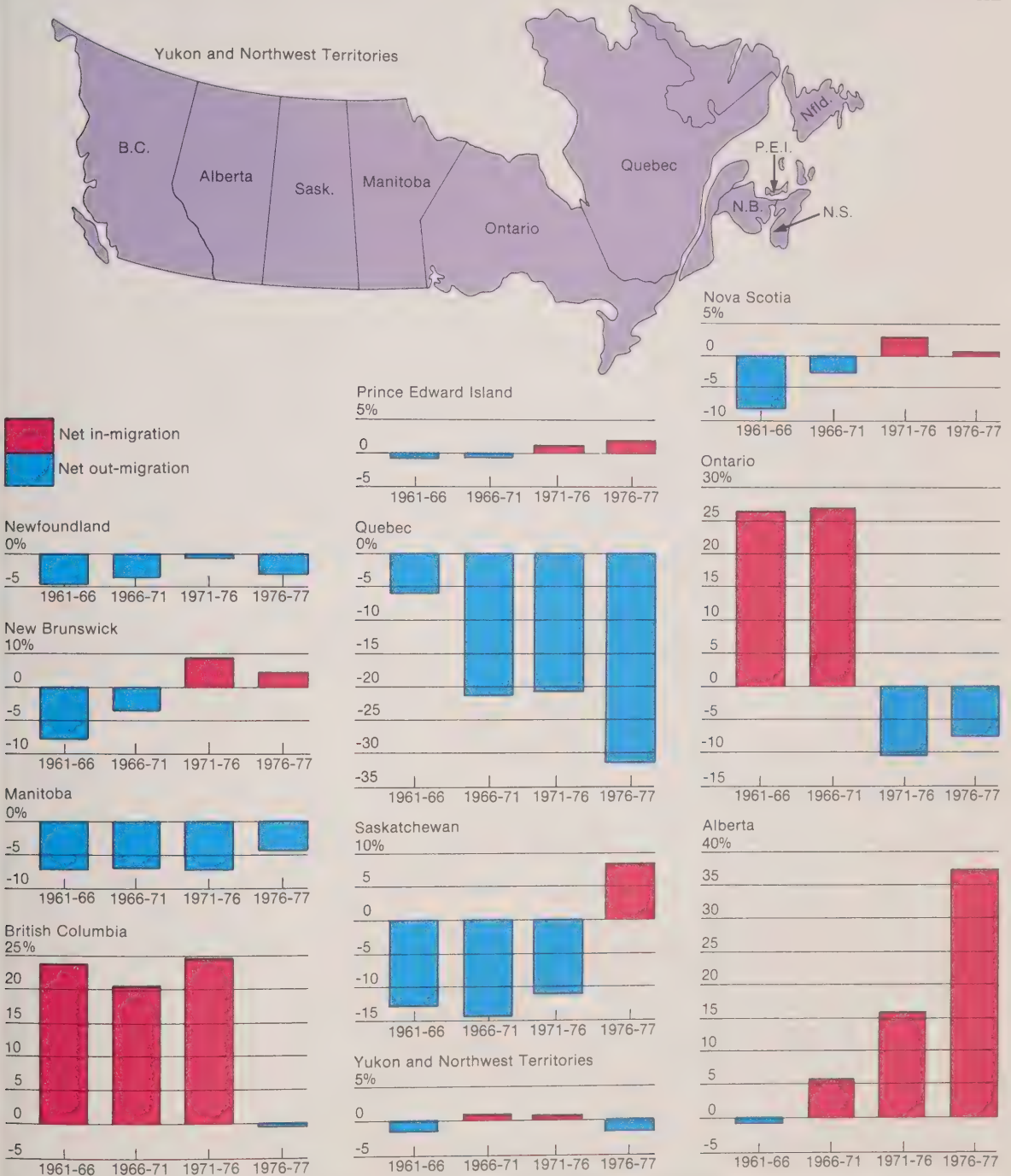
¹ This table outlines differences in inter-regional migration. A positive figure indicates that more people came to the indicated region from the sub-region than went from that region to the sub-region. A negative figure, of course, indicates the opposite. For example, in 1961-66 an average of 1,105 more people moved from the Atlantic region to Quebec than moved eastward from Quebec each year. In 1966-71, however, the flow reversed and 672 more persons moved from Quebec to the Atlantic region than in the opposite direction.

² Includes Manitoba and Saskatchewan.

³ Total migration figures include persons moving to and from the Yukon and Northwest Territories.

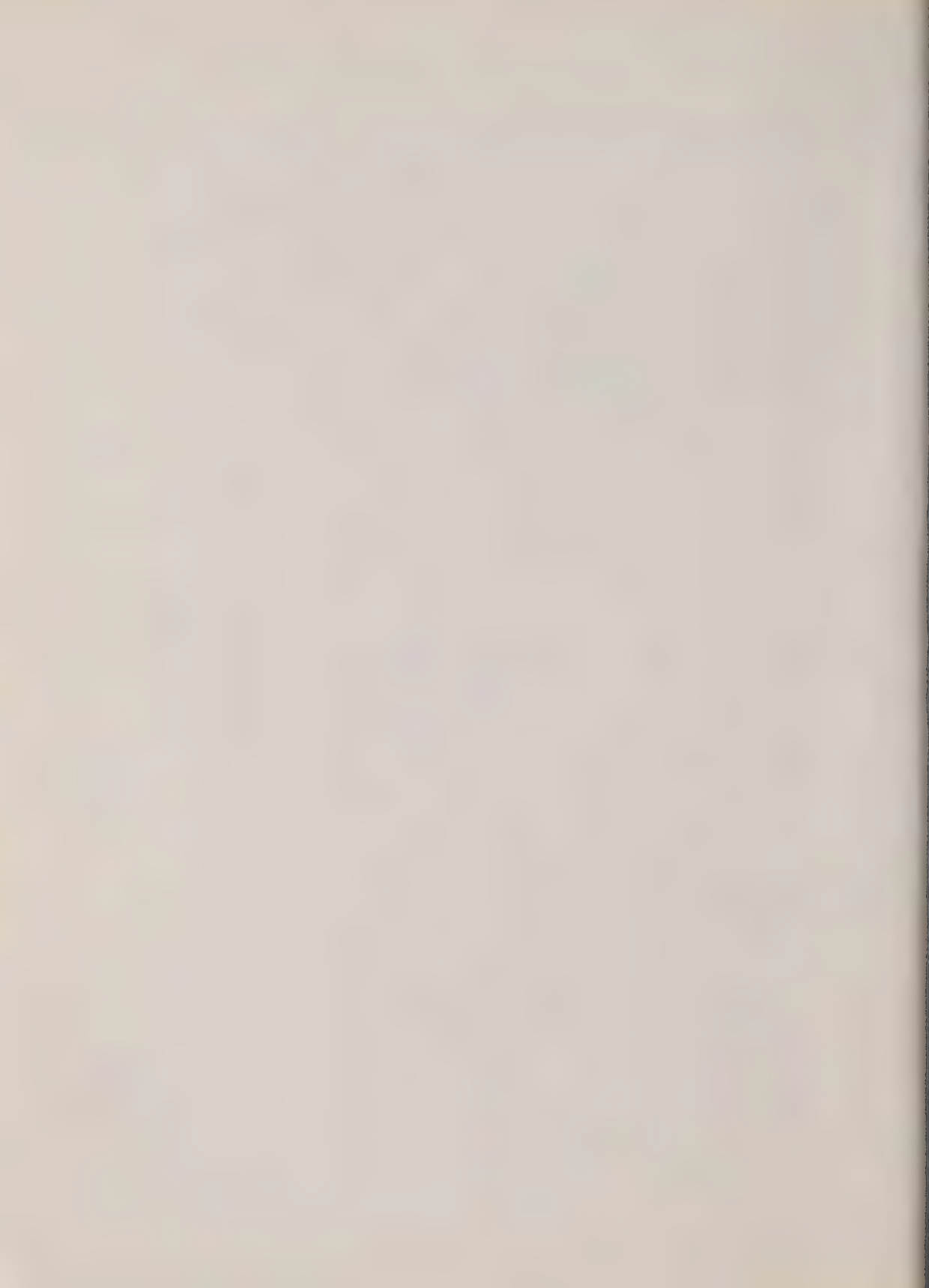
Source: *International and Interprovincial Migration in Canada, Catalogue 91-208, 1977 and 1978.*

CHART 1.18
Net interprovincial migration¹ by province, 1961-77



¹Figures calculated by dividing net migration (in-migration minus out-migration) by the total volume of interprovincial migration in Canada and multiplying by 100.

Source: *International and Interprovincial Migration in Canada*, Catalogue 91-208, 1977 and 1978.





Family

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Family

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This Chapter adapted from
Children in Canadian Families, Catalogue 98-810,
by the author.

A number of important changes in the values, norms, and behaviour relating to marriage, family life, childbearing and child-rearing have been taking place in Canada. This chapter illustrates some of these changes by tracing trends in certain demographic features of Canadian families and children since 1941, and in some cases since 1931. Information on recent trends in the formation of all families, husband-wife families, and lone-parent families is provided and briefly discussed to facilitate the interpretation of various statistics on children, their numbers, ages, and living arrangements.¹ Specifically, the materials presented treat the changing size of families according to the number of children under 25 years of age at home, and recent shifts in the age composition of children in these ages in all families. In addition, statistics on family income are used to provide a general picture of the resources available, since the late 1960s, to Canadian families and to their dependent children under 16 years of age.²

The picture of families and children in Canada presented here should be considered against the backdrop of this country's continuing, considerable urbanization; the transformation of the nation's economy in its industrial, occupational and labour force structure, especially the increased labour force participation of married women in recent years; the changing character of the quantity and types of housing stock available to Canadians; and other related social, economic and cultural factors.

Trends in Population, Census Families, and Children Under 25 Years of Age Living at Home, 1931-76

The family population in relation to the total population increased steadily from 86.0% in 1941 to a peak of 88.3% in 1961 and 1966 (Table 2.1). This was due to the post-Second World War increases in marriages, aided by a gradual lowering of the age at marriage for both males and females, and the increase in births which was so considerable that the term "baby boom" was coined to describe this phase in Canada's demographic history. The subsequent fall in the proportion of the family population to 86.0% in 1976, the same level as in 1941, was primarily due to the drop in the child population attributable to the drastic declines in fertility in Canada during the 1960s and 1970s. Indeed, the number of children under 25 years of age in census families has actually declined since 1971 (Table 2.1). To a lesser degree, the growth in non-family households, and in the non-family population in the same two decades, also played a role in the decrease in the proportion of the family population (Table 2.2).

These various movements are clearly reflected in the changes in the average size of family as measured by the average number of persons, and the average number of children per family since 1941 (Table 2.1).

The Changing Size of Census Families

Since the end of the 1930s, most Canadians have enjoyed the benefits of a buoyant and prosperous economy. The years following the Second World War were characterized by a continuing economic growth which only began to taper off in the mid-1970s. One school of thought maintains that, as compared with the 1930s, the post-Second World War patterns of earlier marriage, parenthood at increasingly

TABLE 2.1
Census families, 1941-76

	Census families	Population in census families		Children ¹ in census families	Persons per census family	Children ¹ per census family
		Number	As a % of the Canadian population			
		000s	per cent	000s		
1941	2,510	9,885	86.0	4,666	3.9	1.9
1951 ²	3,287	12,216	87.2	5,544	3.7	1.7
1956	3,712	14,077	87.5	6,562	3.8	1.8
1961	4,147	16,096	88.3	7,777	3.9	1.9
1966	4,526	17,682	88.3	8,656	3.9	1.9
1971	5,071	18,852	87.4	8,855	3.7	1.7
1976	5,728	19,783	86.0	8,521	3.5	1.5

¹Refers to children under 25 years of age living at home.

²Figures for 1951 and subsequent years include Newfoundland and Yukon and Northwest Territories.

Source: 1941 Census of Canada, Vol. V; 1951 Census of Canada, Vol. X; 1956 Census of Canada, Vols. I, III, and XIII; 1961 Census of Canada, Catalogues 92-542 and 93-514; 1966 Census of Canada, Catalogues 93-609 and 93-610; 1971 Census of Canada, Catalogues 93-702, 93-714 and 93-715; and 1976 Census of Canada, Catalogues 93-805, 93-821 and 93-823.

TABLE 2.2
Private households by type, 1961-76

	1961	1966	1971	1976
	<i>per cent</i>			
Family households: ¹				
One-family	83.0	82.0	79.7	77.3
Multiple-family	3.7	2.5	2.0	1.3
Non-family households:				
One person only	9.3	11.4	13.4	16.8
Two or more persons	4.0	4.1	4.9	4.6
Total private households ²	100.0	100.0	100.0	100.0
Total number of private households	(000) 4,555	5,180	6,031	7,166

¹Represents private households that contain at least one census family.

²Represents a person or group of persons who occupy a private dwelling and do not have a usual place of residence elsewhere in Canada.

Source: 1966 *Census of Canada*, Catalogue 93-605; 1971 *Census of Canada*, Catalogue 93-740; 1976 *Census of Canada*, Catalogue 93-806.

younger ages, and larger average family size were due to this "prosperity" and the ability of young adults to find well-paying jobs and to afford private housing.³ Others maintain that earlier marriage and larger size families were a reaction to the depressed 1930s when marriage and childbearing had to be delayed or even foregone completely. Since the late 1950s and early 1960s, there has been a continuing and drastic fall in fertility in Canada, demonstrated in declining numbers of births, and in the changing pattern of family size (Tables 2.4 and 2.5). Also, information on recent marriage trends in Canada points to an emerging pattern of marriage delay or the choice to remain single on the part of young Canadians. Marriage delay, even if only temporary, can result in a smaller number of children born, since older age at marriage means that the most productive childbearing years have passed.

The various changes in the pattern of family size over the period 1941 to 1971 are clearly seen in the Canadian census fertility data for ever-married women (Chart 2.3). Considering the proportions of such women by age, there were notable changes in their family size. There was a marked decline in very large families (a long-term and continuing trend in Canada), declines in childless and one-child families, increases in three- and four-child families, and a striking convergence on the two-child family. In the 1961 Census of Canada fertility data, the two-child family emerged as Canada's most common family size. This continued to be so in 1971, although there were other changes in the pattern of family size reported in 1971 attributable to the decline in fertility during the 1960s. In 1971, the percentage of childless women rose, particularly among those under 30 years of age. Furthermore, there were proportionately more women 25-29 years of age with one and two children, and less with three, four and more children than in 1961.⁴ It has become increasingly evident that the average family size preferred by married couples is again declining in this country and more couples are now having only two children. It would seem that the family building aspirations of Canadians are now being satisfied by a smaller number of children.⁵

The overall changes from 1941 to 1971 in the pattern of family size described above are confirmed in the statistics for children under 25 years of age living at home in census

families. This is particularly so if traced for families with heads in the 35-44-year-age range, because such families are just about complete in terms of the number of children the couple intend to have, and the children are still young enough to be at home (Table 2.5). However, when only census families with children are considered, the increasing importance of families with two children in Canada is clearly evident (Chart 2.9).⁶

Provincial Variations in Average Size of Census Families, 1971 and 1976

Birth rates have been highest for some time in Newfoundland and the Yukon and Northwest Territories, and lowest in British Columbia, so that average family size has been highest in Newfoundland and in the Yukon and Northwest Territories and smallest in British Columbia (Tables 2.4 and 2.6). Although fertility rates in Quebec dropped more drastically than in the other provinces during the 1960s and early 1970s, average family size in this province was still above the Canadian level in 1971. Continuing steep fertility declines in Quebec resulted in this province reporting the same average family sizes as those for Canada as a whole in 1976, that is, 3.5 persons and 1.5 children per family.

The drop in average family size in every province and in the Yukon and Northwest Territories during 1971-76 is evidence of the overall fertility declines since the beginning of the 1960s.

Family size differences among the provinces remained the same in 1976 as in 1971 (Table 2.6). Average family size was highest in Newfoundland and the Yukon and Northwest Territories, and generally higher in the Atlantic provinces and in Quebec than in Ontario and the four Western provinces.

In all provinces over the period 1971 to 1976 there was a continuation of the decline in very large families, a shift toward families with no children or with only one child, and a growing convergence on the two-child family. The interprovincial variations in these general patterns are examined in Chart 2.8. Smallest families, that is, those with no children or with one child, as well as two-child families, comprised a smaller proportion of all families in all four Atlantic provinces and in Quebec than in Ontario and the Western provinces in 1971 and 1976. This is because the Atlantic provinces and Quebec continued to have higher proportions of families with five or more children, despite declines in every province in such families over the 1971-76 period. Newfoundland remained the province with the highest proportion of large families and the lowest proportion of smallest families, while the reverse was true of British Columbia.

Changing Age Composition of Children Under 25 Years of Age Living at Home in Census Families

There was a considerable drop in the median age of children under 25 from 1941 to 1951 (Chart 2.11). Continuing increases in marriage, sustained high fertility levels among young married couples, and substantial increases in numbers of children in the youngest ages caused the median age of children under 25 years to drop to its lowest level in 1956. The median age showed a pattern of consistent rise in subsequent census years due to reduced births and to the simultaneous maturation of the post-Second World War babies during the 1960s and early 1970s. Both these factors gave increasingly greater weight to children at home in their pre- and early teens, and then to those in their late teens and early twenties (Table 2.7). The median age of children

continued to increase between 1966 and 1976, and in the latter year, stood at 11.4 years, a figure slightly higher than that for 1941.

The total number of children in families showed steady increases at each census date from 1941 to 1971. Between 1971 and 1976, however, there was a decline in the total number of children under 25 years of age.

Between 1961 and 1976 the number of children under 6 years of age declined by over half a million, and this age group's share of total children under 25 years fell from 34% to 24%. On the other hand, the number of children 6-14 years of age peaked in 1971 and then declined both absolutely and relatively between 1971 and 1976. Meanwhile the number and proportion of children 15-24 years of age continued to increase during this five-year period. However, it is noteworthy that although over 1971-76 only the 15-25-years-of-age group of census family children showed positive growth, those 6-14 years of age, at 43.2% still constituted the largest age group of children under 25 years of age (*Table 2.7*).

Trends in Husband-wife and Lone-parent Families

Most Canadians still choose marriage and the traditional two-parent-and-child nuclear family form (*Table 2.10*). High and fairly stable percentages of married family heads were maintained up to and including 1971, with only a slight drop in 1976. This was due to the combined effects of trends in marriage and remarriage and continuing improvements in longevity. In addition, the Canadian census practice of including "cohabiting" couples among the married (see "Definitions") probably added to husband-wife families.⁷ Relevant vital statistics confirm that in recent decades, and particularly since 1968, there has been a considerable increase in the remarriage of the divorced (*Table 2.12*). Therefore, in recent years an increasing number of young parents and children have experienced, at least once, the economic, social and emotional problems which accompany the upheaval of family dissolution and reformation.

Although lone-parent families, at slightly less than 10%, still constitute a small proportion of total families, they have been increasing consistently in percentage terms since 1966 (*Table 2.13*). The biggest contributions to this growth of lone-parent families have been made by separated, never-married, and divorced females in the younger ages, who, by implication, have dependent children still living at home (*Table 2.14*).⁸

Some of the more important factors which have contributed to the increase in lone-parent mothers in the younger ages include: the increase in separation and divorce among the young; the continuing pattern for mothers to obtain custody of children when a marriage is legally or otherwise dissolved;⁹ the rise since the 1960s in the parenting of children, and headship of families by the never-married, especially never-married females; and the continuing greater propensity for men of all ages to remarry.

Divorced family heads were most frequent in Ontario, Alberta and British Columbia in 1971. This is not surprising since these three provinces had the highest divorce rates (number of divorces per 100,000 of the population) among the provinces in 1971, and indeed for the years previous to 1971, as shown in *Table 2.15*. The abrupt and enormous rise in the divorce rate in 1969 in Canada and in all provinces was undoubtedly due to the fact that in 1968 Canada's divorce law was liberalized and facilitated divorce for both the petitioners and the courts.

From 1971 to 1976, divorce rates rose in all provinces and the increase in Quebec's divorce rate was particularly large,

exceeding that of Ontario in 1974, 1975 and 1976. By 1977, divorce rates were again higher in Ontario than in Quebec, although the divorce rate in the latter province remained high.

Pattern of Family Size According to Number of Children Under 25 Years in Husband-wife and Lone-parent Families, 1971 and 1976

Husband-wife and lone-parent families showed somewhat similar changes in the pattern of family size during the 1971 to 1976 period (*Table 2.16*). In both types of families there was an increase in one-child families, the increase being minimal for two-parent, and greater for one-parent families. The growing convergence on the two-child family was just about the same for both family types as were the slight declines in three- and four-child families, and the greater declines in families with five or more children under 25 years of age at home.

However, in 1971 and 1976 more husband-wife family heads than heads of lone-parent families reported no children under 25 years of age at home. Couples with no children are mostly a mix of young people who have not yet started families, and older couples either in the "empty nest" stage, or with only children 25 years of age and over at home (see "Definitions"). By contrast, lone-parent families had higher proportions of one child present than husband-wife families in 1971 and 1976. An increasing number of lone-parent family heads in the younger ages are separated or divorced while still in their prime childbearing years. It is not surprising, therefore, that lone-parent families with one child were most frequent in both 1971 and 1976 in the provinces which in recent years have had the highest divorce rates: Ontario, Alberta and British Columbia. Indeed, in these provinces lone-parent family heads with one child at home increased their percentage shares over 1971-76 from 37% to 39% in Ontario, from about 35% to 38% in Alberta, and from approximately 38% to 41% in British Columbia (*Chart 2.17*).

Husband-wife and lone-parent families with two children were generally less frequent in the Atlantic provinces and Quebec in 1971 and 1976 than in Ontario and the Western provinces, because of the incidence of larger families in the Atlantic provinces as well as in Quebec. In this respect, Saskatchewan was an exception, resembling more the Atlantic provinces.

Changing Pattern of Children Under 25 Years of Age Living in Husband-wife and Lone-parent Families, 1931-76

On the whole, it would seem that increases in marriage, in early childbearing, as well as improvements in longevity had the effect of increasing, to about 1966, the percentage of children living with two parents. On the other hand, it has become more probable since 1966 that children in their formative years will be living in families headed by a lone parent, a parent whose marriage has been dissolved by separation or divorce (rather than by death), or who became a never-married parent, either voluntarily or otherwise.

Increases in children under 25 years of age living in lone-parent families from 1966 to 1976 were mainly due to more children living with divorced parents, particularly divorced mothers. The percentage of children living with divorced mothers doubled over 1971-76 and rose only slightly for divorced fathers. This is because, as already noted, it is still usually the mother who retains custody of the children and also because men remarry more readily than women (*Tables 2.18 and 2.19*).

Changing Age Composition of Children in Husband-wife and Lone-parent Families, 1961-76

The trend in the median age of children in all families has already been described as declining from 1941 to 1956, and rising since the latter date. Because most children live in two-parent families, the level and movement in the median age of children in such families is very close to that for all families. By contrast, the median age of children in lone-parent families declined from 1941 to 1961 and rose slightly after that date, with only a small fluctuation apparent in 1971 (*Chart 2.11*).

The median age of children in lone-parent families has been consistently higher than that of children in two-parent families, revealing the differences in the age composition of children in these two types of families. However, these differences seem to be narrowing and a growing similarity in the movements in the median age and in the age composition of children in husband-wife and lone-parent families has gradually emerged in the relevant statistics in recent years. These changes are in accord with the already noted shift in the dissolution of families at younger ages of parents and children. For example, the age composition of children in both husband-wife and lone-parent families reveal the effects of the drastic decline in fertility in Canada and the reduced numbers of children in the youngest ages in recent years.

Nevertheless, children continue to be older, generally speaking, in lone-parent families than in husband-wife families, and this pattern was more pronounced in the Atlantic provinces and Quebec in both 1971 and 1976.

Family Income in Canada, 1967-76

The real income of Canadian census families increased appreciably over the nine years from 1967 to 1976. Median income rose by 46.6% and average income by 47.7% over 1967 to 1976. Families with incomes of \$10,000 or more which constituted 54.7% of all families in 1974, rose to 55.2% in 1975 and again to 57.9% in 1976. Note also the consistent increases in the proportion of families in the \$15,000 and over income ranges from 1971 to 1976 (*Table 2.20*).

Part of this increase in the real income of all Canadian census families may be attributed to the growth in two or more income-earner families.¹⁰ The contribution of the increased labour force participation of women to this trend is obvious.

Since 1971 real average income has increased more or less at the same pace for families with one, two, or three children. In 1976, average real income for families with one, two or three children was similar, at around \$13,000. More striking is the fact that of all families with children under 16, average income was lower for those with four or more children under 16 at home for most years from 1971 to 1976. In other words, there is an inverse relationship between number of children and income (*Table 2.21*).

The level of average real income for families with no children under 16 at home was only slightly below that for families with one, two or three children. This is most likely because of the stage of the life cycle of families with no children. Although some of these families may have more than one income earner, they are a mix of young families, that is, those who have just started to tap their earning potential, and of elderly families, for whom income may also be low, since they have passed the stage of highest earning capacity.

Income of Husband-wife and Lone-parent Families, 1971-76

It is increasingly recognized that the resources available to families determine, in large part, the opportunities available to children, particularly insofar as preparation for life (for example, education), is concerned.

From 1971 to 1976, average real income of families with female heads fluctuated at around one half of average real income of husband-wife families with male heads under 45 years of age, and with children present (*Table 2.22*).¹¹ The increase in average real income of all female-headed families was very low compared with that for husband-wife families with heads under 45 and with children at home. It is also obvious that average family income in current and constant (1971) dollars is higher for lone-parent families with male heads than for those with female heads. Average family income is and has remained lowest for lone-parent families with female heads. This is especially so for female heads in the ages 15-34 who are, by implication, parents of young children, and of necessity often the sole breadwinners in the family.

Information from a recent study based on income estimates for economic families demonstrates some of the recent changes, up to and including 1977, in the family incomes of two-parent and lone-parent families, and the implications of such changes for the condition and welfare of dependent children in lone-parent families in Canada, particularly those headed by females. Although 1977 family income estimates seem to indicate some small improvement in the income position of lone-parent female heads of economic families, as compared with 1975, further and more detailed information is required to determine whether this signals the beginning of an upward trend, and what the regional pattern of this trend will be.¹²

Regional Differences in Average Family Income, 1971-76

From 1971 to 1976, average income of census families in both current and constant (1971) dollars was highest in Ontario and British Columbia and lowest in the Atlantic provinces (*Table 2.23*).

Of the three Prairie provinces, Alberta had the highest average income. However, this was lower than in British Columbia and Ontario.

The Atlantic provinces had the highest percentage of economic families with "low income" among the regions (*Table 2.24*). Although the information cross-classified by sex of head and by number of dependent children at home is not available according to region, it can be surmised that the already-noted higher incidence of "low income" in female-headed families, and in families with larger numbers of dependent children at home are most likely more pronounced in the Atlantic provinces than in the other regions.¹³

Conclusion

In general, it has been shown that most Canadians still choose traditional family forms, and the vast majority of them, the two-parent-and-children nuclear unit. However, there has been a gradual and perceptible transformation in their attitudes and actions respecting its purpose, continuity and permanence. Canadians no longer consider the relationship and the family unit created by first marriage as necessarily lifelong and primarily oriented toward childbearing and child-rearing.

On the average, couples are having fewer children, and more and more of them only two children. This does not

mean that they are less interested in children and in parenthood. Rather, decisions about family size are increasingly made in rational terms, on the basis of a variety of social, economic, demographic, housing, and related factors, and competing priorities, which determine how many children Canadian couples feel they can comfortably raise and educate.

Furthermore, if a marriage does not work, or is not satisfactory to one or both parties, it may be voluntarily dissolved, even if young children are involved, and one or both spouses thus freed will in many cases try again a new union with another partner. Accordingly, there has been a rise in the frequency of family dissolution and reformation. Since family reformation does not always follow family dissolution, there has been an increase in both absolute and relative terms in lone-parent families, and particularly in such families headed by females in the younger ages with dependent children at home. The recent growth in never-married parenthood in Canada has added to this trend, because most never-married family heads are females who have chosen to parent and rear children born outside of marriage.

The various statistics presented in this chapter reveal the effects and possible implications of these developments upon Canadian children, particularly those in the dependent ages, in lone-parent families, and in different regions of Canada.

In demographic and statistical terms, low income families, lone-parent families, and families disadvantaged in other ways still constitute a very small proportion of all Canadian families. Nevertheless, their problems in human terms are important. Psychologists, social scientists and a variety of social practitioners must be prepared to examine, assess, treat and resolve the problems that the apparent continuing increase in such families is bound to create at the individual, family unit, and community levels in this country.

In Canada, a goal to be aimed for is the maximization of our children's "life chances". The availability of opportunities, and the required economic means to develop their innate or acquired capacities and abilities would in turn permit this country's future adults to contribute to the development and to the enhancement of the quality of life.

Definitions

Census Family

Reasonably comparable statistics on Canadian families and on children 0-24 at home exist since 1941, when the "census family" concept was introduced in the Canadian census. This concept defines the family as generally consisting of:

... a husband and wife (with or without children who have never married, regardless of age), or a lone parent, regardless of marital status, with one or more children (who have never married, regardless of age), living in the same dwelling.

A family with both spouses or two parents present is referred to as a "husband-wife family". The term "lone-parent" family was officially adopted in the 1976 Census to describe families with one parent only, of married (spouse absent), separated, divorced, widowed, or never-married marital status, and is used accordingly in this chapter.

In both the 1971 and 1976 family data, persons living in a "common-law" and "consensual" or "casual" union were included as "now married". Also, in the 1976 publication, the universe of census families covered private households in Canada only, excluding those in collective households and in households abroad. This change has not significantly altered

the comparability of the statistics on families and children as used for this chapter. Except where indicated, the tables and charts used in this chapter are based on the "census family" concept.

Census Family Head

In the 1976 Census, changes in the definition of *household head* and in the preparation, tabulation and publication of *family* statistics interrupted the data series for family heads. However, for purposes of tracing trends on a comparable data base, including 1976 data, various family statistics in this chapter were compiled according to the pre-1976 concept of *family head*. In the tables and charts presented here, therefore, all heads of husband-wife families with both spouses present are exclusively male. And as in pre-1976 censuses, only those women with no spouse present are designated as heads of families.

Economic Family

The economic family is defined as two or more persons resident in the same household, and related by blood, marriage or adoption. This is the same definition of the family used in the United States Census.

Family Income

Statistics Canada's Consumer Income and Expenditure Division prepares estimates of family income for both census and economic families according to the pre-1976 Census concept of family head. This facilitated the use in this study of the statistics on family income from the Survey of Consumer Finances.

Children in Census Families

In the Canadian census publications from 1941 to 1971, children in census families were generally considered as sons and daughters of all ages who had never married and were living at home. Children who had ever been married, regardless of age, were not considered as members of their parents' family, even though living in the same dwelling. Unmarried sons and daughters 25 years of age and over, living at home on the census date were considered as "children" in a broad sense, and appeared only in a few tabulations. Most tables featuring statistics on children referred to those 0-24 years of age. Included as children also were adopted and stepchildren, foster children for whom no pay was received, as well as guardianship children or wards under 21 years of age, residing in the same dwelling.

A reassessment of concepts, tabulation methods, enumeration procedures and coverage in planning the 1976 Census statistics on families and children led to a number of changes designed to improve the quality of these statistics. The conceptual changes in particular were intended to make the data on children accord faithfully with the meaning inherent in the census concepts used. However, these changes are not considered to unduly affect comparability, particularly since, for purposes of this chapter, 1976 statistics for children 0-24 years of age only, and for the age sub-groups 0-5, 6-14, 15-18 and 19-24 were retrieved to preserve a valuable data series from 1941 to 1976 inclusive.

One important aspect of these data should be noted. By definition, a lone-parent family must have a never-married son or daughter living at home. Therefore, lone-parent families with no children under 25 years of age at home are mainly those families in which the head is in the older ages and may have no children under 25 years, but must have a never-married son(s) and/or daughter(s), 25 years of age and

over, living at home, in order to be classified as a family head.

Further detailed information on concepts and data are available from the Housing and Social Characteristics Staff, and the Consumer Income and Expenditure Division, Social Statistics Field, Statistics Canada, Ottawa.

Footnotes

¹For an explanation of "census family", "economic family", "family head", "husband-wife family", "lone-parent family", "children", and other aspects of the concepts used in this chapter, see the "Definitions" above.

²Estimates of income of census families and economic families are prepared from information obtained from the Survey of Consumer Finances, by the Consumer Income and Expenditure Division of Statistics Canada. This chapter uses income estimates to 1976 only. For comparable as well as more detailed income data for 1977, and their analysis, see Chapter 6, in this volume; "Single parent families in Canada, 1977", Consumer Income and Expenditure Division, Statistics Canada, 1979; and "Family Incomes, Census Families", Catalogue 13-208, 1979.

³Ryder, Norman B., "The Reproductive Renaissance North of the Rio Grande", The Annals of the American Academy of Political and Social Science, March, 1978, Philadelphia; Easterlin, Richard, "The American Babyboom in Historical Perspective", American Economic Review, Vol. 60, No. 5, December, 1951.

⁴Collishaw, Neil, "Fertility in Canada", 1971 Census of Canada, Catalogue 99-706; Vital Statistics, Vol. I, Births, Catalogue 84-204, 1975 and 1976.

⁵For a detailed discussion of the reasons for this phenomenon, see Wargon, Sylvia T., "Canadian households and families. Recent demographic trends", 1971 Census of Canada, Analytical Study, Catalogue 99-753.

⁶The increasing predominance of the two-child family, so distinctly evident in the census fertility data does not appear as clearly in the census family data. This is because the census fertility data represent women both in and past the childbearing ages who are reporting on a census questionnaire the number of children they have ever had, even though some of these children may have died, or are living elsewhere. On

the other hand, the statistics for census families have been compiled according to the characteristics of preponderantly male heads reporting only children listed as members of the same family household at the time of the federal census enumeration.

⁷The Canadian census questionnaire up to and including 1976 asked information on first marriage only. Consequently, some of the husband-wife families counted were those created by the remarriage of one or both spouses.

⁸Certain important reservations apply to the statistics for lone-parent family heads by age and sex in Tables 2.13 and 2.14. It appears that in the 1971 Census of Canada there was an over-estimation of lone-parent family heads, in the youngest ages, and particularly for male heads. It has not been ascertained how much of the 1966-71 increase in lone-parent family heads was real or intrinsic, and how much was due to this over-estimation.

⁹This pattern seems to be changing slowly. More fathers and children are now being "deserted" by wives and mothers. In addition, more fathers are obtaining custody of children either through the courts or because mothers willingly give up their children. However, on the whole, custody of children is still mainly granted to mothers.

¹⁰For a discussion of recent trends in family size as related to family income, see Love, Roger: Income distribution and inequality in Canada: an analysis of census data, 1971 Census Analytical Study, Catalogue 99-755, and MacLeod, Neil: Incomes of single-parent and multi-earner families, Staff Working Paper 7709, Policy Research and Long Range Planning Branch, Health and Welfare Canada, Ottawa, 1977.

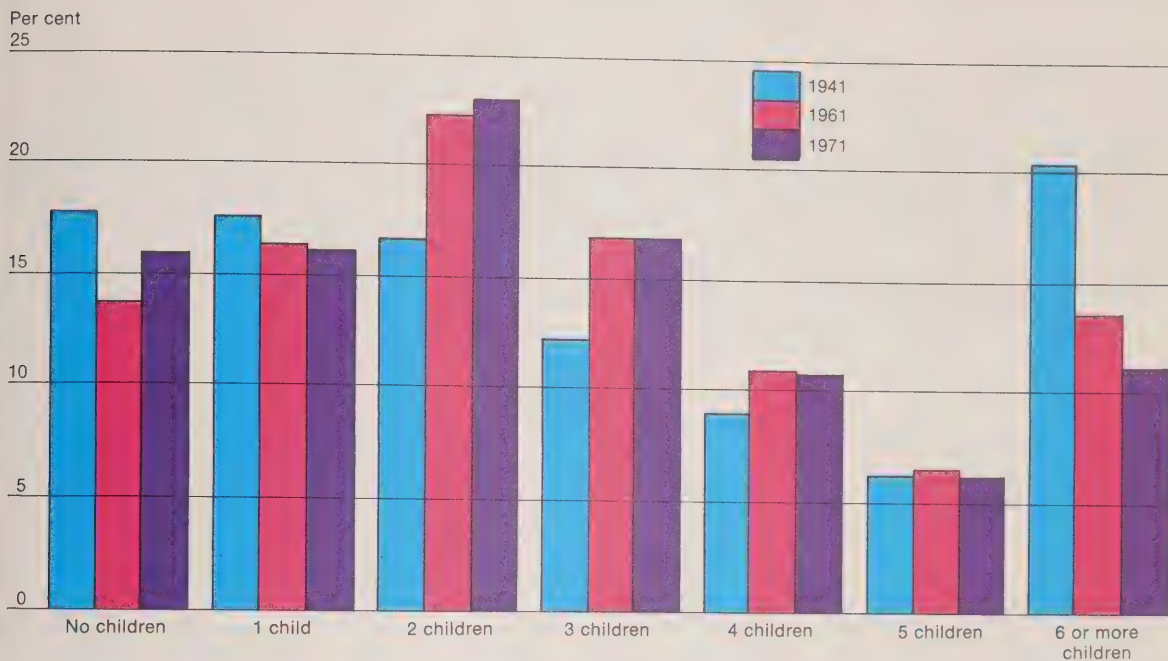
¹¹In the Survey of Consumer Finances, the traditional concept of family head as in the pre-1976 censuses, has been retained. Hence, in all husband-wife families, the husband, if present is designated the family head.

¹²See Single parent families in Canada, 1977, Consumer Income and Expenditure Division, Statistics Canada, Ottawa, 1979.

¹³Statistics on "low income" refer to income below the 1976 "low income cut-offs". This latter term replaces the earlier phrase "poverty lines" in the data compiled by the Survey of Consumer Finances.

CHART 2.3

Distribution of women ever married by number of children born, 1941, 1961 and 1971



Source: 1941 Census of Canada, Vol. I; 1961 Census of Canada, Catalogue 98-507; 1971 Census of Canada, Catalogue 93-718.

TABLE 2.4
Live birth rates, by province, 1931-76¹

	1931	1941	1951	1961	1971	1976
	<i>rate per 100,000 population</i>					
Newfoundland	23.3	27.3	32.5	34.1	24.5	20.0
Prince Edward Island	21.3	21.6	27.1	27.1	18.8	16.4
Nova Scotia	22.6	24.1	26.6	26.3	18.1	15.5
New Brunswick	26.5	26.8	31.2	27.7	19.2	17.4
Quebec	29.1	26.8	29.8	26.1	14.8	15.5
Ontario	20.2	19.1	25.0	25.3	16.9	14.8
Manitoba	20.5	20.3	25.7	25.3	18.2	16.4
Saskatchewan	23.1	20.6	26.1	25.9	17.3	17.3
Alberta	23.6	21.7	28.8	29.2	18.8	18.0
British Columbia	15.0	18.4	24.1	23.7	16.0	14.5
Yukon	10.0	14.4	38.0	38.1	27.5	20.6
Northwest Territories	15.7	26.3	40.6	48.6	37.0	27.8
Canada	23.2	22.4	27.2	26.1	16.8	15.7

¹Birth rates for selected census years only.

Source: Vital Statistics, Births, Catalogue 84-204, 1976.

TABLE 2.5
Census families by age of family head and number of children, 1941-76

Age of head	Number of children under 25 at home					
	0	1	2	3	4	5 or more
	<i>per cent</i>					
1941						
15-34 years	31.1	32.0	19.7	9.2	4.3	3.7
35-44 "	14.3	21.1	22.5	14.9	9.6	17.5
45-64 "	27.1	22.5	17.3	11.5	7.5	14.1
65 years and over	76.4	14.2	5.0	2.2	1.1	1.1
Total	31.3	23.5	17.5	10.6	6.4	10.7
1951						
15-34 years	24.3	31.1	25.3	11.3	4.7	3.3
35-44 "	12.7	20.7	26.4	16.9	9.6	13.6
45-54 "	21.9	24.2	20.3	12.4	7.5	13.6
55-64 "	49.5	24.0	11.9	6.3	3.5	4.8
65 years and over	83.0	10.8	3.4	1.4	0.7	0.7
Total	32.3	23.5	19.8	10.9	5.8	7.8
1961						
15-34 years	19.0	26.1	26.6	14.7	8.2	5.3
35-44 "	9.0	15.3	25.8	21.5	12.0	16.3
45-54 "	19.0	23.0	22.8	14.4	8.1	12.7
55-64 "	51.7	23.8	11.8	5.6	3.2	4.0
65 years and over	86.7	8.7	2.6	1.0	0.5	0.5
Total	29.3	20.2	20.6	13.4	7.5	8.9
1971						
15-34 years	25.9	28.3	26.7	12.1	4.6	2.4
35-44 "	6.8	12.6	26.9	23.8	14.8	15.0
45-54 "	17.1	21.8	23.8	16.0	9.7	11.6
55-64 "	50.1	25.0	12.9	5.4	2.9	3.1
65 years and over	87.5	8.3	2.5	0.9	0.4	0.4
Total	30.5	20.5	21.3	13.4	7.3	7.1
1976						
15-34 years	30.7	28.8	28.2	9.1	2.4	0.9
35-44 "	7.7	14.6	33.1	24.4	12.2	7.9
45-54 "	18.6	23.2	25.2	16.6	9.0	7.4
55-64 "	53.7	24.9	12.0	5.2	2.4	1.9
65 years and over	90.1	6.8	1.9	0.7	0.3	0.2
Total	33.8	21.4	23.1	12.3	5.6	3.8

Source: 1941 Census of Canada, Vol. V; 1951 Census of Canada, Vol. III; 1961 Census of Canada, Catalogue 93-516; 1971 Census of Canada, Catalogue 93-719; 1976 Census of Canada, unpublished data.

TABLE 2.6
Average size of census family, by province, 1971 and 1976

	Average number of persons per family		Average number of children 0-24 per family	
	1971	1976	1971	1976
Newfoundland	4.4	4.0	2.4	2.0
Prince Edward Island	4.0	3.7	2.0	1.7
Nova Scotia	3.8	3.5	1.8	1.6
New Brunswick	4.0	3.7	2.0	1.7
Quebec	3.9	3.5	1.9	1.5
Ontario	3.6	3.4	1.6	1.4
Manitoba	3.6	3.4	1.7	1.4
Saskatchewan	3.7	3.5	1.8	1.5
Alberta	3.7	3.5	1.8	1.5
British Columbia	3.5	3.3	1.6	1.3
Yukon and Northwest Territories	4.3	4.0	2.4	2.1
Canada	3.7	3.5	1.7	1.5

Source: 1971 Census of Canada, Catalogue 93-714; 1976 Census of Canada - Families, Catalogue 93-821.

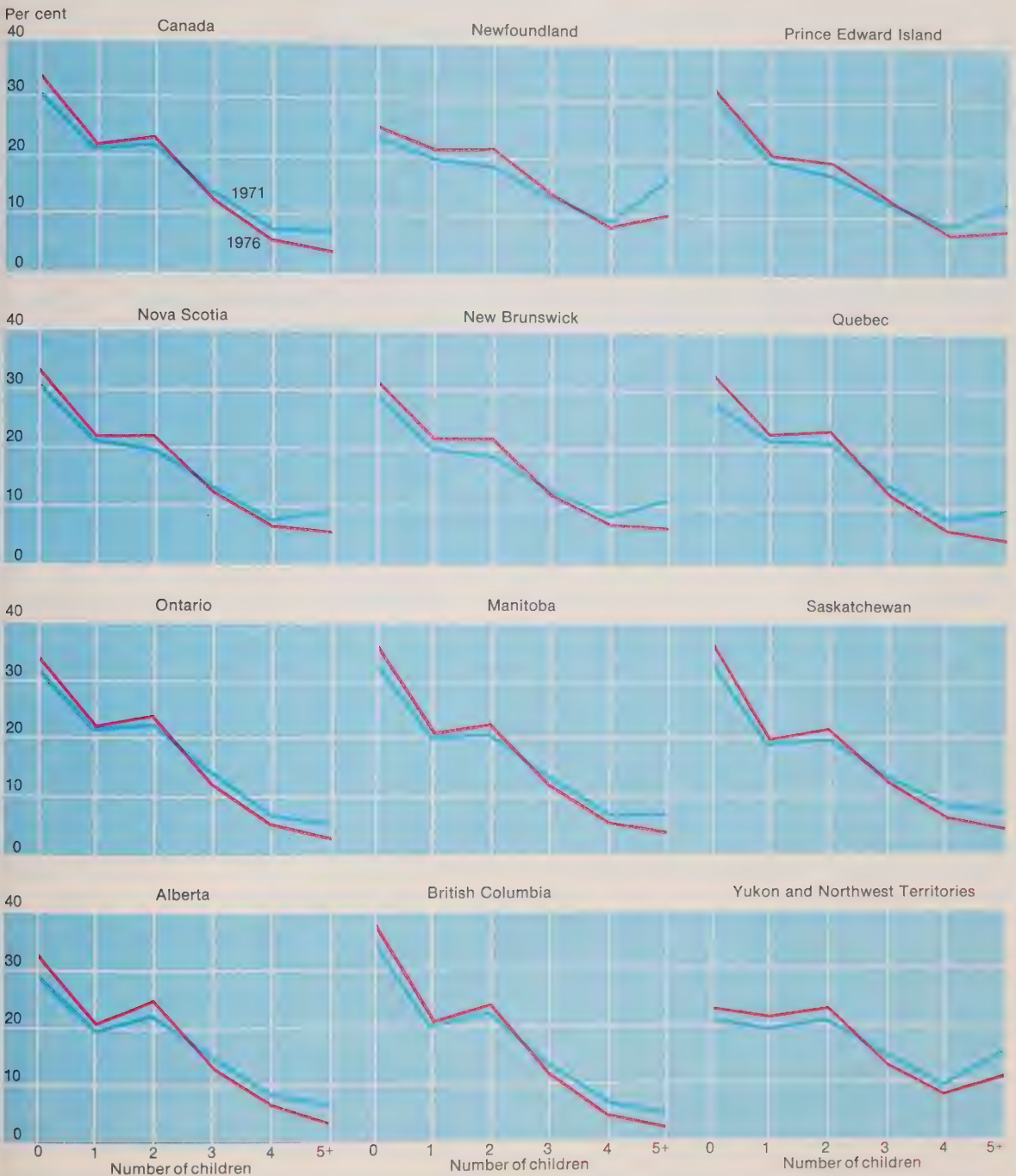
TABLE 2.7
Children in census families,¹ 1961-76

	1961	1966	1971	1976
	<i>000s</i>			
Number of children aged:				
Under 6 years	2,662	2,622	2,197	2,045
6-14 years	3,447	3,863	4,087	3,680
15-18 years	1,060	1,352	1,581	1,696
19-24 years	609	819	984	1,100
Total 15-24 years	1,669	2,171	2,565	2,795
Total number of children	7,777	8,656	8,849	8,521
	<i>per cent</i>			
Proportion of all children aged:				
Under 6 years	34.2	30.3	24.8	24.0
6-14 years	44.3	44.6	46.2	43.2
15-18 years	13.6	15.6	17.9	19.9
19-24 years	7.8	9.5	11.1	12.9
Total 15-24 years	21.5	25.1	29.0	32.8
Total	100.0	100.0	100.0	100.0

¹Refers to children under 25 years of age living at home.

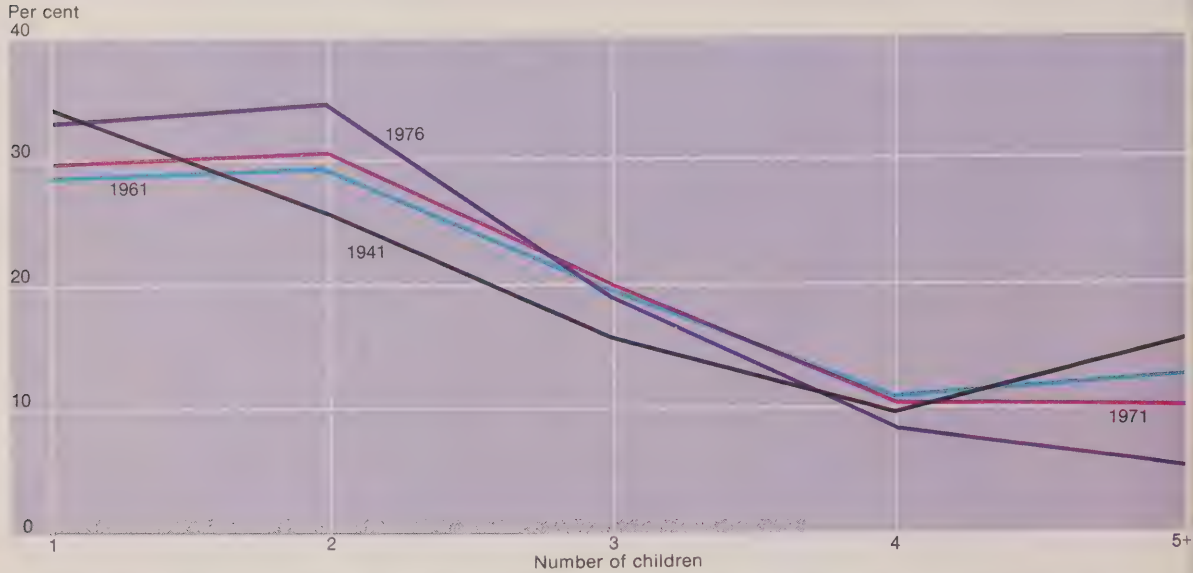
Source: 1961 Census of Canada, Catalogue 93-515; 1966 Census of Canada, Catalogue 93-612; 1971 Census of Canada, Catalogue 93-718; 1976 Census of Canada, unpublished data.

CHART 2.8
Percentage distribution of census families, by number of children under 25 years of age living at home, by province, 1971 and 1976



Source: 1971 Census of Canada, Catalogue 93-718; 1976 Census of Canada, unpublished data.

CHART 2.9
Distribution of census families with children, by number
of children under 25 years of age living at home, 1941-76



Source: 1941 *Census of Canada*, Vol. V; 1961 *Census of Canada*, Catalogue 93-516; 1971 *Census of Canada*, Catalogue 93-718; 1976 *Census of Canada*, unpublished data.

TABLE 2.10
Census family heads by marital status, 1941-76

	1941	1951	1956	1961	1966	1971	1976
	<i>000s</i>						
Married family heads							
Currently married ¹	2,203	2,962	3,393	3,800	4,154	4,605	5,175
Separated ²	44	94	84	109	112	127	146
Spouse absent	..	..	..	..	..	32	30
Total, married ³	2,247	3,056	3,477	3,909	4,266	4,764	5,351
Widowed	225	217	217	214	227	218	230
Divorced	33 ⁴	10	12	16	22	57	114
Single, never-married	5	5	5	9	11	37	39
Total, family heads	2,510	3,287	3,712	4,147	4,526	5,076	5,734
	<i>per cent</i>						
Married family heads							
Currently married ¹	87.8	90.1	91.4	91.6	91.8	90.7	90.3
Separated ²	1.8	2.9	2.3	2.6	2.5	2.5	2.5
Spouse absent	..	..	..	..	..	0.6	0.5
Total, married ³	89.5	93.0	93.7	94.2	94.3	93.9	93.3
Widowed	8.9	6.6	5.8	5.2	5.0	4.3	4.0
Divorced	1.3 ⁴	0.3	0.3	0.4	0.5	1.1	2.0
Single, never-married	0.2	0.1	0.1	0.2	0.2	0.7	0.7
Total, family heads	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹This is the count of husband-wife families.

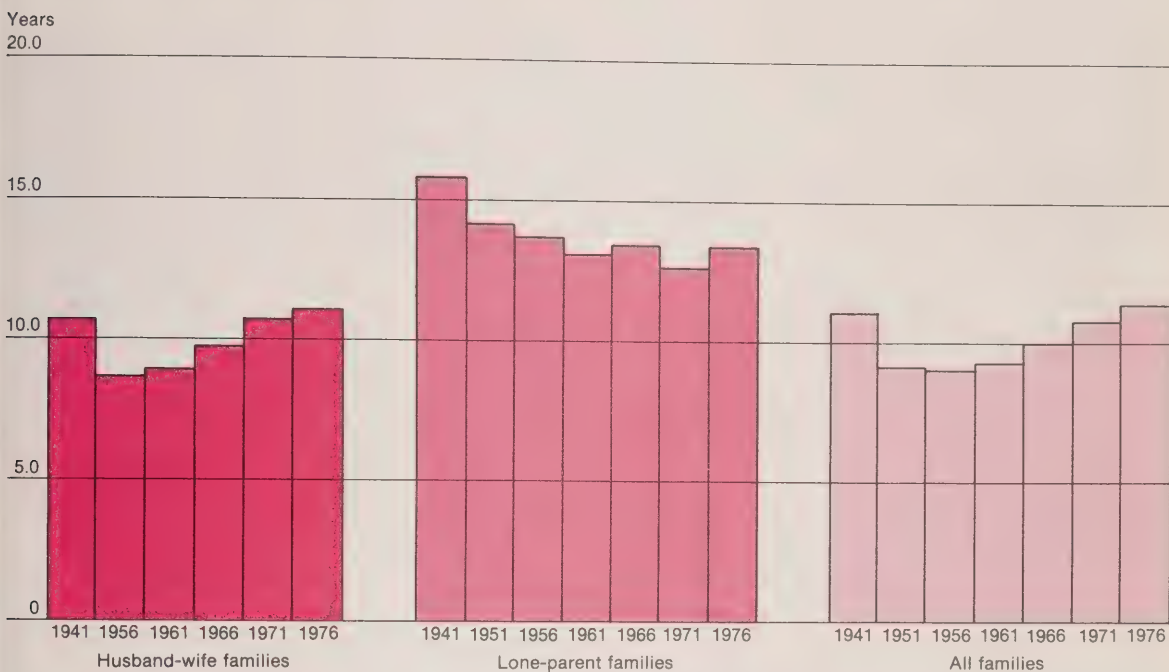
²Includes spouse absent until 1971.

³Includes those married, spouse absent and separated.

⁴Includes those permanently separated.

Source: 1941 *Census of Canada*, Vol. I; 1951 *Census of Canada*, Vol. III; 1956 *Census of Canada*, Vol. I; 1961 *Census of Canada*, Catalogue 93-516; 1966 *Census of Canada*, Catalogue 93-608; 1971 *Census of Canada*, Catalogue 93-718; 1976 *Census of Canada*, Catalogue 93-809.

CHART 2.11
 Median age of children under 25 years of age living at home in husband-wife
 and lone-parent census families, 1941-76



Source: 1941 Census of Canada, Vol. V; 1951 Census of Canada, Vol. III; 1956 Census of Canada, Vol. I; 1961 Census of Canada, Catalogue 92-547; 1966 Census of Canada, Catalogue 93-612; 1971 Census of Canada, Catalogue 93-718; 1976 Census of Canada, unpublished data.

TABLE 2.12
 Marital status of brides and bridegrooms, 1941-76

	Brides				<i>per cent</i>	Bridegrooms			
	Single	Widowed	Divorced	Total		Single	Widowed	Divorced	Total
1941 ¹	96.3	2.7	1.0	100.0	95.2	3.7	1.0	100.0	
1951	91.8	5.0	3.2	100.0	91.6	5.0	3.4	100.0	
1961	91.1	5.0	3.8	100.0	91.5	4.5	3.9	100.0	
1967	91.3	4.4	4.3	100.0	91.6	3.8	4.7	100.0	
1968	91.3	4.4	4.4	100.0	91.6	3.7	4.7	100.0	
1969	89.3	4.3	6.4	100.0	89.4	3.7	6.9	100.0	
1970	88.9	4.2	6.9	100.0	88.8	3.6	7.6	100.0	
1971	88.4	4.1	7.5	100.0	88.3	3.6	8.1	100.0	
1972	88.4	3.9	7.7	100.0	88.1	3.5	8.5	100.0	
1973	87.5	3.9	8.6	100.0	87.1	3.4	9.5	100.0	
1976	84.3	3.8	11.9	100.0	83.3	3.3	13.4	100.0	

¹Does not include Newfoundland or Yukon and Northwest Territories.

Source: Vital Statistics, Marriages and Divorces, Catalogue 84-205, 1976.

TABLE 2.13
Age and sex of lone parents, 1941-76

	1941	1951	1961	1966	1971	1976
				<i>per cent</i>		
Male	26.3	23.0	21.6	19.2	21.0	17.0
Female	73.7	77.0	78.4	80.8	79.0	83.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Age group:						
15-34 years	9.3	14.0	14.3	15.3	23.5	26.3
35-44 years	14.8	16.9	18.5	19.3	21.0	21.7
45-64 years	47.3	40.3	38.9	39.9	38.3	36.7
65 years and over	28.6	28.8	28.3	25.6	17.1	15.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Lone parents as a % of all census family heads:						
Male	3.2	2.3	1.8	1.6	2.0	1.7
Female	9.0	7.6	6.6	6.6	7.5	8.1
Total	12.2	9.9	8.4	8.2	9.4	9.8
Total number of lone parents	000s 307	326	347	372	479	559

Source: 1941 *Census of Canada*, Vol. I; 1951 *Census of Canada*, Vol. III; 1961 *Census of Canada*, Catalogue 93-516; 1971 *Census of Canada*, unpublished data and 1976 *Census of Canada*, Catalogue 93-810 and unpublished data.

TABLE 2.14
Percentage distribution of lone-parent families by age and sex of head, 1966, 1971 and 1976

	Male heads			Female heads			Total lone-parent family heads		
	1966	1971	1976	1966	1971	1976	1966	1971	1976
Under 25 years	3.4	4.3	3.4	4.2	6.6	7.1	4.0	6.1	6.5
25-34 years	7.8	17.1	12.9	12.1	17.6	21.2	11.3	17.5	19.8
35-44 years	17.0	22.3	22.7	19.8	20.6	21.6	19.3	21.0	21.8
45-54 years	22.3	22.2	26.0	22.8	22.6	21.4	22.7	22.6	22.1
55-64 years	18.6	15.8	16.9	16.8	15.7	14.2	17.2	15.8	14.6
65 years and over	30.9	18.3	18.0	24.3	16.7	14.6	25.6	17.1	15.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1966 *Census of Canada*, Catalogue 93-612; 1971 *Census of Canada*, Catalogue 93-721; 1976 *Census of Canada*, Catalogue 93-825. *Canada*, Vol. IV, Tables 24 and 25, Catalogue 93-825.

TABLE 2.15
Divorce rates by province, 1 1966-76

	1966	1968	1970	1974	1976	1977
	<i>rate per 100,000 persons</i>					
Newfoundland	2.2	3.0	27.1	55.5	76.0	81.1
Prince Edward Island	16.6	18.2	59.1	82.3	98.1	113.1
Nova Scotia	53.7	64.8	105.2	195.6	211.6	215.7
New Brunswick	25.1	22.9	61.6	114.1	138.5	140.0
Quebec	17.1	10.2	80.9	200.1	243.6	230.8
Ontario	58.9	69.3	164.9	188.7	224.9	235.7
Manitoba	54.4	47.9	125.5	177.6	190.0	202.2
Saskatchewan	33.6	40.0	92.6	114.6	131.0	157.4
Alberta	107.1	125.7	236.4	288.6	309.9	307.6
British Columbia	113.4	110.8	240.2	285.6	333.7	330.4
Yukon	146.0	200.0	241.2	237.1		
Northwest Territories	10.4	36.7	51.5	157.3	194.0	194.4
Canada	51.2	54.8	139.8	200.6	235.8	237.7

¹Divorce laws were liberalized in Canada in 1968.

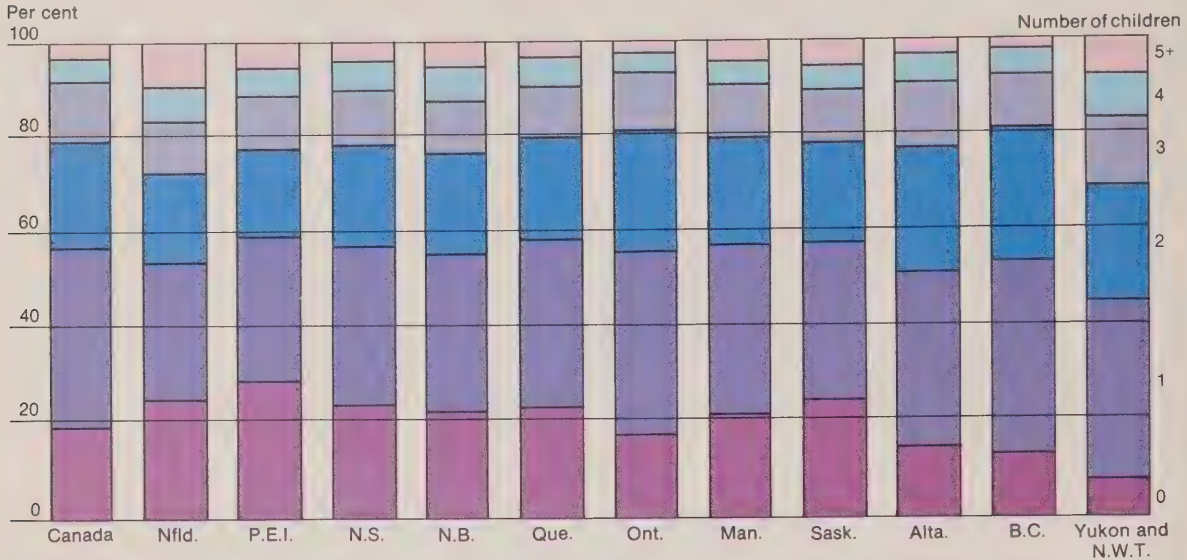
Source: *Vital Statistics: Marriages and Divorces*, Catalogue 84-205, 1976.

TABLE 2.16
Distribution of husband-wife and lone-parent families by number of children under 25 years of age living at home, 1971 and 1976

	Number of children under 25 years of age living at home						Total
	None	1	2	3	4	5 or more	
	<i>per cent</i>						
Husband-wife families							
1971	31.7	19.1	21.2	13.5	7.4	7.1	100.0
1976	35.4	19.7	23.1	12.4	5.6	3.8	100.0
Lone-parent families							
1971	19.0	34.4	21.8	12.0	6.3	6.5	100.0
1976	18.8	37.3	23.6	11.4	5.1	3.8	100.0
All families							
1971	30.5	20.5	21.3	13.4	7.3	7.1	100.0
1976	33.8	21.4	23.1	12.3	5.6	3.8	100.0

Source: 1971 *Census of Canada*, Catalogues 93-720 and 93-721; and 1976 *Census of Canada*, unpublished data.

CHART 2.17
Distribution of lone-parent families by number of children under 25 years of age living at home, by province, 1976



Source: 1976 Census of Canada, unpublished data.

TABLE 2.18
Distribution of children living in husband-wife and in lone-parent families, by marital status and sex of lone-parent family head, 1931-76¹

	1931	1941	1951	1956	1961	1966	1971	1976
	<i>per cent</i>							
Husband-wife families	88.1	90.2	92.0	93.4	93.6	93.3	90.4	89.5
Lone-parent families:								
Male head								
Married	0.8	0.4	0.6	0.7	0.7	0.5	1.0	0.8
Widowed	2.8	2.1	1.1	0.8	0.6	0.6	0.6	0.5
Divorced	..	0.2 ²	—	0.1	0.1	0.1	0.2	0.3
Single	..	—	—	—	—	—	0.3	0.1
Total	3.6	2.7	1.8	1.6	1.4	1.2	2.1	1.7
Female head								
Married	1.9	1.2	2.5	1.7	2.1	2.2	3.1	3.3
Widowed	6.3	4.6	3.4	2.9	2.6	2.7	2.9	2.7
Divorced	0.1	1.0 ²	0.2	0.2	0.3	0.4	1.0	2.2
Single	..	0.1	0.1	0.1	0.1	0.1	0.5	0.6
Total	8.3	6.9	6.2	4.9	5.0	5.5	7.5	8.8
Total lone-parent families	11.9	9.6	8.0	6.6	6.4	6.7	9.6	10.5
Total families	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹Newfoundland included in 1951; Yukon and Northwest Territories included in 1961.

²Divorced includes those permanently separated.

Source: 1931 Census of Canada, Vol.V, 1941 Census of Canada, Vol. I and Vol. V, 1951 Census of Canada, Vol. III, 1956 Census of Canada, Vol. I, 1961 Census of Canada, Catalogue 93-516, 1966 Census of Canada, Catalogue 93-612, 1971 Census of Canada, Catalogue 93-721; 1976 Census of Canada, Catalogue 93-825 and unpublished data.

TABLE 2.19
Divorces by number of dependent children, and by party to whom custody was granted, 1973-76

	1973		1974		1975		1976	
	<i>per cent</i>							
Number of dependent children:								
None	43.4		41.3		42.4		44.3	
1 child	22.4		22.8		22.7		22.6	
2 children	18.6		19.6		19.7		19.4	
3 children	9.2		9.7		9.2		8.7	
4 children	4.1		4.1		3.8		3.3	
5 or more children	2.3		2.5		2.2		1.7	
Total	100.0		100.0		100.0		100.0	
Total number of children	36,704		45,019		50,611		54,207	
	Petitioner							
	Husband	Wife	Husband	Wife	Husband	Wife	Husband	Wife
	<i>per cent</i>							
Custody granted:								
To petitioner	37.2	88.4	35.3	87.7	35.8	88.2	38.2	89.7
To respondent	46.1	5.3	48.4	5.8	51.1	6.4	50.7	6.1
To other person or agency	0.5	0.3	0.7	0.4	0.6	0.4	0.4	0.3
No award of custody	16.2	6.0	15.5	6.2	12.5	5.0	10.6	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Vital Statistics, Marriages and Divorces, Catalogue 84-205, 1976.

TABLE 2.20
Percentage distribution of census families by income group, and average and median income of census families, in constant (1971) dollars, 1967-76

	1967	1969	1971	1972	1973	1974	1975	1976
	<i>per cent</i>							
Income group:								
Under \$3,000	10.9	10.5	9.8	8.3	7.2	6.0	6.1	5.6
\$ 3,000-\$ 4,999	14.0	13.4	11.9	11.5	10.7	10.3	10.4	10.7
5,000- 6,999	18.0	14.9	12.5	11.5	11.0	10.2	9.6	9.2
7,000- 9,999	27.3	25.3	22.2	21.4	21.0	19.1	18.9	16.6
10,000- 11,999	11.6	12.9	13.8	14.4	13.6	14.2	13.2	12.3
12,000- 14,999	9.2	11.4	14.0	15.4	15.5	16.7	16.3	16.1
15,000- 19,999	5.8	7.3	10.3	11.1	13.3	14.5	15.5	16.8
20,000 and over	3.1	4.6	5.6	6.5	7.8	9.3	10.2	12.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 8,515	9,282	10,113	10,528	11,047	11,682	11,818	12,576
Median income	\$ 7,689	8,292	9,121	9,668	10,035	10,654	10,747	11,270

Source: Family Incomes, Census Families, Catalogue 13-208, 1976.

TABLE 2.21
Average income in current and constant (1971) dollars of
census families, according to number of children under
16 years, 1971-76

	No children	1 child	2 children	3 children	4 or more children
<i>Current dollars</i>					
1971	9,838	10,312	10,443	10,384	9,913
1972	10,686	11,216	11,243	12,273	10,332
1973	11,970	12,683	13,134	12,993	11,950
1974	13,969	14,475	15,044	16,495	15,130
1975	15,626	16,313	17,376	17,730	16,211
1976	17,837	19,449	19,437	19,543	18,456
<i>Constant (1971) dollars</i>					
1971	9,838	10,312	10,443	10,384	9,913
1972	10,197	10,792	10,728	11,711	9,859
1973	10,621	11,254	11,654	11,529	10,603
1974	11,175	11,580	12,035	13,196	12,104
1975	11,282	11,778	12,546	12,801	11,705
1976	11,979	13,062	13,054	13,125	12,395

Source: *Family Incomes, Census Families*, Catalogue 13-208, 1971-76.

TABLE 2.22
Average income of husband-wife (by family life cycle) and lone-parent families in current and constant (1971) dollars,
1971-76

		All husband- wife families	Age of head, husband-wife families				Lone- parent families	
			Under 45 years		45 years and over		Total	With female head
			No children ¹	With children ¹	No children ¹	With children ¹		
1971	Current dollars	10,511	10,876	10,537	9,775	11,549	5,935	5,486
	Constant (1971) dollars	10,511	10,876	10,537	9,775	11,549	5,935	5,486
1972	Current dollars	11,462	11,739	11,531	10,584	12,846	6,535	6,074
	Constant (1971) dollars	10,937	11,201	11,003	10,099	12,258	6,236	5,796
1973	Current dollars	12,922	13,218	13,015	11,786	14,804	7,502	6,686
	Constant (1971) dollars	11,466	11,728	11,548	10,458	13,136	6,657	5,933
1974	Current dollars	15,205	14,861	15,383	14,030	17,539	8,145	7,554
	Constant (1971) dollars	12,164	11,889	12,306	11,224	14,031	6,516	6,043
1975	Current dollars	17,032	16,907	17,295	15,423	20,109	9,437	8,528
	Constant (1971) dollars	12,297	12,207	12,487	11,136	14,519	6,814	6,157
1976	Current dollars	19,540	19,854	19,942	17,414	22,954	9,997	8,976
	Constant (1971) dollars	13,123	13,334	13,393	11,695	15,416	6,714	6,028

¹Refers to children under 16 years.

Source: *Family Incomes, Census Families*, Catalogue 13-208, 1971-76.

TABLE 2.23
Average income of census families in current and constant (1971) dollars, by region, 1971-76

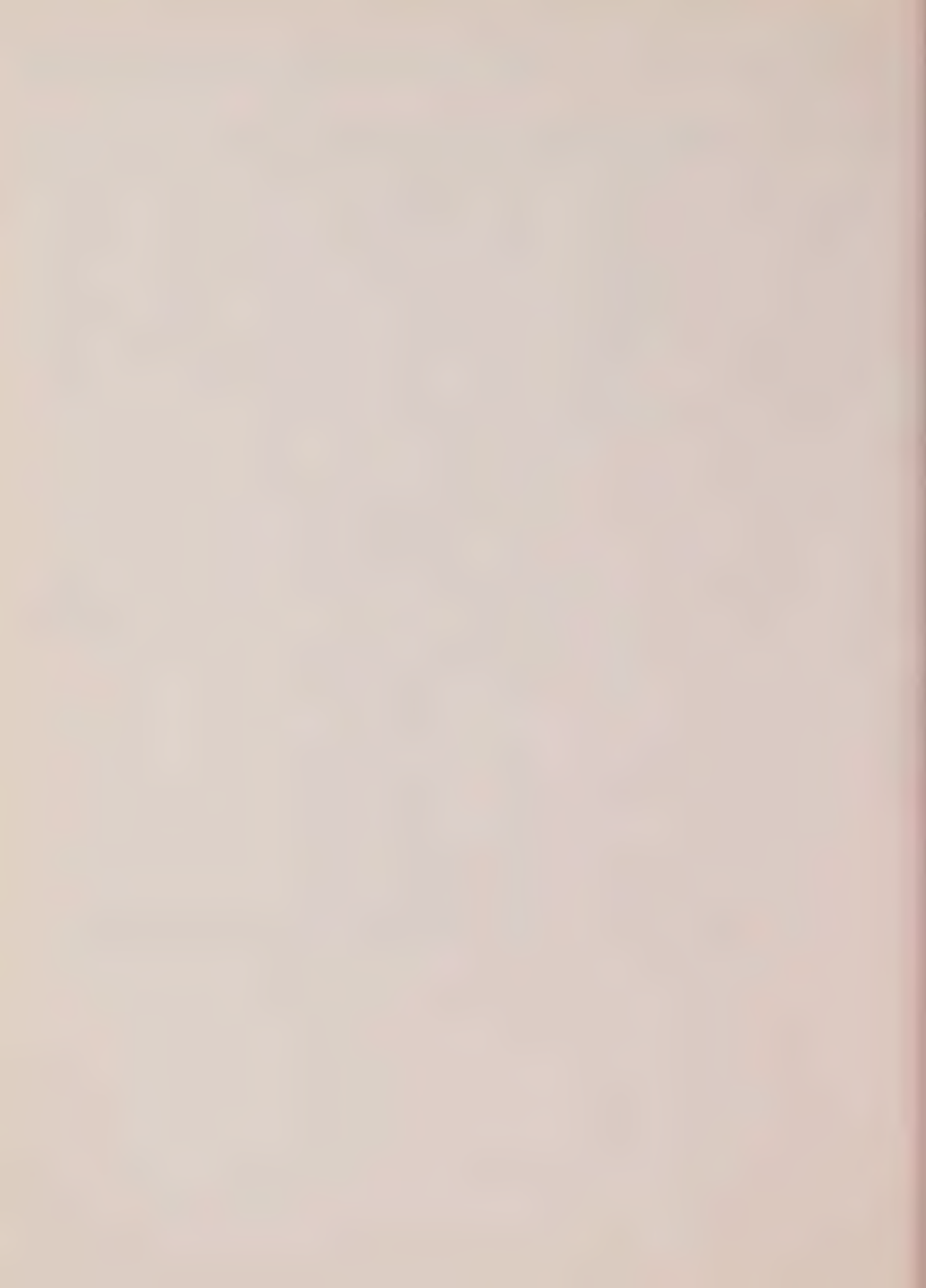
		Canada	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia
1971	Current dollars	10,113	7,505	9,713	11,154	9,222	10,989
	Constant (1971) dollars	10,113	7,505	9,713	11,154	9,222	10,989
1972	Current dollars	11,036	8,665	10,620	12,052	10,382	11,391
	Constant (1971) dollars	10,531	8,268	10,134	11,500	9,906	10,869
1973	Current dollars	12,454	9,501	11,799	13,612	11,651	13,678
	Constant (1971) dollars	11,051	8,430	10,469	12,078	10,338	12,137
1974	Current dollars	14,603	11,191	13,666	15,848	14,643	15,275
	Constant (1971) dollars	11,682	8,953	10,933	12,678	11,714	12,220
1975	Current dollars	16,368	12,909	15,273	17,772	16,059	17,520
	Constant (1971) dollars	11,818	9,321	11,027	12,832	11,595	12,650
1976	Current dollars	18,714	14,680	18,020	19,793	18,522	20,473
	Constant (1971) dollars	12,568	9,859	12,102	13,293	12,439	13,749

Source: *Family Incomes, Census Families*, Catalogue 13-208, 1971-76.

TABLE 2.24
Incidence of low income for economic families, by region,
by sex of family head and by number of children under 16
years of age living at home, 1976

	Per cent of families below revised low- income cut-offs, 1976
Region:	
Atlantic provinces	14.1
Quebec	12.1
Ontario	9.7
Prairie provinces	11.4
British Columbia	11.0
Sex of family head:	
Male	8.2
Female	42.8
Number of children under 16 years of age living at home:	
None	10.0
1 child	10.5
2 children	11.5
3 children	14.4
4 or more children	18.1

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1976.



Health



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Health

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How simple it would be if tubercle bacillus was the only cause of tuberculosis, if animal fat the only cause of coronary artery disease, or if smoking the only cause of lung cancer. This model, however, is far too simplistic to properly explain disease or the lack of it. All of us have inhaled tubercle bacilli; few of us ever developed disease; most of us eat large amounts of animal fat; many of us will escape serious coronary disease. Some of us, though non-smokers, will die of lung cancer.¹

Once man was able to identify causes of disease such as bacteria he was able to abandon earlier theories about how diseases are caused involving appeals to fatalism, vapours of the blood, or evil spirits. This idea no doubt lies behind our strong adherence to the belief that there is something which is "the cause" for each disease or health problem—that MAN plus DISEASE ORGANISM equals DISEASED MAN. In many cases there is no simple, single "cause" which, when present, will automatically result in the occurrence of a disease. Tubercle bacilli are indeed behind tuberculosis, but the inhalation of tubercle bacilli is not enough by itself to bring on the disease. There are many contributing causes such as malnutrition or stress which may aggravate the disease and increase susceptibility to it.

These contributing factors are a mixture of our lifestyle, our living and working environments, and our genetic makeup. We probably escaped tuberculosis for a number of reasons. Our individual immune status or resistance to disease may have had a lot to do with it. As well, the length of exposure to tubercle bacilli or the presence of large numbers of fresh virulent organisms may have been determining factors.

At another level, the distribution and severity of disease are influenced by our levels of stress, freedom from poverty, overcrowded living conditions and nutrition. Our protection comes both from within (host factors) and from without (environmental factors).²

We all implicitly hope that we will not develop cancer, that we will not slip in front of a car that veers out of control, or that a severe heart attack or stroke will not cut short our life. The belief that even if one of these tragic events did befall us personally, there is not much that we could have done to prevent it is usually a fatalistic one. This passive view ignores the control we exercise over our own lives, and how we embrace our work and leisure worlds. Some cancers and some cases of heart disease are preventable, and automobile accidents that occur with alcohol-impaired drivers at the wheel need not have happened. Of course, not every sickness, injury or death could have been avoided, but many could have been and can be.

Much of the future progress in health will probably come from changes we make, as individuals and as a society, in our lifestyles, habits and surroundings. Attention has been paid to this global view of health problems by Health and Welfare Canada. In a publication by Marc Lalonde entitled *A New Perspective on the Health of Canadians*,³ a distinction

was made between three types of contributing factors; self-imposed, environmental and biological host factors. What we wish to do below is describe these three types of contributing factors and then provide some data to help illustrate the extent to which they do exert an effect upon our health.

Self-imposed Contributing Factors:

Those factors that stem from the lifestyle of the individual and over which he has a great deal of control⁴ are self-imposed factors.

- a) excessive alcohol consumption
- b) smoking
- c) drug abuse
- d) nutritional problems
- e) lack of exercise or recreation, overwork
- f) careless driving and failure to wear seat belts
- g) promiscuity and carelessness.

Environmental Factors

Besides risks which are self-imposed, there are those factors about which the individual alone can do little or nothing, but which descend upon us from the environments, both physical and social, in which we work and live. These factors include:

- a) physical factors, such as contamination of drinking water, rivers, lakes and streams, the release of untreated sewage into the environment, air pollution.
- b) social factors, including urbanization, crowding, social isolation, inflation and unemployment, and working conditions.
- c) working environments, hazards and practices that contribute to accidents, injuries and deaths.

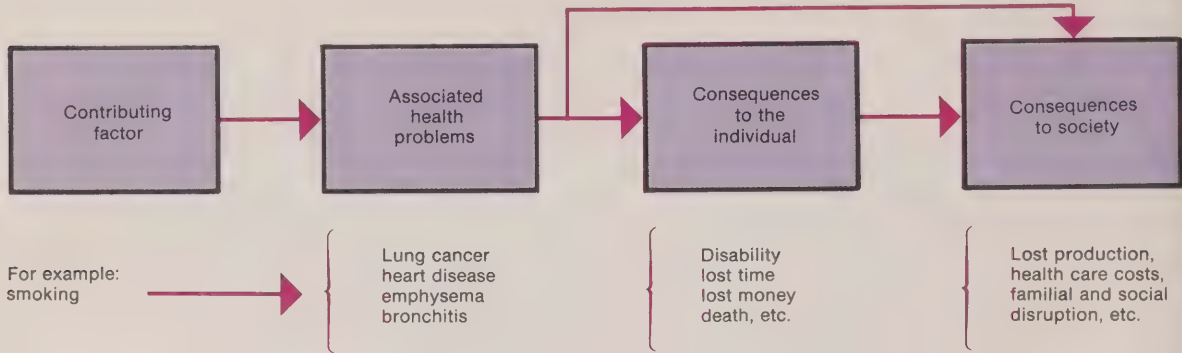
Host Factors

Besides health problems brought on by the things we do to ourselves and the environments in which we live and work, there are those problems with which we are born or that are a function of our physical constitution. Such biological conditions can accompany us at birth and include genetic defects, malformations, and mental retardation, as well as inherited weaknesses or predispositions to certain diseases or conditions. The individual factors listed are not equal contributors to health problems. They contribute to varying numbers of cases and to problems of different severity. We have attempted to provide some information on each factor listed rather than concentrate on only the major factors, such as smoking and alcohol.

Broadening the Perspective: Health problems can be viewed not only from the perspective of prior contributing factors, but from the perspective of the subsequent consequences of such problems. Health problems go far beyond actual disease states and have many consequences other than sickness in bed. Those consequences may include not only individual suffering and disability, but loss of time and money, family disruption, changes in job status or employability, and so on. There are also costs that society bears collectively, like most of the costs of hospital and other medical services needed to treat the individual plus costs of retraining or rehabilitating the individual if he is disabled, or

supporting him entirely if necessary. Thus, rather than focus specifically upon health problems or disease states alone, this chapter attempts to provide at least a partial description

of the relations between contributing factors, health problems and subsequent consequences. This wider view in the diagram looks something like this:



This is a very simple diagram, but the underlying principle is that for many health problems, contributing factors or causes relating to our lifestyle, biology or environment can be established.⁵ And in many cases, at least a partial estimation can be made of the individual and societal consequences.

The contributing factors to health problems include a large proportion of human elements and habits that might be amenable to change, such as smoking, overwork, improper handling of industrial wastes, etc. The description of health problems in this context should permit the reader to develop some idea of the extent to which our health problems are dependent upon our own actions and civilization.⁶

It is important to remember that contributing factors are not necessary conditions for the contraction of a disease or health problem. Alcohol consumption is enjoyable in moderation. It is alcohol abuse that contributes to liver cirrhosis but in our present data it is almost impossible to separate out such abuse from moderate use. Thus, the assumption behind our display of national per-person alcohol consumption figures is that general levels of increased consumption are likely to be paralleled with increased cases of abuse.

While it is beyond the scope of this chapter to attempt to detail the economic losses associated with each health problem, some partial estimates for selected health problems as they apply to Ontario have been included.

Let us now look at the three types of contributing factors and the health problems and consequences that ensue using data drawn from Statistics Canada and elsewhere. We will consider each type of contributing factor, self-imposed, environmental, and biological. Greatest attention will be given to the self-imposed factors, both because of the data available and because self-imposed contributing factors, at least in theory, are the most amenable to change.

SELF-IMPOSED CONTRIBUTING FACTORS

Alcohol Abuse

Alcohol abuse is a contributing factor in alcoholism, cirrhosis of the liver, malnutrition, motor vehicle accidents, obesity, and some suicides. Although society is confronted by a host of problems associated with use and abuse of a wide variety of drugs, one of the biggest drug problems is the damage caused by consumption of alcohol. In western society, harmful consumption has been growing alarmingly. In 1965,

the estimated number of alcoholics in Canada was 283,000. By 1976, the number had swelled to 624,000 (Table 3.5). Deaths from cirrhosis have increased by some 250% in the past 10 years, and alcohol is involved in 38% of driver fatalities (Table 3.6).

Consumption: Canadians consumed 11.9 litres of absolute alcohol per adult in 1977—that is, 99 litres of alcoholic beverages per adult—85% in the form of beer, 8% spirits, and 6% wine.

If we look at recent trends in Canada, we find that there has been a steady increase in consumption over the past 10 years. Overall, per-person consumption of absolute alcohol has increased 32% since 1966. In addition, there are grounds for the suspicion that at least some of this increase can be accounted for by increased drinking among young people. For example, four surveys carried out in Toronto by The Addiction Research Foundation indicate that over the time period 1968 to 1974, the proportion of students reporting use of alcohol in the six months prior to the survey increased from 46% to 73%. Also, the ratio between males and females had almost reached a par by 1974.

Forecasts of alcohol consumption suggest continued increases. For example, a forecast of alcohol consumption prepared by The Addiction Research Foundation⁸ estimated that by 1984 consumption would reach 16.3 litres of absolute alcohol per adult. This would represent a 58% increase over the level of 1972.

The Non-Medical Use of Drugs Directorate of Health and Welfare Canada sponsored a national study of drinking practices in late 1976.⁹ Overall, 82% of the respondents had used alcohol at some point in their lives, and 53% reported use in the seven days preceding the survey, with an average number of 6.1 drinks. Men were more likely than women to be users (86% versus 77%) (Table 3.2), and to have used it in the week preceding the survey (62% versus 44%).

A look at Canadian drinking habits in one year, 1976, shows that the size of the drinking population increases as we move up the age ranges until about 20-29 (when over 90% of the population drink), and then declines. The fewest drinkers were found among elderly persons (65 and over),

but this is primarily due to the relatively small number of drinkers among elderly women (less than 50%). This leaves unanswered the question of whether the 90% of the population 20-29 will continue to drink when they move up the age ranges. If they do, additional alcohol-related health problems can be expected to follow.

Among young people, almost 65% of those aged 15-17 drink to some degree, while 87% of those 18-19 drink. Drinking among young females (especially among those 18-19) is becoming as common as it is among males. Other survey data support the view that increasing alcohol use occurs most rapidly among young adults and adolescents.¹⁰

Several other socio-economic characteristics have been found to be correlated with drinking. For example, the proportion of drinkers in the population increases with increasing income, education and size of community. As well, there are proportionately more drinkers among professional and white-collar workers than among unskilled workers and farmers.

The problems of alcohol use and abuse are not uncommon in industrialized countries. Comparing Canadian consumption figures with several other countries, we note that the French and the West Germans consume more gallons of absolute alcohol per person than we do, while the English appear slightly more temperate (*Chart 3.4*). The French have a history of high alcohol consumption, but figures for the 1970s are lower than those for the 1950s and early 1960s.

The Consequences of Hazardous Drinking: The most obvious consequences of hazardous drinking are the resultant deaths and the attendant years of life lost. By "hazardous" drinking we refer to a level of consumption beyond which the risks of mortality have been shown to increase considerably. When we speak of years of life lost in this chapter, we are referring to the years of life lost between the ages of one and seventy. For example, if a person dies at age 20, he would have lost 50 years of potential life.

Moderate levels of alcohol consumption seem to pose only moderate risks to health but heavy doses over the long term have been shown to be a risk factor in diseases such as cirrhosis of the liver and certain oral cancers—cancer of the oral cavity, pharynx, larynx and esophagus. Short-term or episodic alcohol excesses give an increased risk of death from motor vehicle and other accidents.

Drinking and Driving: A roadside survey carried out by the Department of Transport in 1974 showed that of the 9,000 night-time drivers tested, just over 20% had been drinking,¹¹ and almost 4% were impaired¹² (*Table 3.7*). This is most likely an underestimate because of the nature of the survey. However, of more interest and possibly validity are the age-group differences reported. The greatest number of impaired drivers were found in the 20-24 age group, followed by the 25-29 and 30-34 age groups. The Traffic Injury Research Foundation of Canada reports that over the past few years about 40% of fatally injured car and truck drivers were impaired at the time of accident (see table below). This figure is close to Health and Welfare Canada's estimate of 38% of motor vehicle deaths which can be attributed to the consumption of alcohol (*Table 3.6*).

Table 3.6 shows that motor vehicle accidents due to hazardous drinking are responsible for more deaths than any other alcohol-related disease or condition. Liver cirrhosis is a close second, but is responsible for far fewer potential years of life lost. This is due to the fact that motor vehicle accidents, on the average, claim younger victims. In general,

Impairment among fatally injured drivers,¹ 1976

	Number of fatally injured drivers	Percentage of victims who	
		Had been drinking	Were impaired
Drivers of:			
Automobiles	1,119	47	38
Trucks/vans	291	49	42
Motorcycles	153	40	29
Tractor-trailers	32	25	25
Snowmobiles	52	60	52

¹Data aggregated from seven provinces does not include Quebec, Nova Scotia, Newfoundland and the Yukon and Northwest Territories.

Source: Traffic Injury Research Foundation of Canada, Ottawa. Data from the files of the Chief Coroner/Medical Examiner in seven provinces.

44% of deaths from diseases or conditions listed in Table 3.6 are probably due to hazardous drinking. That is, 4,000 deaths in 1976 (6% of deaths that year) and over 100,000 years of lost living.¹³

Alcohol has a strong and consistent relationship to crime. Of the 4,140 murders reported by police from 1961 to 1974, alcohol was involved in 41%. A high percentage of alcohol involvement in the crime of rape, both in the offender and the victim, is indicated in various studies, with percentages ranging from 25 to 70.

Alcohol and Mental Health: Long-term alcohol abuse is associated with psychological and neurological effects, and it is difficult to separate the cause from the effect in such cases. The number of first admissions for alcoholism and alcoholic psychosis have increased substantially in recent years, from 7,100 in 1966 to 9,252 in 1972, to 10,486 in 1976 (8.7% of all first admissions to psychiatric wards and institutions in Canada).

The male-female sex ratio for admissions is about four males to one female, with a median age of 43 for first admissions and a year or so older for readmissions. The median age of cases separated from hospital after a first admission or readmission with a diagnosis of alcoholic psychosis was about 50 years of age, or several years older than for alcoholism. Alcohol-related problems accounted for 3% of all patient days at in-patient psychiatric institutions in 1976, with first admissions accounting for slightly more than readmissions.

Several research studies on suicide suggest that alcoholics are more likely to commit suicide than non-alcoholics.¹⁴

Smoking

Smoking is a contributing factor in certain oral and respiratory cancers, heart and blood vessel diseases, chronic bronchitis and emphysema. In 1965, 43% of adults smoked, but by 1977 only about 36% smoked regularly (*Chart 3.12*). In 1977, about 41% of males and 31% of females over the age of 15 years smoked cigarettes regularly. As proportionally more women become regular smokers, their share of smoking-related health problems may more closely parallel that for men. In addition, studies¹⁵ have suggested that smoking during pregnancy has detrimental effects on the development of the fetus, especially in terms of low birth weight, and may affect the future health and development of the child.

The greatest proportion of women smokers are found in the 20-24 age group (41% in 1977) while a wider range, between 25 and 44 years of age, holds the greatest

proportion of male smokers (47% in 1977). The general decline in regular cigarette smoking among the adult population has been paralleled by a decline in teenage smoking, from 30.5% in 1970 to 26.8% in 1977.

The greatest health risks due to cigarette smoking are death from diseases of the heart and circulatory system. Over 50,000 Canadians died from (ischemic) heart disease in 1977; around 20,000 of these were under 70 years of age, and it is estimated that about 24% of these deaths were directly attributable to smoking (Table 3.13). Heart disease is the leading cause of death for men over 40 years of age and women over 50.

Lung cancer is the second greatest health risk associated with regular smoking. The lung cancer death rate among male cigarette smokers is nine to 10 times that of non-smokers; among heavy smokers, the lung cancer death rate is at least 20 times that for non-smokers. In 1977, there were 7,642 deaths due to lung cancer, an increase of 177% over 1967. Of lung cancer deaths that occur before age 70, 63% are directly attributable to smoking. This represents roughly 30,000 years of human life (before age 70) lost in one year due to deaths attributable to smoking (Table 3.13).

The decrease in smoking over the last decade has not been great, and some groups are increasing their use of cigarettes. Cigarette technology has reduced inhaled tar levels considerably, and there is some evidence that this reduces risk,¹⁶ but even though filters remove tar, the probable carcinogenic element, they do not remove carbon monoxide, a psychomotor and cardiovascular hazard, nor do they necessarily remove other unknown agents in cigarette smoke that may predispose smokers to coronary artery disease, stroke, and peripheral vascular disease. Thus, the search for a non-carcinogenic tobacco or safe cigarette will likely succeed only in diminishing some cancer incidence;¹⁷ the other diseases of smoking may remain. Smokers, however, seem to prefer high tar/nicotine content brands of cigarettes no matter how heavily they smoke.¹⁸

Ex-regular cigarette smokers¹

	1975	1977
Males		
Number	1,324,000	1,469,000
As a % of all males		
15 years and over	16.0	17.2
Females		
Number	633,000	839,000
As a % of all females		
15 years and over	7.5	9.5
Total		
Number	1,957,000	2,308,000
As a % of all Canadians		
15 years and over	11.7	13.3

¹People who used to smoke regularly but who have quit.

Source: *Smoking Habits of Canadians, 1977*, Promotion and Prevention Directorate, Health and Welfare Canada.

In addition, if smoking were to disappear, lung cancer would not, although it would be considerably reduced. At least 15 other factors have been implicated, including exposure to asbestos, arsenicals, and various chemical agents.

Drugs

In the context of this chapter, reference to drugs is taken to

cover a large group of substances. Both alcohol and tobacco are drugs but they have been considered separately because of the magnitude of their impact in terms of death and illness. Concern in this chapter is not with drug use—for the beneficial uses of drugs are manifold—it is with the misuse and abuse of drugs for both medical and non-medical purposes.

It is not possible in this small space, or with present information sources, to list all possible drugs, their level of misuse or abuse by the population and the consequences of those indiscretions. For the moment, we will have to content ourselves with a discussion of the major examples of commonly abused drugs, some indication of the quantities of such drugs that exist within Canada (not all of which will be misused), and some elucidation of the observable consequences of abuse and misuse.

It should be remembered that there is no clear line between the appropriate use of a drug and subsequent abuse, habituation and addiction. Thus, talk about drug misuse and abuse is not talk about a very clearly defined activity.

Exposure: In Canada, there is little manufacture of pharmaceuticals, and most drugs are imported either in a finished form or as materials to be processed into tablets or capsules. Illicit processing and manufacture of certain types of drugs occur, and drugs are brought into Canada illegally. Thus, any picture of how much of any particular drug has been available over a given time will always be incomplete. Using figures on production or sales of drugs to estimate consumption is somewhat risky as many medicine cabinets throughout the country are full of acquired yet not consumed drugs.

Using data relating to the amount of amphetamines available for medical use and the amount actually sold in Canada for the years 1966 through 1972, the Le Dain Commission calculated that: "Nearly twice as much amphetamine was manufactured in Canada for domestic medical use as was actually sold to hospitals and retailers." The Commission concluded that the existence of such a large residual "...provides the opportunities for illicit diversion and various manufacturing, refining, storage and transfer stages".¹⁹

Much of the data derived from surveys on drug use appear to be confusing and contradictory. It is difficult at present to make any unqualified statements on levels of use of any particular drug in Canada, at any point in time. In an attempt to present information germane to the early exposure to drugs and drug-taking, we present some data gathered in independent studies of high school students within different regions of Canada during 1976 (Chart 3.15).

Some marijuana use was reported by 22% of students. Use was more prevalent among males and was positively related to grade and age. Only about 6 to 7% of students reported using tranquilizers. This was somewhat more prevalent among females, and tranquilizer use peaked in about grades 10 or 11. The use of stimulants was reported among only slightly more than 5% of students. It also appeared to peak about grade 10, and then decline.

Spotlighting Ontario alone, the table below gives a detailed picture of the use of various drugs between grades 7 and 13 (ages 12-18). Putting alcohol and tobacco aside, there are some definite patterns to be observed. The sniffing of glue and other solvents seems to be a phenomenon of the youngest years and declines after grade 7 (age 12). Both heroin and "speed" seem to have a relatively stable

proportion of the drug market, although it is fairly small. Cocaine, however, gives the appearance of growing in popularity.

Percentage of Ontario students using drugs at least once in 12 months prior to survey, 1977

Type of drug	School grade			
	Seven	Nine	Eleven	Thirteen
	<i>per cent</i>			
Tobacco	14.1	33.3	41.1	36.7
Alcohol	57.4	75.5	87.4	94.8
Cannabis	5.6	23.2	39.4	42.4
Glue	6.5	4.0	2.1	1.8
Other solvents	12.8	6.1	2.9	2.3
Barbiturates ¹	6.9	14.9	20.3	16.5
Barbiturates ²	2.6	7.0	9.2	5.2
Heroin	1.7	2.7	1.4	1.8
Speed	2.7	2.8	2.6	2.9
Stimulants ¹	5.6	6.0	9.0	5.7
Stimulants ²	3.2	9.0	9.8	6.4
Tranquilizers ¹	6.3	8.9	10.5	9.3
Tranquilizers ²	2.1	5.5	7.0	5.6
LSD	2.5	5.8	10.7	6.5
Other hallucinogens	1.1	3.4	8.0	6.9
Cocaine	2.7	4.0	3.9	4.2

¹Prescription.

²Non-prescription.

Source: Smart, R.G., and Goodstadt, M.S., *Alcohol and Drug Use Among Ontario Students in 1977: Preliminary Findings*, Addiction Research Foundation, Toronto, 1977.

A great many other drugs follow a general pattern of increasing use until grade 11, followed by a decline—a pattern at least suggestive of early experimentation or wide availability and strong peer pressure. The most evident drugs appear to be marijuana, barbiturates, stimulants, tranquilizers, and LSD and other hallucinogens. It is impossible to know from these data whether the differences between drug use patterns are matters of availability or preference. In addition, these figures relate to use at least once in the preceding 12 months, suggesting that the figures confound cases of trying the drug once with cases of more regular usage.

At a broader level than the student population, there is some information on the number of illicit drug users of whom the government is aware. This is merely the proverbial tip of the iceberg, but it is possible that such data give some clue as to the overall direction of trends. The number of illicit narcotic drug users known to the Bureau of Dangerous Drugs of Health and Welfare Canada has increased steadily over the last decade, surpassing 17,000 in 1977 (*Table 3.16*).

The Bureau of Dangerous Drugs (BDD) maintains a list of known users of drugs covered by the Narcotic Control Act. Their data show several major trends in narcotic use, including:

- 1) increases in the number of known narcotic users, between 1956 and 1977, with greatest increases occurring between 1969 and 1974;
- 2) a concentration of known users, especially heroin users, in British Columbia: 46% of known narcotics users

resided in British Columbia in 1977, and of these, 91% were heroin users;

- 3) more male than female users in all age groups, with males outnumbering females by about three to one in 1977;
- 4) concentration of known users in the younger age groups: in 1977 almost 60% of all known users were 20 to 29 years old.

An examination of BDD data for 1973 and 1977 indicates a drastic decline of 80% in the number of newly reported heroin users. The number of newly reported cocaine users increased considerably between 1973 and 1975, particularly in British Columbia and Ontario, but declined thereafter. There also appears to be a shift away from British Columbia as the prime province for drug users.

We see in the table above that 30% of grade 11 students in Ontario had reported trying one form of barbiturate or another. Imports of barbiturates into Canada seem to be fluctuating around the 20 000 kilogram mark, but the number of poisoning cases involving barbiturates has decreased each year since 1970. However, these drugs are still the primary cause of drug-related mortality.

Minor tranquilizers and non-barbiturate sedative hypnotics are most often implicated in poisonings, but mortality resulting directly from ingestion of these substances is low on the whole. There is some indication that the non-medical use of these drugs frequently occurs in conjunction with other abusable substances such as alcohol. Poisonings from these drugs alone may be either the result of medical misuse, or as non-fatal attempts at self-injury by people who acquire these drugs for medical purposes.

Deaths due to psychotropic (psychotherapeutic) drugs, which include tranquilizers, are fewer than those from barbiturates, but increased steadily in number until 1974, and dropped after that.

Some perspective on drug-related activity relevant to consumption can be gained by looking at drug offences reported by the police. While the offence rates for controlled and restricted drugs declined after 1975, the rate for addicting opiate-like drugs (heroin, cocaine, etc.) soared in 1977 after a decline between 1973 and 1975 (*Table 3.20*).

There are some data, although they stem from the early 1970s, on the use of non-prescription remedies (over-the-counter items such as aspirin, cold tablets, etc.). The interesting item here is that half of all Canadians surveyed indicated that they had used some form of non-prescription remedy daily during the month before the survey. Almost everyone surveyed had used some form of over-the-counter remedy at least once in the last year (*Table 3.16*). One Ontario study from 1971-72²⁰ indicated that 58% of all those interviewed had taken at least one non-prescribed medicine in the previous 48 hours, and between 29 and 36% had taken a prescribed medication. The most common prescription drugs were tranquilizers and sedatives. More than 50% of the users of these drugs were over 50 years of age and females were predominant in all age groups. Vitamins and tonics were the most commonly used non-prescription remedies. A World Health Organization study in 1973²¹ resulted in somewhat lower consumption figures—37% had taken non-prescription remedies in the last 48 hours, and 25% a prescription medicine.

The most severe consequences of misuse or abuse of drugs are summarized in *Table 3.17*, which gives figures on deaths due to the ingestion of some different classes of drugs. Overall, there is a general decline in the numbers of

Hospital separations for avitaminosis and other nutritional deficiencies¹

Age group	1971	1973	1975	1976
0- 4 years ²	4,708	4,968	4,546	4,361
0- 1 year	3,758	3,998	3,671	3,575
5-19 years	532	452	469	333
20-44 years	467	423	382	422
45-74 years	936	960	955	991
75 years and over	330	370	359	410
Total	6,973	7,173	6,711	6,517

¹Does not include Yukon and Northwest Territories.

²Most cases of nutritional deficiency fall into the category of "other nutritional deficiencies" (89.1% in 1976) and occur in the under five age group (67.0%).

Source: *Hospital Morbidity*, Catalogue 82-206, 1971-76.

deaths after the 1973-75 period, and barbiturates remain the major cause of drug-related deaths.

The rate of drug-dependency cases handled by hospitals is declining, and in 1975 stood at just under 15 cases per 100,000 adults over age 20.

If we attempt to gain an overview from the data on illicit drug use, drug users, hospital separations and deaths, the general impression is one of decreasing severity. There are fewer deaths, fewer new users, and fewer cases being discharged from hospital. Whether this is merely a slight downward fluctuation in an overall increasing trend (note the increase in 1977 in reported heroin offences) or an actual movement away from ingestion of drugs by the public is impossible to tell for certain from the data we have here. The data provide but a glimpse of the actual usage.

Nutrition

The results of nutritional deficiencies include not only obesity and malnutrition. High fat intake, for example, is associated with atherosclerosis (hardening of the arteries) and coronary heart disease.

As a result of The Nutrition Canada Survey, it was estimated that in 1972, 1,613,000 Canadian adults were grossly obese; 2,193,000 adults had high blood cholesterol; 1,585,000 adults and children did not have enough iron; 1,823,000 children and teenagers did not get enough calcium; and 5,055,000 adults and children were receiving less than desirable amounts of vitamin C.²²

The data available from life insurance actuarial and other long-term studies suggest an increased risk of coronary heart disease in overweight males, but the findings are not entirely consistent. The increased risk is proportional to the degree of obesity and may be due to the increased hypertension, hyperlipidemia and diabetes in overweight persons. Correction for overweightness is important in the control of these diseases.²³ Middle-aged men who are significantly overweight have about three times the risk of fatal heart attack as those of normal weight.²⁴ Alcohol contributes to obesity, not only from the calories in the alcohol, but also by stimulating the appetite inappropriately for food.

Two national-level surveys have recorded the weights of Canadians; one in 1953, the other in 1972.²⁵ The latest figures range from 4.3% obesity in young men to 8.2% in elderly men, and from 9.9% in young women to 36.9% in elderly women.²⁶ The highest proportions of these persons were found in young and middle-aged females in the lowest income category, and among males in the higher income groups.

Between 1935 and 1977, the most significant changes in the consumption of food have been those involving cereals and meat. By the mid 1970s, calories from cereals had decreased from over 25% to around 20% of our total per-person caloric intake, and calories from meat had increased to 18.4% from 12%. Over this time there was little change in total calories. Total carbohydrates as a percentage of total calories have decreased six percentage points (54% to 48%) from 1935 to 1977. Total fat consumption, however, has risen from 34% of our average daily caloric intake to 41%. The report of the Committee on Diet and Cardiovascular Disease²⁷ recommended that dietary fat be reduced to 30-35% of the calories in the diet.

High fat intake is related to atherosclerosis (hardening of the arteries) and coronary heart disease. Diseases of the heart and arteries were responsible for 36% of all deaths of persons between the ages of 1 and 70 in 1977, and 50% of all deaths if we count the vast numbers of those over 70 who are claimed by heart disease. Heart attacks²⁸ claim by far the greatest number of deaths that fall under the heart disease label. Unfortunately, we do not have estimates of the proportion of heart and blood vessel disease that may be caused by high fat intake or other nutritional behaviour patterns.

Lack of Exercise or Recreation and Overwork

A sedentary lifestyle by itself or coupled with overwork can generate health problems for some. Obesity, hypertension, heart disease and ulcers are all to some extent fed by inactivity and psychological stress. There are some data to indicate that Canadians are becoming more active. Results from the 1972 and 1978 surveys of leisure-time activities show that participation in sports or exercise activities increased in every age group. In 1978, 47% of all adults (over 15 years of age) had participated in a sport or exercise activity in the week before the survey compared with 35% in 1972.

Chart 3.21 shows a progressive decline in participation in sports and exercise as one moves up the age ranges. It is interesting to note the rapid decline among teenagers. Between 15 and 16 years of age, 85% of males and 80% of females are active, but between 17 and 19, the levels drop to 72% for males and 58% for females. If we look at the elderly (over 65), 25% of the males were active and 16% of females.

It should be remembered, when considering fitness and recreation, that participation in sports and other exercise activities is often dependent on not only availability of facilities but the income, education and age distribution of the population. As well, this type of measure of activity does not capture activity on the job and therefore understates the activity levels of Canadians.

In 1976, Canadians were asked to evaluate their own fitness levels (*Table 3.23*). In the week before the survey, 7.7% of males and 10.4% of females indicated that they felt they were less fit than others of their own age, while another 7% of males and 8% of females were not able to participate in sports or exercise due to illness, handicap, etc.

Deaths from the traditional sedentary lifestyle and stress-associated diseases such as hypertension, ulcers, arteriosclerosis, stroke and anxiety have shown little directional change since 1969 (*Table 3.32*). If there is a relation between lifestyle and these diseases, since lifestyles are very difficult to change, and because it takes a great many years for the effects of inactivity and stress to take hold, we would not expect changes in the statistics until long after our national activity levels increase.

Careless Driving and Failure to Wear Seat Belts

The police report that motor vehicle accidents claimed 5,253 lives in 1977. It has also been shown that the potential years of life lost from motor vehicle accidents represents over 15% of the potential years of life lost from all causes of death.²⁹

Sexual Hygiene

Chart 3.27 shows a stable rate of reported syphilis present in the population over the last 30 years. Cases of gonorrhoea, which always outnumbered syphilis cases by two to three times, increased drastically after 1968 and had more than doubled the 1968 figure by 1976—over 52,000 cases. Whether the increase after 1968 represents increased reporting due to a liberalization of views regarding venereal disease, or an actual surge in the number of cases is difficult to determine.

ENVIRONMENTAL CONTRIBUTING FACTORS

Physical Stresses

A discussion of the contamination of water due to waste loading and of air due to pollution is given in Chapter 11 of Perspective Canada II which deals with the environment. We have not been able to find and include data on radiation, noise pollution or other hazards. The extent of death and morbidity due to exposure to this type of pollution is not reliably measurable at this time, and in many cases it is impossible to separate this type of stress from other related and separate causes of illness and death.

Social Stresses

Crime and Violence: A look at reported offences and crime rates for murder, assault, rape and manslaughter in Chapter 9 on Crime and Justice will yield some insight into the sickness and death that citizens inflict upon each other. In 1977, over 600 people were murdered in Canada, there were another 600 murder attempts, and well over 100,000 people reported being assaulted. These acts are causes of death and injury rivalling many traditional health problems.

Violence giving rise to injury and death is not limited to adults. In 1977, 1,363 children under 15 years of age died from accidents, suicides, or homicides.

Child Abuse: The extent of mistreatment of children, including physical abuse, maternal deprivation and psychological abuse, is unknown. It is suspected that few cases of child abuse and child deaths are reported as such. However, there have been studies made of children who were reported as battered children. For example, between 1957 and 1971, 132 battered infants, all from low socio-economic stratum were seen by the Outpatient Department of The Children's Hospital of Winnipeg. This is a rather unrepresentative sample and other studies have shown that many parents who abuse their children come from a higher socio-economic section of the community. Nevertheless, some information from this study merits consideration. There were sharp increases in the number of cases beginning in 1963, probably the result of continuing education of hospital staff and education of the public through television and the press.

About 61% of the battered children were males, as has been reported by others, and above the age of three years there was a rapid decrease in the number of cases.³⁰

An Ontario report³¹ (see also the table below) in 1973 indicated that between 1966 and 1970, 1,603 cases of

possible child abuse were reported to the Ontario Central Register³² by Children's Aid Societies. This report concluded that:

The physical abuse of children in Ontario is not limited to very young children. One fifth of the abused boys and over one third of the abused girls were between 10 and 16 years of age.

More than a third of the children received only bruises and welts, and fully 10% had no apparent injury. Fifteen per cent were injured sufficiently to require hospital admission.

More men than women were reported and verified as having abused their children.

Injuries were unintentionally inflicted in most cases by the natural parents or other adult caretakers. Excessive use of discipline was the most apparent cause of injuries, not deliberate or malicious abuse or neglect. Many children were victims of physical assaults expressed in the context of child-rearing.

Child abuse cases reported by Children's Aid Societies in Ontario

	Abuses reported	Deaths from child abuse ¹
1966	225	10
1967	380	6
1968	269	6
1969	370	10
1970	359	8
Total	1,603	40

¹Deaths reported to Supervising Coroner's Office.

Source: Greenland, G., *Child Abuse in Ontario*, Ontario Ministry of Community and Social Services, Toronto, 1973.

The Ontario report notes two estimates of the extent of child abuse. The first suggests that at least 259 children are injured in a non-accidental manner for every million population in urban areas. Approximately 2 to 3% of these children will be killed each year, and 30% of the younger ones will receive permanent physical injury or brain damage. This estimate was derived from a study of child abuse in Denver, Colorado, carried out by Dr. R.E. Helfer, a respected American authority on child abuse. He believes these grim statistics apply equally to Canada. In a second source, *The Battered Child in Canada*,³³ Mary Van Stolk uses a slightly more conservative estimate of 225 cases per million population. She concluded that child abuse could result in 1,718 injuries, and from 34 to 52 deaths in Ontario each year. The Ontario report notes that these estimates are considerably in excess of those officially reported. For example, in 1970, only eight deaths and injuries to 397 children were officially attributed to child abuse in Ontario.

Some Direct Consequences of Social Stress—Suicides and Mental Problems³⁴

Suicides: Although an enormous amount has been written about suicide, there is no simple formula to explain why people attempt to take their own lives. Suicide is gradually increasing, and suicide attempts, at least in the 20-29 age group, have almost tripled since 1960.

In support of the possibility that suicides are stress-induced actions, one might note that widowed and divorced individuals are consistently in high-risk suicide

groups. Suicide rates are higher for males than females by almost three to one, but females appear to attempt suicide more than twice as often as do men. It is also interesting that the female suicide rates are much less highly related to stages of the life cycle. This may reflect on the possibility that stress-inducing events are more evenly distributed throughout the female life cycle.

Mental Health: Psychiatric in-patient facilities (which include both mental hospitals and psychiatric wards in general hospitals) handled over 120,000 admissions in 1976; 2,100 people died in those institutions during that same year. Half of the admissions handled involved people who were coming in for the first time. If added together, the time spent in these institutions during 1976 amounted to a total of 35,127 years of life.

One of every eight Canadians can be expected to be hospitalized for a mental illness at least once during his or her lifetime. The volume of hospitalization for mental illness is larger than any other health problem treated in hospitals. In 1976 the total number of patient days for mental illness was 23,774,752 as compared to 38,136,206 for all other health problems.

Number of visits to psychiatric and/or mental health clinics in 1976

Adults	
Out-patients	743,212
In-patients	117,739
Children	
Out-patients	151,684
In-patients	9,545
Number of patients seen in day and/or night care	
Out-patients	33,595
In-patients	5,401
Number of visits for day and/or night care	382,268

Source: Health Division, Hospitals Section, Statistics Canada, unpublished data.

Working Conditions

It is difficult to avoid the consequences of hazards of the work place, or the toll of long or strenuous labour. Accidents at work injured 1,036,000 Canadians in 1977, disabling³⁵ almost 500,000 and taking the lives of 900. That is more than 10 injuries for every 100 workers—probably an underestimation because it is based on only those injuries that are covered by and reported to workmen's compensation. Of those who died in industrial accidents over the last 10 years, 90% were male and about 17% were under 25 years of age.

Besides accidents that result in immediate injury or death, there are industrial hazards that do not strike as swiftly but which are just as crippling and as deadly. Exposure to toxic or harmful substances over long periods of time result in an as-yet unmeasurable amount of industrial disease including respiratory diseases such as certain types of lung cancer, silicosis,³⁶ asbestosis, and loss of hearing.

It takes a considerable length of time for an industrial disease to become recognizable. For example, the average elapsed time to recognition from first exposure to respirable dust containing free silica for the 21 cases of silicosis

found among uranium miners in 1974 was 24 years.³⁷ Since workers move from job to job, the exposure to an industrial hazard may not occur in one province in one type of job, or at one type of work place. Personal habits such as smoking modify and often greatly increase the likelihood of the onset of industrial disease.

The chronic effects of a few substances such as free silica, lead, and asbestos are relatively well known, but for the great majority of chemical agents used at the work place today, there are scant data available upon which to establish accurately the range of their long-term effects on humans.

The work place is not the only hazardous location. Most everyone is exposed to asbestos generated by hair dryers and brake linings. Asbestos is a well-characterized carcinogenic agent when inhaled by humans.³⁸ There are no data on the extent of concentrations of and exposure to toxic substances such as asbestos, radiation and lead. Part of the reason is that it is just within recent history that we have come to unearth evidence that indicates that damage is being done to human beings because of their exposure to such substances or conditions. The idea of measuring the population exposed to radiation is an extremely difficult one since if proper safeguards are maintained at nuclear plants and storage areas for radioactive material, then the exposed population will in theory be nil. The question is further complicated by the fact that simple exposure is not in itself sufficient to cause immediate health problems. Certain low levels of exposure, or low doses of a toxic substance, may not harm an individual, and in some cases may be beneficial. It is also almost impossible to know to what extent family members of workers in an industry dealing with toxic substances are actually exposed to dangerous levels of those materials brought into the home on the clothes or body of the worker.

Health Impacts on Work

While some encounter health problems at work, there are those whose poor health prevents them from obtaining work or continuing to work when they want to, or making it to work when they have employment.

Estimates from the 1978 Labour Force Survey carried out by Statistics Canada show several interesting illness-related conditions: 269,000 Canadians who left the labour force in the last five years had left their last job due to illness; another 43,000 were unemployed and had also left their last job because of illness; and 23,000 were employed part time rather than full time due to past or continuing illness.

This is, of course, just a partial view of the impact of health on work. How much early retirement is forced by illness or how many people are working at jobs they either do not like or are unsuited for because of past or ongoing health problems or disabilities are things we just do not know at this time. One question on the 1976 Work Experience Survey asked: "Have you ever had health problems that limited the type or amount of work you could do?" Fourteen per cent of people with four children and incomes of more than \$12,000³⁹ in 1976 answered yes, compared to 22% of those with incomes below that figure.

If we look at Labour Force Survey data for 1976, of the 9,572,000 employed persons, 7.2% of them were absent in an average week (161,269 due to illness). So on average, 1.7% of the employed persons in this country are absent some time in any given week due to reported illness.

BIOLOGICAL OR HOST FACTORS

The effects of our biology show up as inherited weaknesses or strengths, genetic defects or congenital anomalies, sex differences and aging effects. Host factors also contribute to cancer, heart disease and mental disorders. Many of these pre-conditions and effects are not measurable or are difficult to isolate statistically. What we have presented, as a minimal description of this aspect of our health problems, are data on the 20 major congenital anomalies, which affected almost 2.2% of the total live births in 1976 (Table 3.35).

Costs

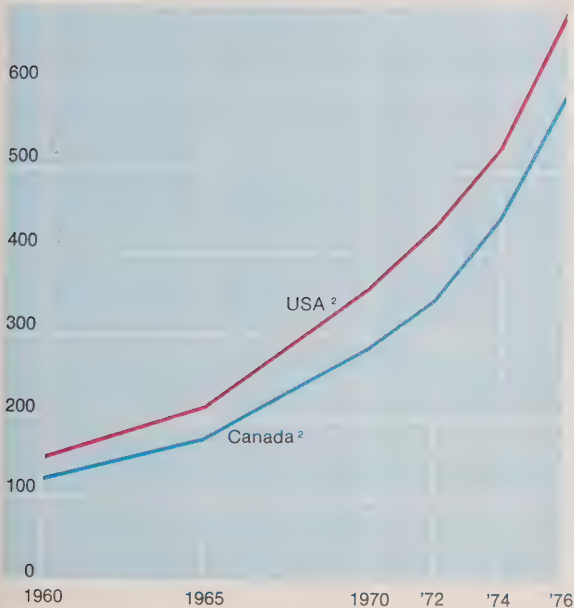
In this chapter we are not trying to pinpoint the overall health care costs of Canadians, but those that relate to the preventable and usually self-initiated health problems

discussed above. This is a tall order in that the level of detail is just not possible with the present data on health expenditure. What we have done for this chapter is provide some partial and rough estimates for certain diseases that were produced for the province of Ontario, and which cover 1971,⁴⁰ and include as present context the distribution of national health care expenses by category for 1976 (Chart 3.36).

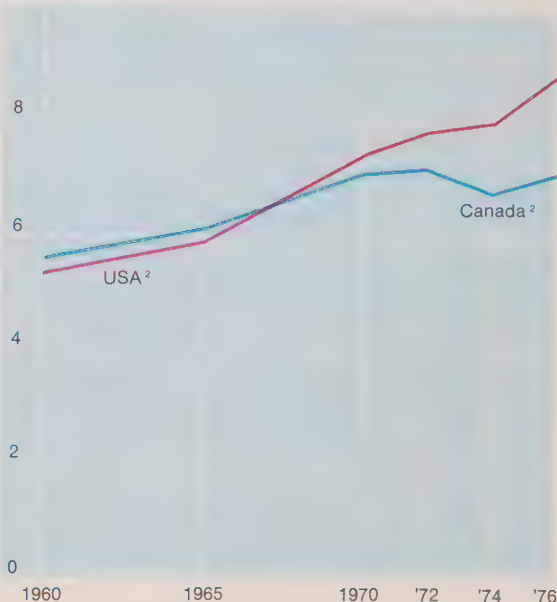
At the national level we spent \$13.5 billion on health care in 1976. This amounts to \$590 per person which, roughly taking inflation into account, is about 200% above the 1960 expenditure figure. Over half of the expenditures on health care (54%) went to institutional care, with the rest going to professional services (22%), drugs and appliances (12%) and other expenditures including research (12%). Research picked up less than 1% of the expenditures.

Total health expenditures in Canada and the United States

Current dollars per person¹
700



Percentage of Gross National Product
10



¹Population estimates are for July 1st in Canada.

²1976 figures are provisional.

Source: Health Economics and Statistics Division, Health and Welfare Canada.

What is important in looking at Table 3.37 on partial estimates of economic loss⁴¹ for Ontario (1971) is not necessarily the dollar figure assigned to each disease or condition, but the differences between direct and indirect cost burdens between health problems and the proportion of total economic loss that each problem occasioned.

The particular health problems listed are those over which we have some control and even the chance to reduce personal risk. The problems listed accounted for almost 40% of the direct and indirect estimated Ontario health costs. The five most costly health problems were: (1) accidents,

poisoning and violence; (2) acute myocardial infarction; (3) other ischemic heart disease; (4) other cerebrovascular disease, and (5) cancer of the trachea, bronchus and lung. If we do not separate the various diseases of the heart and blood vessels, this group of health problems accounts for 43% of the estimated costs for the problems listed in Table 3.37, and 16.8% of the total estimated costs for all health problems of the province of Ontario.

The greatest indirect costs (earnings lost due to illness and premature death) fell to acute myocardial infarction, cirrhosis of the liver, cerebral hemorrhage, cancer of the

trachea, bronchus and lung, and accidents, poisoning and violence.

A look at the major causes of death for 1977 puts diseases of the heart and blood vessels at the top, followed by cancers and accidents, poisonings and violence. The greatest number of days spent in general and allied hospitals were the result of some form of heart and blood vessel disease and accidents. Other than pointing out the superordinate position of heart and blood vessel disease, in dollar costs, days lost, and deaths, the data we have seen in this chapter should serve to underline the magnitude of our capability to be self-destructive.

Technical Notes

Many of the data on health problems in this chapter refer to deaths unless other references such as accidents or disabling injuries, or new cases of an illness or disease are indicated. Thus, only the worst consequence of a health problem is usually counted as a consequence—that is, death. When disease or illness that does not result in death is excluded from the statistical description of a health problem, there is a great underestimation of the true incidence of the health problem and, therefore, an understatement of the consequences or stresses precipitated by contributing factors, such as smoking or air pollution.

In addition, it is often difficult to determine the population at risk; that is, those people who are most likely to be affected by a particular contributing factor. For example, rates of death from cirrhosis of the liver are calculated using the total population as a denominator, as we are not able to isolate those who were in the greatest risk population—the heavy drinkers. Death or illness rates given for the total population tend to underestimate the concentration of the effects of the contributing factor upon smaller portions of the entire population.

The data used in this chapter were gathered from a wide variety of sources—individual research studies, administrative data files, household surveys, etc. This means that there is a great deal of variation in the quality and reliability of figures in different tables, and sometimes within the same exhibit. As we found it impossible to assign a level of reliability to each exhibit, the reader is exhorted to note the sources given for data he finds interesting, and to at least bear in mind that exhibits using different sources or small, non-national samples are not usually as reliable as those using data from a single source, or data gathered using large national samples.

Definitions

Coronary Heart Disease: An irregular thickening of the inner layer of the walls of the arteries which conduct blood to the heart muscle. The internal channel of these arteries (the coronaries) becomes narrowed and the blood supply to the heart muscle is reduced.

Arteriosclerosis: Commonly called hardening of the arteries.

Atherosclerosis: An extremely common form of arteriosclerosis in which deposits of yellow plaques (atheromes) containing cholesterol, lipid material, and lipophages are formed within the intima and inner media of large and medium-sized arteries.

Cerebrovascular Disease: Disease of the blood vessels affecting the brain.

Cardiovascular Disease: Disease of the blood vessels.

Myocardial Infarction: The damaging or death of an area

of the heart muscle (myocardium) resulting from a reduction in the blood supply reaching that area.

Heart Attack: A heart attack is an acute condition brought on by a sudden blockage of one of the coronary arteries supplying blood to the heart muscle.

Ischemic Heart Disease: A disease of the heart caused by deficiency of blood in a part, due to functional constriction or actual obstruction of a blood vessel.

Stroke: Also called a cerebrovascular accident. An impeded blood supply to some part of the brain, generally caused by a blockage in blood supply.

Cancer: A general term for more than 100 diseases characterized by abnormal and uncontrolled growth of cells. The resulting mass or tumor can invade or destroy surrounding normal tissue. Cancer cells from the tumor can spread through the blood or lymph (the clear fluid that bathes body cells) to start new cancers in other parts of the body.

Carcinogen: Carcinogen is any cancer-producing substance.

Cirrhosis: An inflammatory disease of the liver associated with the replacement of liver cells by fibrous tissue. Passage of blood through the liver may eventually be obstructed by the cirrhosis.

Psychotic Depression:

Depression - A psychiatric syndrome consisting of dejected mood, psychomotor retardation, insomnia, and weight loss, sometimes associated with guilt feelings and somatic preoccupations, often of delusional proportions.

Psychosis - A general term for any major mental disorder of organic and/or emotional origin characterized by derangement of the personality and loss of contact with reality, often with delusions, hallucinations or illusions.

Speed: Speed is a methamphetamine, but generally speaking it could be any of the drugs of the amphetamine class.

Footnotes

¹Morgan, R.W., *Prospects for Preventive Medicine, Ontario Economic Council, Toronto, 1977.*

²*Ibid.*

³Lalonde, Marc, *A New Perspective on the Health of Canadians, Health and Welfare Canada, Ottawa, 1974.*

⁴*It can be argued that early choices to smoke are strongly determined by peer group pressures and do not constitute simple choices to embrace smoking. Also, persons addicted to alcohol, smoking or drugs may not have the same ease of choice that moderate users of these substances do. Nonetheless, if we are to improve health conditions through individual choices, these cases must be seen as more difficult cases to resolve positively, but still resting ultimately upon the behaviour of the person with the problem, irrespective of how much assistance is received.*

⁵For further discussion see Audy, J.R., "Measurement and Diagnosis of Health", in *Environmental Essays on the Planet as a Home*, Shepard, P. and McKinlen, D., eds., Houghton Mifflin Co., Boston, 1971; Lalonde, Marc, *op. cit.*, and Brusegard, D.A., "What Should Social Indicators Indicate", *Proceedings of the American Statistical Association, 1978.*

⁶*We also have a hand in how our health problems are treated; depending on whether we seek help, where we go to seek it, whether we attempt to make our own diagnosis and determine our own medicinal requirements. This aspect of the picture is not treated in this chapter, but may possibly be treated in a future volume.*

⁷Addiction Research Foundation, *Annual Report, Toronto, 1978.*

⁸Schmidt, Wolfgang, "Public Health Perspectives on Alcohol Problems with Specific Reference to Canada", *The Canadian Journal of Public Health, Volume 68, September/October, 1977.*

⁹The survey was carried out during the months of November and December by The Canadian Facts Monitor. This survey is conducted monthly with a sample size of 2,000, and the research effort on alcohol consumption involved the amalgamation of two months' data. Excluded from the survey were the Northwest Territories and the Yukon, the least accessible and sparsely populated areas of each province, inmates of institutions, inhabitants of lumber and mining camps, members of the Armed Forces not living at home, persons living on Indian reservations, and transients having no regular place of residence. The group excluded constitutes about 7% of the Canadian population.

For further information, see Rootman, Irving, Distribution of Alcohol Consumption in Canada: With Reference to Women in Childbearing Ages Research Paper ERD-78-156, Non-Medical Use of Drugs Directorate, Health and Welfare Canada, 1978.

¹⁰Bakal, D., Milstein, S. and Rootman, I., "Trends in Drug Use Among Rural Students in Alberta: 1971-1974", Canadian Mental Health, November-December 1975; Russel, J. and Hollander, M., Drug Use Among Vancouver Secondary School Students: Summary of Findings, 1970 and 1974, unpublished report, Narcotic Addiction Foundation of British Columbia, Vancouver, British Columbia, 1974; and Smart, R. and Fejer, D., Changes in Drug Use in Toronto High School Students Between 1972 and 1974, unpublished report, Substudy No. 631, Addiction Research Foundation of Ontario, Toronto, Ontario, 1974.

¹¹Includes persons with a blood alcohol level of 0.015% or greater.

¹²Includes persons with a blood alcohol level of 0.095% or greater. Note that the present Canadian legal limit is 0.080%.

¹³These data are estimates prepared by researchers at Health and Welfare Canada and the figures presented are actually the mid-points of a range of averages. Thus, 68% is the mid-point of a range of 58% to 77%. The use of the range would better reflect the lack of definitive knowledge and data on this topic; however, the overall proportions and rankings are easier to see using only the mid-point data as in Table 3.6. For detailed calculations see: Ouellet, B., Romeder, J.M., and Lance, J.M., "Premature Mortality Attributable to Smoking and Hazardous Drinking", American Journal of Epidemiology, Vol. 109, No. 4, 1979.

¹⁴Whitehead, P.C., "Alcoholism and Suicide: Some Theoretical and Empirical Perspectives", International Journal of Addiction, No. 7, 1972.

¹⁵Meyer, M.B. and Comstock, G.W., "Commentary—Maternal Cigarette Smoking and Perinatal Mortality", American Journal of Epidemiology, Vol. 96, No. 1, July 1972; Underwood, P., Hesler, L.L., Laffitte, T. and Gregg, K.V., "The Relationship of Smoking to the Outcome of Pregnancy", American Journal of Obstetrics and Gynecology, Vol. 91, No. 2, January 1965; Zabriskie, J.R., "Effect of Cigarette Smoking During Pregnancy—Study of 2000 Cases", Obstetrics and Gynecology, Vol. 21, No. 4, April 1963.

¹⁶Wald, N.N., "Mortality from Lung Cancer and Coronary Heart Disease in Relation to Changes in Smoking Habits", The Lancet, 1976.

¹⁷Morgan, R.W., Op. cit.

¹⁸Smoking Habits of Canadians, Promotion and Prevention Directorate, Health and Welfare Canada, 1977.

¹⁹Le Dain, G., Final Report of the Commission of Inquiry into Non-Medical Use of Drugs, Ottawa, 1973.

²⁰Chaiton, C., Spitzer, W.O., Roberts, R.S., and Delmore, I., "Patterns of Medical Drug Use: A Community Focus", Canadian Medical Association Journal, January 1976. A group of individuals from one Ontario community and another from the practice of one Ontario doctor in another community were surveyed about their drug use in the previous 48 hours. The survey was carried out in May through July of 1971, and May through July of 1972.

²¹Josie, G.H., World Health Organization International Collaborative Study of Medical Care Utilization, Report on Basic Canada Data from the Department of Social and Preventive Medicine, University of Saskatchewan, December 1973, unpublished.

²²McWhinnie, J., Ouellet, B., Romeder, J.M., Health Field Indicators, Health and Welfare Canada, 1976.

²³Report of the Committee on Diet and Cardiovascular Disease, Health and Welfare Canada, 1976.

²⁴Food and Your Heart, Health and Welfare Canada, 1977.

²⁵In 1953, measurements of 22,000 Canadians were taken with clothing but without shoes. In 1972, 11,615 persons were weighed with the subject wearing light underclothing and a paper examination gown. As different indexes of obesity were used in the two surveys, one cannot determine whether there has been an increase in obesity during the 20-year interval between surveys.

²⁶Tables of Heights and Weights of Canadians, Health and Welfare Canada, 1975.

²⁷Report of the Committee on Diet and Cardiovascular Disease, Health and Welfare Canada, Ottawa, 1976.

²⁸A heart attack is a sudden blocking of one of the arteries that supply the heart muscle with blood. A blockage of the flow of blood to part of the heart gives rise to a heart attack, which physicians may call coronary thrombosis, coronary occlusion, or myocardial infarction. In myocardial infarction, the heart muscle supplied by the blocked artery does not get enough oxygen and other nutrients and begins to die. In other types of heart attack, a wandering blood clot may wedge at a narrow point and block the blood flow.

²⁹McWhinnie, J., Ouellet, B., and Romeder, J.M., Op. cit.

³⁰McRae, K.N., Ferguson, C.A., and Lederman, R.S., "The Battered Child Syndrome", Canadian Medical Association Journal, April, 1973.

³¹Greenland, C., Child Abuse in Ontario, Research and Planning Branch, Ontario Ministry of Community and Social Services, Toronto, 1973.

³²A registry maintained by The Ontario Ministry of Community and Social Services, Child Welfare Branch.

³³Van Stolk, M., The Battered Child in Canada, Toronto, McClelland and Stewart, 1972.

³⁴In comparing suicide rates over time or across areas, it is important to point out the possibility of variations in recording practices. Suicides reported to Statistics Canada are official counts submitted by the provinces. There are definite problems in determining whether a death is or is not suicide. The codes under which deaths are classified include "injury, undetermined whether accidentally or purposely inflicted". This classification allows for individual interpretation. It may well be that a large number of deaths under this classification are in fact suicides and not accidental.

³⁵Disabling injuries include not only loss of physical parts or bodily functions, but injuries that prevent workers from reporting to work on any day subsequent to the day upon which the injury occurred.

³⁶Silicosis, one of a group of diseases of the lungs termed pneumoconiosis is caused by the inhalation over a period of years of dust containing free silica, usually found in hard rock mining.

³⁷Report to the Royal Commission on the Health and Safety of Workers in Mines, Ministry of the Attorney General, Ontario, Toronto, 1976.

³⁸Report of the Advisory Committee on Asbestos Cancers to the Director of the International Agency Research on Cancer, British Journal of Industrial Medicine, 30, 1973.

³⁹A family of four earning less than \$12,000 a year in a city of 500,000 was considered a low-income family.

⁴⁰Fraser, R.D., Spasoff, M.D., and Prime, M.O., An Estimate of the Economic Burden of Ill Health, Ontario Council of Health, Toronto, 1976.

⁴¹The cost estimates for morbidity and mortality refer to the economic burden of "earnings lost because of premature death or disability". Only that proportion of morbidity that can be measured by in-patient days of institutional care is included in the estimate. Thus, lost work days spent recuperating at home and lost days for illnesses that did not require hospital care are excluded. Mortality estimate calculations were made using a 7.5% rate of discount.

TABLE 3.1
Litres of absolute alcohol consumed¹ per person aged 15 years and over, by province, 1967-77²

	1967	1973	1975	1977
	<i>litres per person</i>			
Newfoundland	5.8	8.7	10.5	11.2
Prince Edward Island	6.4	8.4	10.0	10.7
Nova Scotia	7.0	9.1	10.0	10.6
New Brunswick	6.5	8.0	9.0	9.9
Quebec	8.4	9.5	10.3	10.8
Ontario	9.5	10.8	11.5	12.0
Manitoba	8.5	10.5	11.4	12.0
Saskatchewan	5.4	9.3	10.4	11.2
Alberta	9.0	11.1	11.8	13.3
British Columbia	10.2	11.9	13.0	13.0
Yukon	18.4	19.0	21.1	21.2
Northwest Territories	9.7	16.0	15.4	15.3
Canada	8.8	10.3	11.1	11.9

¹Based on the following comparative strengths: beer: 5% absolute alcohol by volume; wine: 16% absolute alcohol by volume; spirits: 40% absolute alcohol by volume.

²Data are for the fiscal years ending March 31.

Source: *The Control and Sale of Alcoholic Beverages in Canada*; Catalogue 63-202, 1967-77.

TABLE 3.2
Use of alcoholic beverages by persons 15 years of age and over, 1976

	Persons aged 15 years and over using alcoholic beverages	Users who had not had a drink in the past 7 days	Users who had 4 or more drinks in the past 7 days
	<i>per cent</i>		
15-17 years	64.7	—	—
18 years	84.8	41.5	38.0
19 years	91.3	27.8	40.2
20-24 years	87.4	32.1	46.1
25-29 years	91.0	34.2	42.5
30-39 years	88.0	34.5	42.8
40-49 years	85.8	37.2	37.6
50-64 years	80.8	49.1	30.0
65 years	58.8	69.8	15.0
Total	82.4	..	..
Males of all age groups	85.7	..	..
Females of all age groups	76.8	..	..

Source: MacGregor, Betty, *Alcohol Consumption in Canada — Some Preliminary Findings of a National Survey in November-December, 1976*, Research Paper ERD-78-152, Promotion and Prevention Directorate, Health and Welfare Canada, 1978; *The Canadian Facts Monitor*, November-December, 1976.

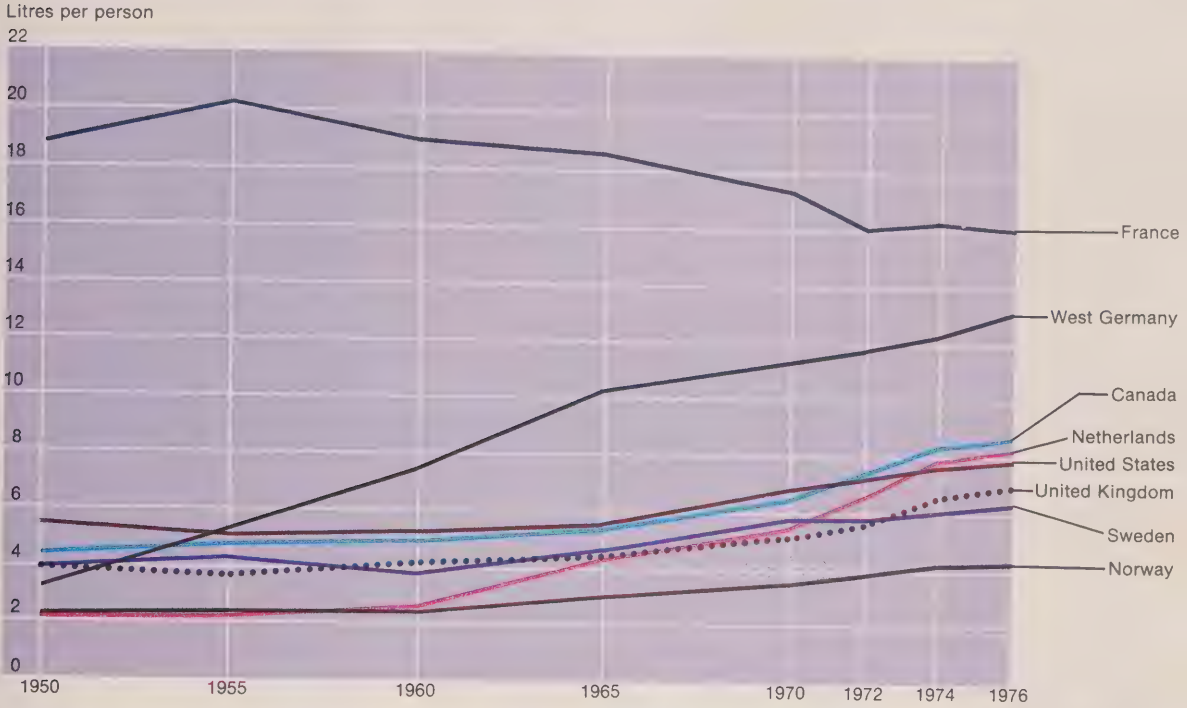
TABLE 3.3
Characteristics of alcohol consumers, 15 years of age and over, 1976¹

	Percentage of users		
	Females	Males	Total
Age:			
15-17 years	60.1	69.0	64.7
18-19 "	90.3	84.7	87.5
20-24 "	83.3	91.5	87.4
25-29 "	90.2	91.7	91.0
30-39 "	85.1	91.7	88.0
40-49 "	81.5	90.1	85.8
50-64 "	76.2	85.6	80.8
65 years and over	48.6	71.6	58.2
Region:			
British Columbia	78.9	91.7	85.2
Prairie region	77.6	85.5	81.7
Ontario	75.4	85.0	80.2
Quebec	81.8	86.4	84.1
Atlantic region	60.8	78.8	69.9
Income:			
Under \$5,000	60.2	78.5	67.2
\$ 5,000 - 9,999	71.6	78.7	74.8
\$10,000 - 14,999	75.4	81.4	78.5
\$15,000 - 19,999	82.6	90.1	86.5
\$20,000 and over	86.8	92.7	90.0
Education:			
Grade 8 and under	63.7	81.1	72.6
Secondary	67.0	84.4	81.1
Technical institute	86.8	89.7	88.3
University	88.8	92.3	90.7
Occupation:			
Professional/managerial	84.7	90.7	87.7
Sales/white collar	86.0	87.6	86.8
Skilled labour	83.0	86.5	84.8
Unskilled labour	68.6	88.3	79.8
Farmer	67.7	78.2	73.8
Unemployed	69.8	87.8	80.5
Size of community:			
Under 10,000 and rural	70.8	82.7	76.9
10,000 - 30,000	79.6	82.9	81.0
30,000 - 100,000	75.4	86.5	81.1
100,000 - 500,000	79.0	87.4	82.8
Over 500,000	80.5	88.3	84.5
Total	76.6	85.7	81.1

¹Does not include Northwest Territories and Yukon.

Source: MacGregor, Betty, *Alcohol Consumption in Canada — Some Preliminary Findings of a National Survey in November-December, 1976*, Research Paper ERD-78-152, Promotion and Prevention Directorate, Health and Welfare Canada, 1978; *The Canadian Facts Monitor*, November-December, 1976; adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

CHART 3.4

Annual per person consumption of absolute alcohol¹ in selected countries, 1950-76

¹Beverage alcohol content by volume (particularly for beer and wine) may vary in different countries, but this has been taken into account as much as possible.

Source: Brown, M.M., *International Survey, Volume I, Alcohol Taxation and Control Policies*, 3rd edition, Brewers Association of Canada, March 1978. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

TABLE 3.5
Estimated extent of alcoholism,¹ 1965-76

	1965	1971	1975	1976
Estimated number of alcoholics	283.4	420.9	606.7	624.0
Estimated number of alcoholics per 100,000 population 20 years of age and over	2.5	3.6	4.2	4.2

¹Estimates of alcoholism prevalence were obtained by means of the Jellinek formula which infers the probable number of alcoholics in a population from the centered two-year moving average of total reported liver cirrhosis mortality.

Source: Addiction Research Foundation Annual Reports, Addiction Research Foundation, Toronto, Ont.; *Causes of Death*, Catalogue 84-203, 1965-77; *Vital Statistics*, Catalogue 84-201, 1965-77.

TABLE 3.6
Premature deaths¹ and potential years of life lost² because of hazardous drinking, 1977

	Causes of death						Total		Total
	Cirrhosis of the liver	Cancer of oral cavity and pharynx, larynx, and esophagus	Motor vehicle traffic accidents	Accidental falls and fires	Alcoholism and alcoholic psychosis	Male	Female		
Total deaths of persons aged 1-70 years	2,234	1,003	4,872	1,169	632	7,301	2,609	9,910	
Estimated percentage of deaths due to hazardous drinking	68.1	21.7 ³	38.2	26.4	100.0	44.6	44.3	44.5	
Deaths attributable to hazardous drinking	1,521	218	1,861	309	632	3,256	1,156	4,410	
Total potential years of life lost (Pyl)	35,277	12,728	197,440	36,322	12,506	218,605	75,668	294,273	
Estimated percentage of Pyl due to hazardous drinking	67.5	21.5 ³	38.2	18.9	100.0	40.6	39.8	40.4	
Pyl attributable to hazardous drinking	23,812	2,737	75,422	6,865	12,506	88,954	30,116	118,886	

¹Premature refers to deaths between the ages of 1 and 70.

²Pyl = Potential years of life lost. A person who dies, for example, at age 30 contributes 40 years of potential years of life lost (70-30) to the total. In 1977 there were a total of 167,498 deaths from all causes. Of these, 44.0% or 73,676 deaths, were between the ages of 1 and 70. There were 4,475 deaths under one year of age and 89,128 deaths over 70 years of age.

³Includes men only, no data available for women.

Source: Adapted from Ouellet, B., Romeder, J.M., and Lance, J.M., *Premature Mortality Attributable to Smoking and Hazardous Drinking in Canada: Volume I: Summary, Volume II: Detailed Calculations*, Health and Welfare Canada, 1977. *Causes of Death*, Catalogue 84-203, 1976.

TABLE 3.7
Results of a roadside survey to determine the extent of drinking and driving, 1974

Drivers tested	Age	Percentage who had been drinking ¹	Percentage impaired ²	Distribution of the impaired across age groups	Percentage of those who had been drinking who were impaired
				<i>per cent</i>	
Number					
402	16-17	14.7	1.1	1.2	7.5
904	18-19	19.3	2.5	6.2	13.0
2,310	20-24	21.7	4.1	25.9	18.9
1,597	25-29	20.0	4.3	18.8	21.5
924	30-34	26.0	7.2	18.2	27.7
721	35-39	22.3	3.7	7.3	16.6
624	40-44	17.6	3.2	5.5	18.2
533	45-49	20.8	5.8	8.5	27.9
966	50 and over	15.2	3.2	8.5	21.1
Total		20.3	3.8	100.0	18.7

¹Blood alcohol level of 0.015% or greater.

²Blood alcohol level of 0.095% or greater. Note that the current Canadian legal level is 0.080%.

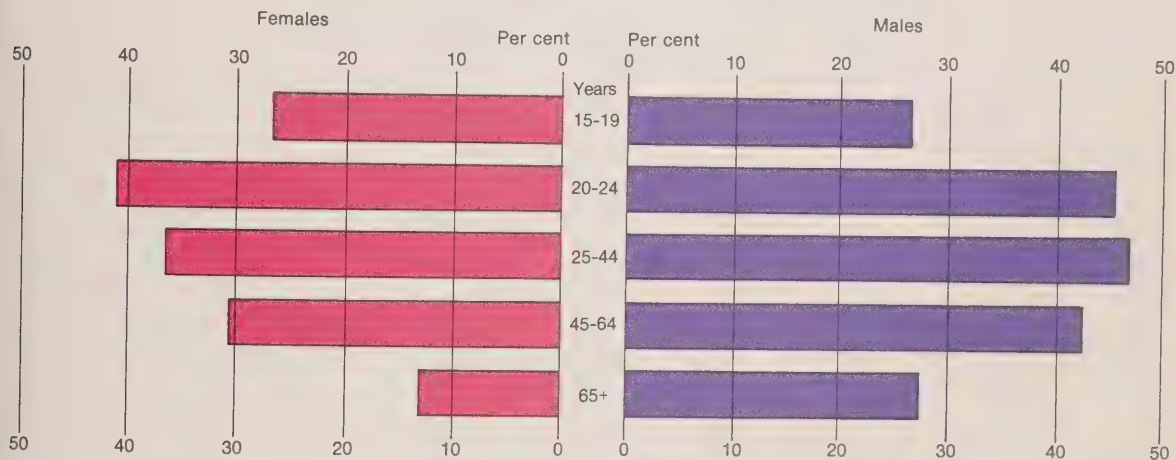
Source: 1974 *Roadside Survey*, Federal Department of Transport, cited in *Impaired Driving*, Technical Report Series No. 8, Non-medical Use of Drugs Directorate, Health and Welfare Canada, 1978.

TABLE 3.8
Driving while impaired, offences reported by police, by
province, 1966-77

	1966	1971	1973	1975	1977
	<i>per 100,000 persons</i>				
Newfoundland	133.9	285.7	525.4	647.9	650.1
Prince Edward Island	358.2	661.8	733.3	880.7	674.9
Nova Scotia	188.0	402.0	444.9	541.1	490.6
New Brunswick	191.1	413.2	451.7	521.5	500.2
Quebec	126.1	275.5	202.1	456.7	433.8
Ontario	200.5	429.2	497.8	511.7	511.1
Manitoba	122.8	454.1	555.3	535.7	728.4
Saskatchewan	160.4	574.7	712.7	866.0	906.9
Alberta	142.1	418.3	652.6	773.7	997.7
British Columbia	356.5	733.2	760.8	979.5	900.9
Yukon	355.0	1,772.0	2,126.8	2,168.2	2,018.6
Northwest Territories			1,137.1	2,123.5	1,794.4
Canada	182.3	422.8	468.4	593.7	604.2
Total number	89,751	91,189	103,376	134,936	140,731

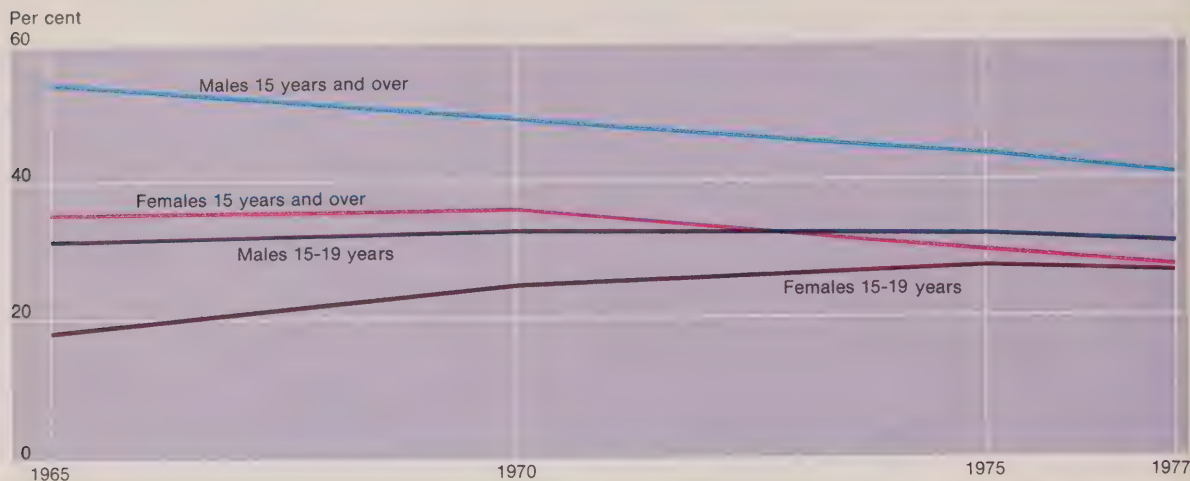
Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1973, 1975 and 1977; *Traffic Enforcement Statistics*, Catalogue 85-206, 1966 and 1971.

CHART 3.9
Percentage of regular cigarette smokers by age and sex, 1977



Source: *Smoking Habits of Canadians, 1977*, Promotion and Prevention Directorate, Health and Welfare Canada, 1977. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

CHART 3.10
Percentage of regular cigarette smokers by age group and sex, 1965-77



Source: *Smoking Habits of Canadians, 1977*, Promotion and Prevention Directorate, Health and Welfare Canada, 1977. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

TABLE 3.11
Deaths from smoking-related diseases, by sex, 1961-77

	Cancer of the trachea, bronchus and lung		Ischemic heart disease (excluding angina pectoris)		Chronic bronchitis		Emphysema	
	Males	Females	Males	Females	Males	Females	Males	Females
1961	2,411	363	25,885	14,269	497	100	361	48
1962	2,602	432	26,573	14,942	560	104	469	64
1963	2,829	417	27,292	15,567	582	147	598	72
1964	2,924	463	28,033	15,897	672	104	607	85
1965	3,077	515	29,324	16,716	798	154	677	122
1966	3,295	548	29,057	17,055	924	171	707	109
1967	3,700	618	29,445	17,025	930	158	795	112
1968	3,799	670	29,695	17,596	1,145	212	751	132
1969	4,030	695	29,896	18,412	1,163	253	1,050	183
1970	4,331	758	30,325	18,793	1,226	278	1,169	239
1971	4,611	802	30,079	18,749	1,347	263	1,187	258
1972	4,813	981	30,723	19,296	1,203	296	1,285	244
1973	5,091	1,078	30,689	19,793	1,217	260	1,236	230
1974	5,448	1,190	31,327	20,436	1,050	233	1,092	233
1975	5,511	1,255	30,764	19,832	991	257	1,076	221
1976	5,804	1,319	31,065	20,091	970	260	1,060	215
1977	6,140	1,519	31,091	20,188	847	255	968	225

Source: Vital Statistics Section, Statistics Canada; and *Vital Statistics, Deaths*, Catalogue 84-206, 1961 to 1977.

TABLE 3.12
Number of new cases of lung cancer,¹ 1969-77

		1969	1971	1973	1975	1977	Total
0-34 years:	Male	12	16	11	16	17	72
	Female	5	4	11	12	9	41
35-44 years:	Male	91	84	92	97	116	480
	Female	30	33	41	36	64	204
45-54 years:	Male	374	417	470	474	697	2,432
	Female	93	98	140	148	263	742
55-64 years:	Male	847	958	1,013	1,165	1,744	5,727
	Female	135	156	201	274	450	1,215
65-74 years:	Male	886	996	1,038	1,235	2,216	6,371
	Female	120	153	168	244	452	1,137
75 years and over:	Male	496	525	583	625	1,350	3,579
	Female	60	94	115	125	281	675
Age not stated:	Male	33	1	5	2	2	43
	Female	2	—	—	—	—	2
Total: ²	Male	2,739	2,997	3,212	3,614	6,142	18,704
	Female	445	538	676	839	1,519	4,017
Total, male and female		3,184	3,535	3,888	4,453	7,661	22,721

¹Includes cancer of the trachea and bronchus.

²Totals exclude cases registered by the Ontario registry and Quebec cases discovered from death certificates.

Source: Vital Statistics Division, Statistics Canada, unpublished data.

TABLE 3.13
Deaths and potential years of life lost (Pyll) attributable to smoking, between the ages of 1 and 70, 1977

	Causes of death						Total		
	Cancer of trachea, bronchus and lung	Cancer of oral cavity and pharynx, larynx and esophagus	Chronic bronchitis and emphysema	Ischemic heart disease	Cerebrovascular disease				
						Male	Female	Total	
Total deaths (1-70 years)	4,726	1,003	931	19,368	3,752	22,156	7,624	29,780	
Percentage of deaths due to smoking	63.4	65.5	41.9	23.6	12.3	35.8	14.9	30.4	
Deaths attributable to smoking	2,996	657	390	4,570	462	7,936	1,139	9,075	
Total potential years of life lost (Pyll)	49,328	12,728	9,438	208,443	44,606	244,295	80,248	324,543	
Percentage of Pyll due to smoking	61.4	65.8	33.2 ¹	30.7	14.5	39.8	18.8	34.6	
Pyll attributable to smoking	30,287	8,375	3,133 ¹	63,992	6,468	97,157	15,098	112,255	

¹Includes men only, no data available for women.

Source: *Causes of death*, Catalogue 84-203, 1977; adapted from Ouellet, B., Romeder, J.M., and Lance, J.M., *Premature Mortality Attributable to Smoking and Hazardous Drinking in Canada, Volume I: Summary, Volume II: Detailed Calculations*, Health and Welfare Canada, 1977.

TABLE 3.14
Illicit narcotic drug users¹ reported for the first time to the Bureau of Dangerous Drugs, 1973, 1975 and 1977²

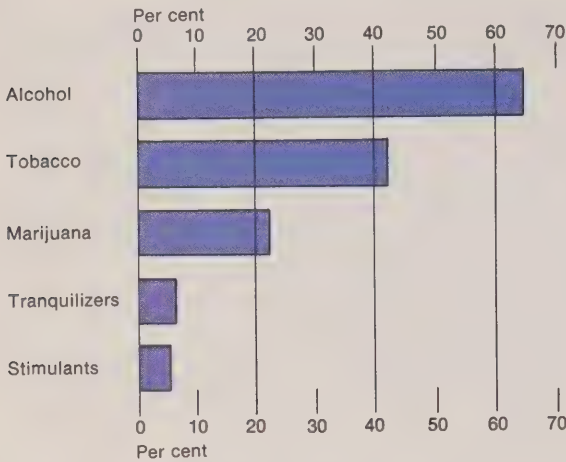
Users first reported	Canada			British Columbia			Other provinces		
	1973	1975	1977	1973	1975	1977 ²	1973	1975	1977 ²
Males	1,674	1,670	1,181	953	577	264	721	1,093	917
Females	592	376	318	364	139	108	228	237	210
Total	2,266	2,046	1,499	1,317	716	372	949	1,330	1,127
Total illicit users known to the Bureau of Dangerous Drugs	10,250	13,927	17,242	6,276	7,516	7,694	3,979	6,411	9,548

¹An illicit user is one for whom the source of the narcotic was illicit. Not all known illicit users have been convicted under the Narcotic Control Act but most have been. Illicit users are retained in the index until reports of death or deportation are received, or until a period of 10 years without further adverse information has elapsed.

²Figures for 1977 include a small number of users under the age of 15.

Source: *Bureau of Dangerous Drugs Annual Reports*, 1973-78.

CHART 3.15
Proportion of Canadian students reporting
drug use¹ in 1976



¹The Crude Weighted Average of the proportion of drug users (used at least once in the previous six months) in six studies.

Source: Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

TABLE 3.16
Percentage of population using non-prescription
remedies,¹ by province, 1973

	Percentage making ²			
	Daily use	Weekly use	Monthly use	Yearly use
Prince Edward Island	29	60	85	96
Nova Scotia	41	56	85	96
New Brunswick	39	57	83	95
Quebec	48	65	87	95
Ontario	50	66	90	96
Manitoba	45	58	88	96
Saskatchewan	45	66	90	97
Alberta	55	70	91	98
British Columbia	53	68	88	97
Canada ³	49	65	88	96

¹Non-prescription remedies include any drugs which may be purchased without a doctor's prescription, for example aspirin, cough and cold remedies, laxatives, vitamins, etc.

²Usage was determined as follows: Daily: reported daily use during the last month; Weekly: reported using remedy at least once a week during the last month; Monthly: reported monthly use but did not indicate whether or not the remedies were used daily or weekly; Yearly: reported using remedy at least once during the past year.

³Newfoundland, Yukon and Northwest Territories not included.

Source: Courtney, Heeler, Hustad and Zary, *Investigation of Use and Reasons for Use of Non-prescription Drugs, Report D: National Purchase Diary*, for CH & Z Ltd., 1974, adapted from: McWhinnie, J.R., Ouellet, B., and Lance, J.M., *Health Field Indicators, Canada and Provinces Long Range Health Planning Branch*, Health and Welfare Canada, Ottawa, 1976.

TABLE 3.17
Hospital discharges and deaths from adverse effects of selected groups of drugs, 1971-77

Diagnoses	Cases in 1976			Deaths			
	Male	Female	Total	1971	1974	1976	1977
Adverse effects of:							
Analgesics and antipyretics ¹	1,543	2,796	4,339	128	164	117	155
Other sedatives and hypnotics ²	1,091	2,434	3,525	369	317	288	221
Psychotherapeutics	1,674	3,894	5,568	59	86	57	62
Other central nervous system stimulants ³	65	76	141	8	6	1	-

¹Includes codeine, opium, heroin, synthetic analogues and salicylates and congeners such as aspirin and other over-the-counter drugs.

²Includes barbiturates, valium, librium, etc.

³Includes amphetamines.

Source: *Hospital Morbidity*, Catalogue 82-206, 1976, *Causes of Death*, Catalogue 84-203, 1971-77.

TABLE 3.18
Crime rates for drug offences,¹ 1969-77

Offence	1969	1971	1973	1975	1977
Addicting opiate-like drugs ²	4.0	9.0	17.2	13.1	19.8
Cannabis (marijuana, hashish)	40.9	78.2	193.0	206.5	250.8
Controlled drugs ³	2.7	7.5	9.6	7.3	4.0
Restricted drugs ⁴	10.1	16.1	19.1	16.6	7.9

¹Based on 100,000 population, aged 7 years or older.

²Includes heroin, cocaine, and drugs under jurisdiction of Narcotic Control Act, except cannabis and hashish.

³Includes amphetamines, barbiturates, methamphetamines, etc.

⁴Includes LSD, MDA and other hallucinogens.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1969-77.

TABLE 3.19
Apparent per person¹ consumption of foods, 1965-77

	1965	1967	1969	1971	1973	1975	1977
	<i>retail weight — grams/day</i>						
Cereals	202.94	185.86	190.19	181.11	189.54	196.56	185.19
Sugars and syrups	135.29	136.00	137.41	141.15	145.04	114.07	119.95
Pulses and nuts	19.75	17.56	16.64	20.47	19.70	28.10	9.85
Oils and fats	50.28	55.85	57.40	56.42	59.18	60.30	61.24
Tea (tea leaf equivalent)	<i>kilo</i> 1.09	1.09	0.95	1.10	1.13	1.11	1.17
Coffee (green beans)	<i>kilo</i> 3.95	3.95	4.08	4.06	4.22	4.33	3.52
Cocoa (green beans)	<i>kilo</i> 1.44	1.41	1.38	1.59	1.61	1.32	1.31
Ale, beer, porter and stout	<i>litres</i> 6.47	6.81	7.07	7.83	8.49	8.68	8.57
Distilled spirits	<i>litres</i> 0.47	0.51	0.52	0.61	0.71	0.79	0.82
Soft drinks	<i>ml/day</i> —	—	—	—	—	172.63	182.59
Tomatoes	39.23	40.39	40.46	36.88	44.82	40.64	35.29
Fruit:							
Citrus fruit	45.76	53.15	53.71	54.65	59.44	67.17	78.64
Apples	45.14	39.12	45.93	43.35	40.67	46.56	46.96
Total, fruit	234.55	232.70	246.58	244.48	228.40	263.22	262.90
Vegetables	125.17	118.85	121.92	127.96	134.71	154.06	145.96
Mushrooms	1.28	1.49	1.91	2.76	3.69	4.11	5.12
Potatoes (fresh)	167.43	212.39	207.82	198.28	189.05	193.48	194.85
Meat (carcass weight)	188.35	197.62	197.00	205.71	202.49	214.12	215.66
Eggs	39.44	38.86	39.87	39.79	36.77	36.15	34.62
Poultry (eviscerated weight)	45.45	50.67	53.57	54.05	57.10	52.05	56.51
Fish (edible weight)	15.89	15.35	15.07	14.79	15.06	15.89	21.09
Cheese and casein	13.71	14.82	16.72	18.90	21.47	22.69	23.26
Fluid milk	<i>ml/day</i> 438.21	425.84	356.37	430.83	453.37	431.45	469.37
Other milk	<i>ml/day</i> 35.31	34.04	36.13	28.85	27.79	26.22	33.20
Other dairy ²	<i>ml/day</i> 41.72	43.04	44.37	46.60	48.42	47.83	50.39
Population as of July 1	<i>000s</i> 19,678	20,412	21,028	21,592	22,072	22,727	23,316

¹Per person values do not represent total food supplies actually consumed by an individual or specified group of individuals but provide data on what is available for consumption on the average by the total Canadian population as of July 1.

²Includes chocolate drink, yogurt, ice cream, milkshake mix, sherbet and ice milk.

Source: Horticultural Crops Unit, Agriculture Division, Statistics Canada.

TABLE 3.20
Contribution to total calories by carbohydrate, fat and protein in foods available for consumption, 1935-77

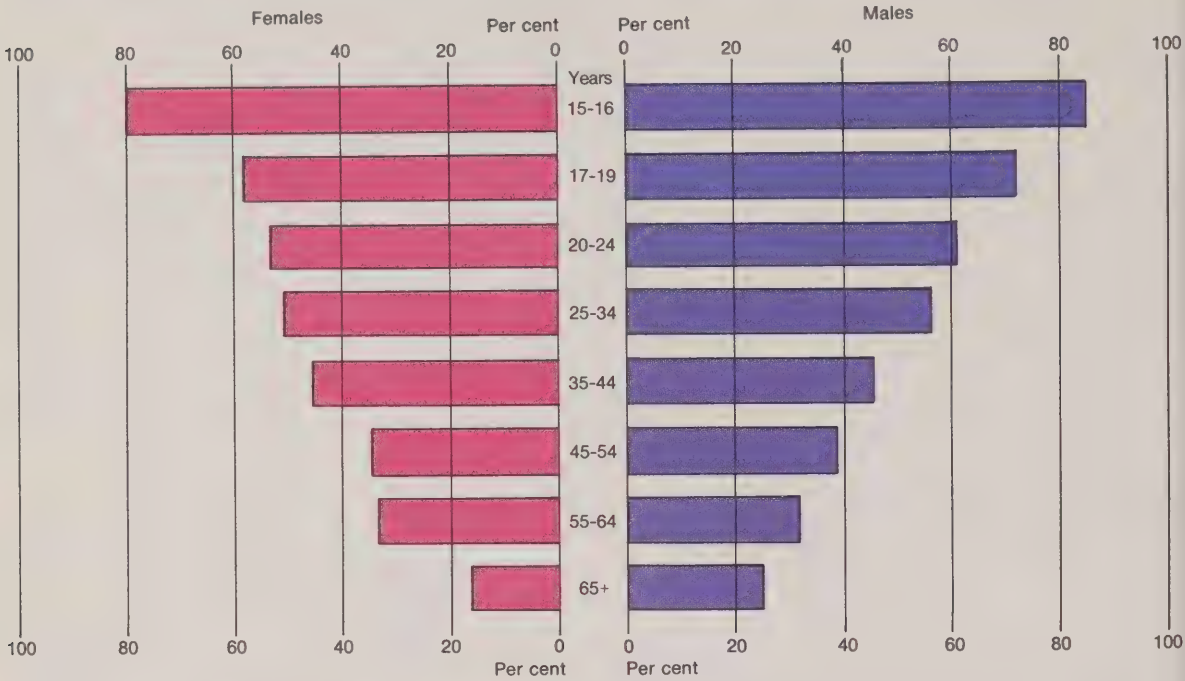
	Total calorie disappearance ¹	Carbohydrate		Fat		Protein	
		Total	Percentage of total calories	Total	Percentage of total calories	Total	Percentage of total calories
	<i>grams</i>	<i>grams</i>		<i>grams</i>		<i>grams</i>	
1935	3,010	407	54	114	34	89	12
1940	2,966	390	53	118	35	86	12
1945	3,055	388	51	123	36	99	13
1950	3,063	405	52	126	37	83	11
1955	3,005	387	51	126	38	86	11
1960	2,999	386	51	127	38	86	11
1965	3,077	400	51	128	38	88	11
1970	3,141	390	49	140	40	88	11
1973	3,192	378	47	146	41	95	12
1976 ²	3,321	394	47	153	41	98	12
1977 ²	3,297	392	48	151	41	98	12

¹Per person per day calculated from food disappearance figures supplied by Statistics Canada.

²There was a slight change in the way data were recorded after 1973. Thus figures above and below this line are not strictly comparable. However, it was felt by the authors that the data were not misleading when displayed in this fashion as an interrupted historical series.

Source: Report of the committee on diet and cardiovascular disease 1976, Health and Welfare Canada, unpublished data.

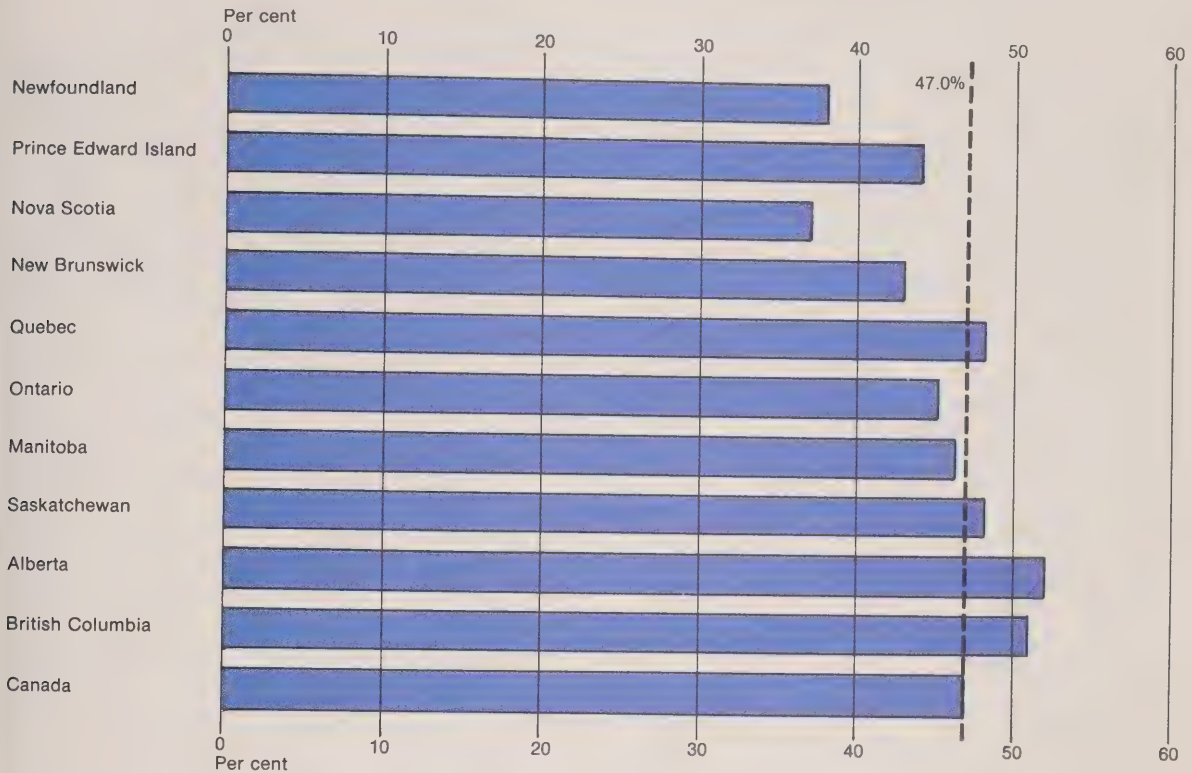
CHART 3.21
 Participation ¹ in sports or exercise activities by age and sex, February, 1978



¹Participation during the week prior to the survey.

Source: *February 1978 Survey on Selected Leisure Time Activities*, Education, Science and Culture Division, Statistics Canada. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

CHART 3.22

Participation¹ in sports or exercise activities by province, February, 1978

¹Participation during the week prior to the survey.

Source: February 1978 Survey on Selected Leisure Time Activities, Education, Science and Culture Division, Statistics Canada. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

TABLE 3.23

Responses to the question: "Comparing yourself with others of your own age would you say that you are — more fit; — less fit; — about the same fitness?"

	Male	Female
	per cent	
Not able to participate in sports or exercise due to illness, handicap, etc.	6.6	8.0
Less fit	7.7	10.4
About the same fitness	51.9	54.9
More fit	26.0	17.8
Unclear or no response to question	7.7	8.9
Total	100.0	100.0

¹Sample size was 50,935.

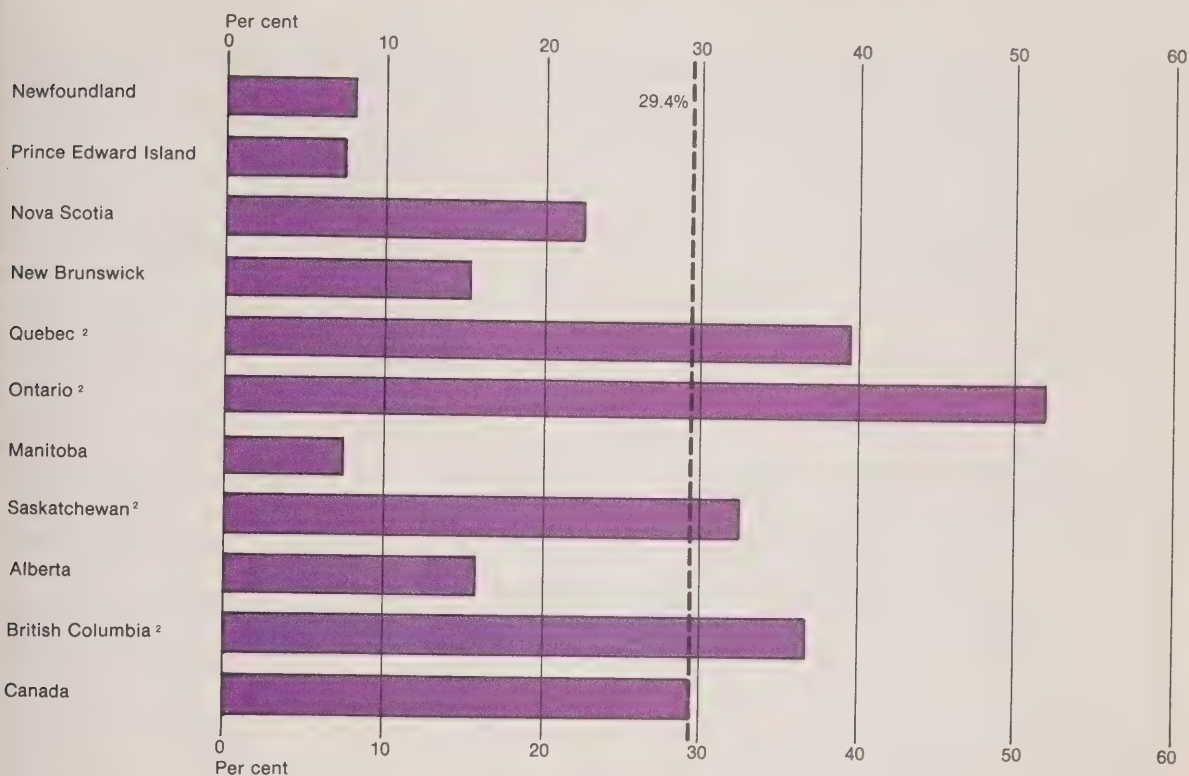
Source: 1976 Survey of Physical Recreation and Sport, conducted by Statistics Canada for the Fitness and Amateur Sport Branch of Health and Welfare Canada.

TABLE 3.24
Patient-days by major causes, 1976

	Males	Females	Percentage of total, all causes	Total
Heart disease:	1,841,401	1,806,512	9.2	3,647,913
Ischemic	1,392,296	1,308,942		2,701,238
Other forms	449,105	497,570		946,675
Accidents:	1,605,087	1,413,256	7.8	3,081,365
Fractures and intercranial injuries	1,109,321	1,164,511		2,336,854
Other trauma	495,766	248,745		744,511
Cerebrovascular disease	1,235,760	1,634,782	7.2	2,870,542
Respiratory diseases:	1,664,962	1,267,060	7.4	2,932,022
Acute upper respiratory infection	264,393	206,194		470,587
Influenza	43,293	62,698		105,991
Pneumonia	529,867	471,955		1,001,822
Bronchitis and emphysema	309,584	160,939		470,523
Asthma	108,907	113,532		222,439
Other	408,918	251,742		660,660
Mental disorders:	1,181,595	1,540,751	6.9	2,722,346
Alcoholic psychosis	45,191	14,566		59,757
Other psychosis	460,456	699,075		1,159,531
Neurosis and personality disorders	648,246	801,333		1,449,579
Mental retardation	27,702	25,777		53,479
All delivery:	...	2,097,018	5.3	2,097,018
Without complication	...	1,327,832		1,327,832
With complication	...	769,186		769,186
Diseases of the nervous system:	960,546	1,017,083	5.0	1,977,629
Hereditary and familial	45,006	38,720		83,726
Other	915,540	978,363		1,893,903
Diseases of the musculo- skeletal system:	694,681	1,101,274	4.5	1,795,955
Rheumatoid arthritis	107,015	282,402		389,417
Osteoarthritis	157,878	282,102		439,980
Other diseases	429,788	536,770		966,558
Arteriosclerotic diseases:	585,186	560,196	2.9	1,145,382
Arteriosclerosis	270,115	379,772		649,887
Other	315,071	180,424		495,495
Symptoms, senility and ill-defined conditions	467,639	607,772	2.7	1,075,411
Other diseases of breast and female genitalia	7,616	901,623	2.3	909,239
Infections of kidney and urinary system:	434,229	417,184	2.1	851,413
Nephritis and nephrosis	89,942	69,513		159,455
Infections of kidney	23,002	66,631		89,633
Infections of urinary system	137,787	105,254		243,041
Other diseases of urinary system	183,498	175,786		359,284
Infectious diseases	444,744	404,473	2.1	849,217
Diabetes	298,366	462,852	1.9	761,218
Other causes	5,978,563	6,987,089	32.6	12,902,630
Total, all causes	17,400,375	22,218,925	100.0	39,619,300

Source: Institutional Care Section, Health Division, Statistics Canada, unpublished data.

CHART 3.25
Observed seat belt use among drivers,¹ by province, 1977



¹Figures based on observations of nearly 17,000 drivers throughout Canada.

²These four provinces currently have legislation regarding mandatory seat belt usage.

Source: "A Survey to Determine the Level of Use of Seat Belts by Canadian Automobile Drivers", a report prepared for the Road and Motor Vehicle Traffic Safety Branch, Transport Canada, by Canadian Facts Co. Limited, Toronto, Ontario, February 1978. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

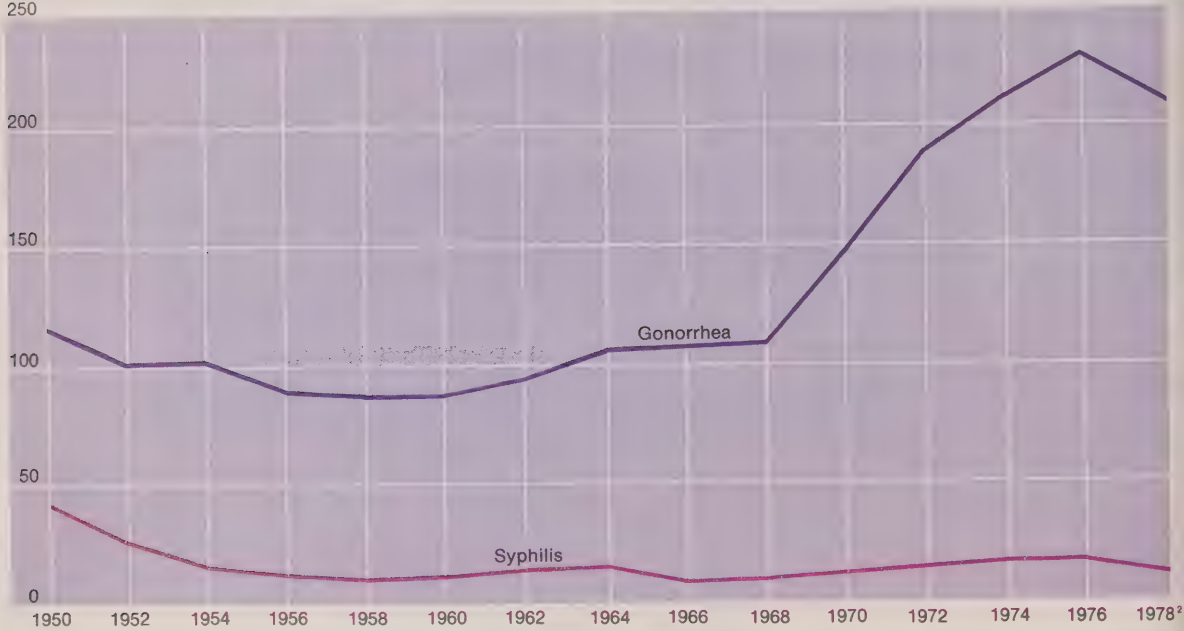
TABLE 3.26
Violent deaths of persons under 15 years of age, by
cause, 1965-77

	1966	1969	1971	1973	1975	1977
Motor vehicle accidents	896	856	823	795	662	562
All other accidents	1,405	1,154	1,133	1,016	913	758
Suicide	19	15	18	24	25	33
Homicide	48	48	48	44	55	53
All accidents, poisonings and violence	2,368	2,073	2,022	1,879	1,655	1,406

Source: *Causes of Death*, Catalogue 84-203, 1966-77.

CHART 3.27
Rates per 100,000 population of reported cases of syphilis and gonorrhoea,¹ 1950-78

Rate per 100,000 population
250



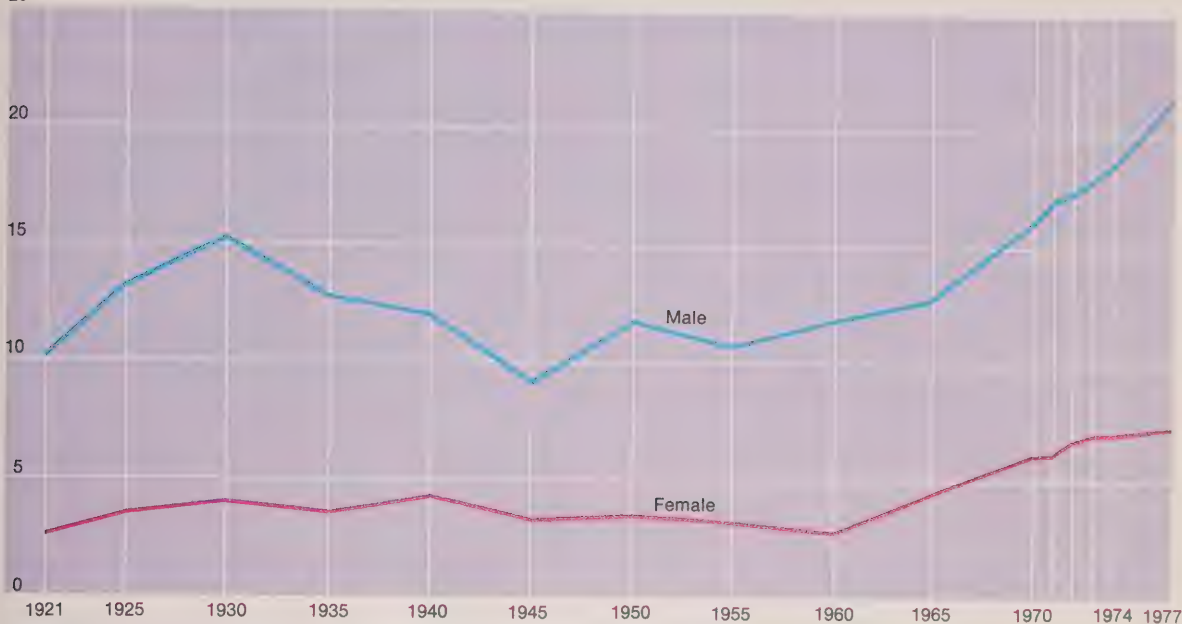
¹The Yukon to 1954 and the Northwest Territories to 1957 are not included.

²1978 figures are preliminary.

Source: *Annual Report of Notifiable Diseases*, Catalogue 82-201, 1950-78.

CHART 3.28
Suicide rates by sex, 1921-77¹

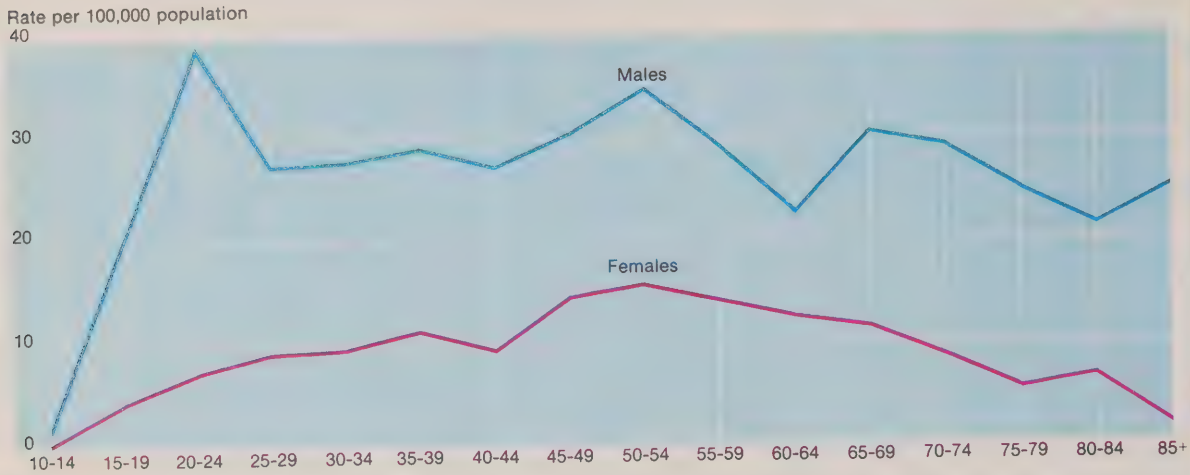
Rate per 100,000 population
25



¹1926 and later includes Quebec; 1949 and later includes Newfoundland; 1950 and later includes the Territories.

Source: *Suicide Mortality, 1950-1968*, Catalogue 84-528; *Causes of Death*, Catalogue 84-203, 1977; *Vital Statistics*, Catalogue 84-201, 1977.

CHART 3.29
Suicide rates by age and sex, 1977



Source: *Causes of Death, Catalogue 84-203, 1977; Estimates of Population by Sex and Age for Canada and the Provinces, Catalogue 91-202, 1977.*

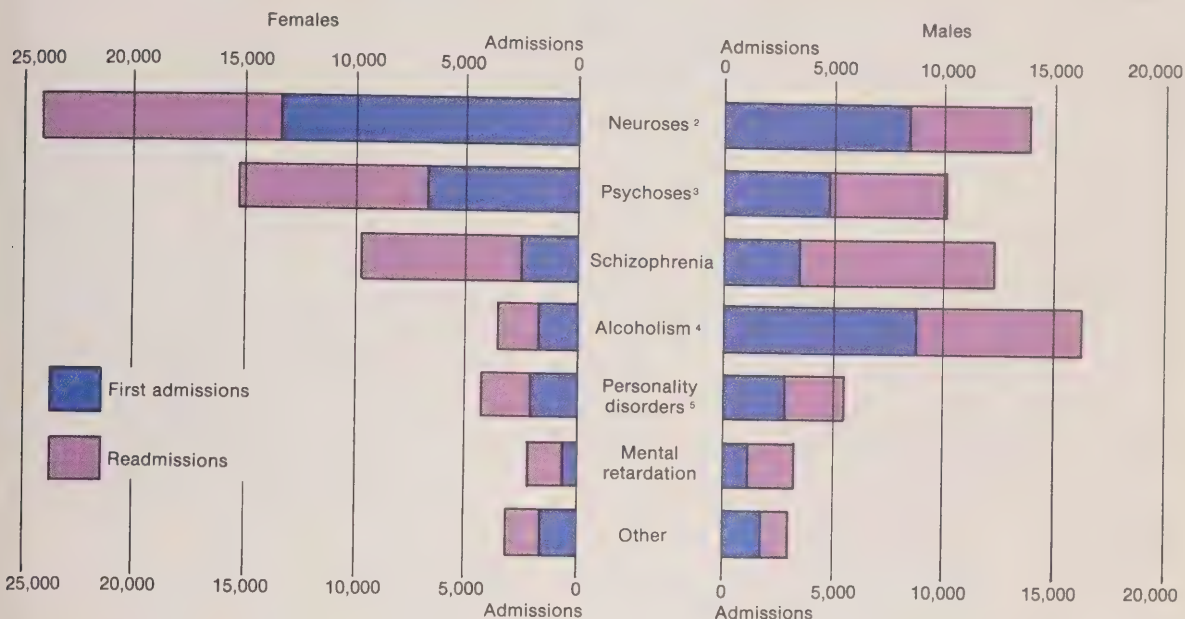
TABLE 3.30
Selected mental health statistics, 1961-76

	Patients on the books, December 31 ¹	Patients on the books per 1,000 population	Patients in institutions, December 31	Rated bed capacity of reporting institutions	Patients in institutions as a percentage of capacity
1961	76,606	4.2	65,312	70,052	93.2
1963	79,707	4.2	65,575	68,003	96.4
1965	78,642	4.0	63,558	69,091	92.0
1967	73,630	3.6	58,353	68,025	85.8
1969	66,934	3.2	52,658	66,567	79.1
1971	62,726	2.9	49,466	61,681	80.2
1973	52,889	2.4	45,313	57,750	78.5
1975	46,238	2.0	40,551	51,427	78.9
1976	35,218	1.5	31,516	40,109	78.6

¹Patients on the books include patients actually in residence, those absent on probationary leave, boarding in approved homes or otherwise absent from the institution but not officially separated as of December 31 of the relevant year.

Source: *Mental Health Statistics, Institutional Facilities, Services and Finances, Catalogue 83-205, 1961-76.*

CHART 3.31
First admissions and readmissions to psychiatric in-patient facilities¹
by major causes, 1976



¹Includes all mental hospitals and institutions as well as psychiatric units of general and allied special hospitals.

²Neuroses include neurosis, psychophysiological disorders, transient situational disturbances as well as behaviour disorders of childhood.

³Psychoses include organic as well as functional psychosis except schizophrenia.

⁴Alcoholism includes alcoholic problems as well as alcoholic psychosis.

⁵Personality disorders include personality disorders, sexual deviation, drug dependence and special symptoms.

Source: *Mental Health Statistics, Institutional Admissions and Separations, Catalogue 83-204, 1976*. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

TABLE 3.32
Deaths from artery disease, ulcers and hypertension, 1969-77

		1969	1971	1973	1975	1976	1977
Arteriosclerosis	Male	1,314	1,437	1,629	1,503	1,434	1,528
	Female	1,521	1,749	1,899	1,851	1,874	1,812
	Total	2,835	3,186	3,528	3,354	3,308	3,140
Hypertension	Male	136	123	113	107	108	105
	Female	151	144	148	152	125	145
	Total	287	267	261	259	233	250
Ulcers ¹	Male	687	657	577	521	445	435
	Female	268	261	267	245	258	234
	Total	955	918	844	766	703	669

¹Includes ulcers of the stomach and duodenum, peptic ulcers and gastrojejunal ulcers.

Source: *Causes of Death, Catalogue 84-203, 1977*.

TABLE 3.33
Work-injury experience, 1969-77

	1969	1971	1973	1975	1977 ²
Non-disabling injuries	504,587	480,287	547,256	543,905	559,900
Percentage of all injuries	63.4	60.5	55.5	55.2	54.0
Disabling injuries ¹					
Non-fatal	289,841	312,322	437,300	440,455	476,178
Fatal	1,001	924	1,124	957	819
Total, disabling	290,842	313,246	438,424	441,412	476,997
Percentage of all injuries	36.6	39.5	44.5	44.8	46.0
Total, all injuries	795,429	793,533	985,680	985,317	1,036,897
Employment 000s	7,780	8,079	8,759	9,419	9,813
Disabling injury frequency rate ^{3,4}	18.69	19.39	25.03	23.43	24.30
Injuries per 100 workers ³	10.22	9.82	11.25	10.46	10.57

¹Disabling injuries include not only loss of body parts or function, etc., but also any injuries that prevent an employee from reporting to work on any day subsequent to the day on which the injury occurred.

²1977 figures are preliminary.

³Rates are underestimated since Statistics Canada figures are used and not all persons employed are covered by Workmen's Compensation. The rates are underestimated by 25-30%.

⁴Number of disabling injuries per 1,000,000 man-hours worked calculated at 2,000 man-hours per worker per year.

Source: Occupational Safety and Health Branch, Labour Canada, from reports received from Workmen's Compensation Boards.

TABLE 3.34
Major causes of death, by sex, 1977

	Male	Female	Total
Diseases of the circulatory system	45,760	35,714	81,474
Neoplasms	20,378	16,041	36,419
Accidents, poisonings and violence	11,366	4,635	16,001
Diseases of the respiratory system	6,828	4,005	10,833
Diseases of the digestive system	3,742	2,388	6,130
Endocrine, nutritional and metabolic diseases	1,616	2,103	3,719
Symptoms and ill-defined conditions	1,259	942	2,201
Diseases of the genito-urinary system	1,148	828	1,976
Certain causes of perinatal mortality	1,122	834	1,956
Diseases of the nervous system and sense organs	1,023	786	1,809
Congenital anomalies	843	742	1,585
Other causes	1,787	1,608	3,395
Total, all causes	96,872	70,626	167,498

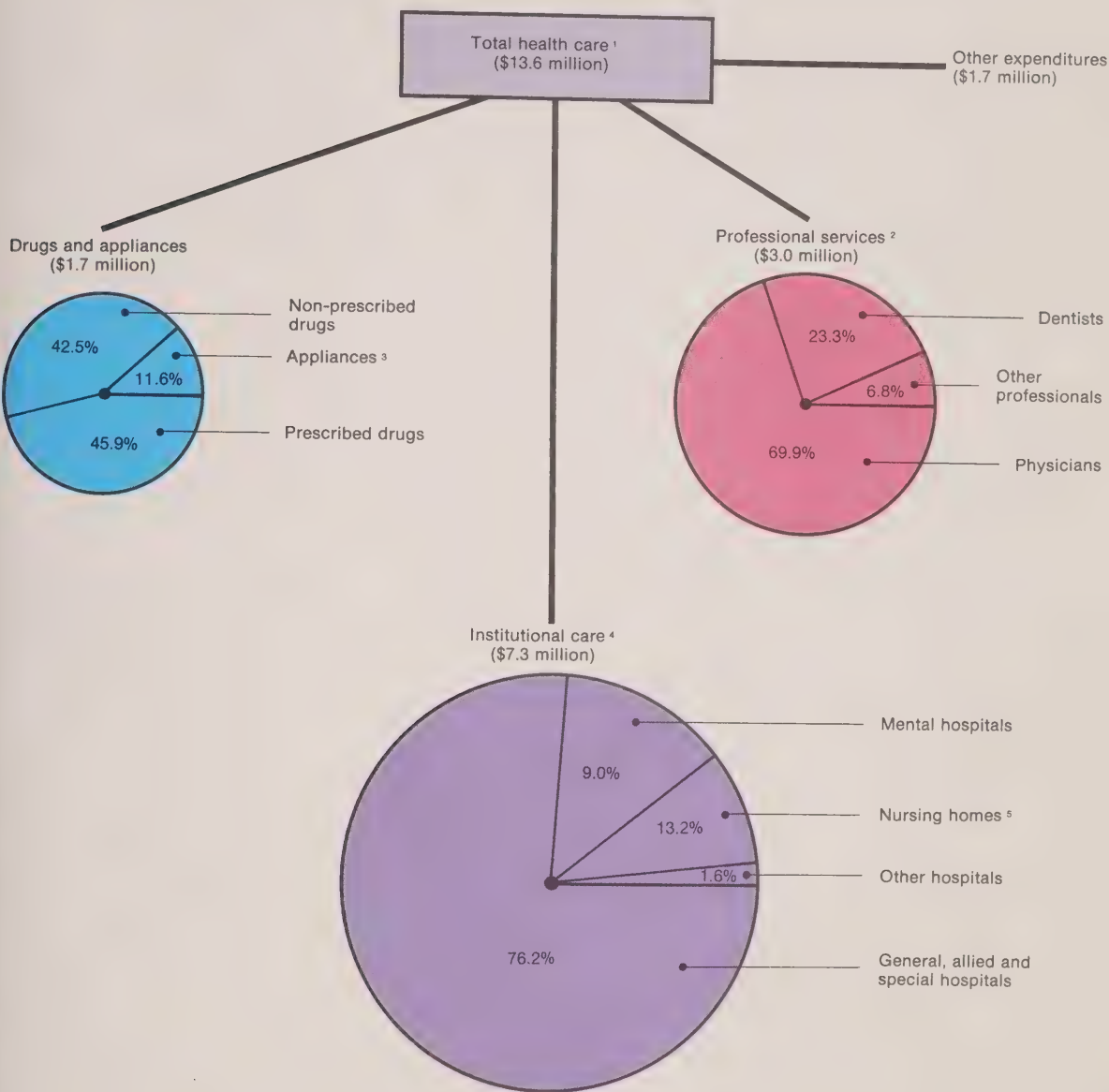
Source: *Causes of Death*, Catalogue 84-203, 1977.

TABLE 3.35
Congenital anomalies of the newborn, 1976

	Rank	Number	Rate per 100,000 population
Other, limb	1	1,469	413.7
Clubfoot (congenital)	2	1,210	340.8
Genital organs	3	990	278.8
Heart	4	863	237.4
Other, upper alimentary tract	5	507	142.8
Syndromes affecting multiple systems	6	372	104.8
Skin, hair and nails	7	282	79.4
Cleft palate and cleft lip	8	277	78.0
Other, circulatory system	9	269	75.8
Other, musculoskeletal system	10	263	74.1
Spina bifida	11	223	62.8
Ear, face and neck	12	214	60.3
Other, digestive system	13	204	57.5
Respiratory system	14	124	34.9
Hydrocephalus	15	113	31.8
Other and unspecified congenital anomalies	16	100	28.2
Nervous system	17	84	23.6
Urinary system	18	80	22.5
Anencephalus	19	68	19.2
Congenital anomalies of eye	20	50	14.1
Total		7,762	2,180.9
Total, live births	..	355,084	..
Male	..	182,303	..
Female	..	172,781	..

Source: *Hospital Morbidity*, Catalogue 82-206, 1976.

CHART 3.36
Distribution of health care expenditures in Canada, 1976



¹Health expenditures include the public and private sectors and therefore comprise expenditures incurred by federal, provincial or local governments, by private organizations and directly by consumers.
²This category includes only services provided by health professionals in private practice.
³Appliances include eyeglasses purchased from opticians or optometrists, hearing aids and other prostheses excluding dental prostheses.
⁴Data represent operating expenses and exclude capital costs.
⁵Includes nursing homes in which some residents receive nursing care.

Source: Health Economics and Statistics Division, Health and Welfare Canada. Adapted from Ouellet, B., *Health Field Indicators, Canada and Provinces, 1979*, Health and Welfare Canada, 1979.

TABLE 3.37
 Partial estimates,¹ direct and indirect cost of selected health problems, Ontario, 1971

	Total, direct and indirect	Proportion of all Ontario health costs	Proportion of costs that are				Total
			Direct		Indirect		
	\$		Hospital	Physician	Morbidity ²	Mortality	
			per cent				
Alcoholism	18,900,219	0.8	41.9	9.2	15.9	33.0	100.0
Alcoholic psychosis	3,493,576	0.1	69.2	0.7	17.2	13.0	100.0
Cirrhosis of liver	30,617,086	1.2	15.3	2.0	2.8	80.0	100.0
Cancer of the trachea, bronchus, lung	39,064,376	1.6	18.3	1.3	1.7	78.8	100.0
Bronchitis and emphysema	26,206,388	1.0	40.0	23.4	3.4	33.2	100.0
Arteriosclerosis	8,163,395	0.3	82.0	6.0	2.5	9.5	100.0
Acute myocardial infarction	177,898,893	7.1	14.2	1.6	2.0	82.2	100.0
Other ischemic heart disease	89,099,934	3.5	43.4	10.3	3.8	42.4	100.0
Other forms of heart disease	32,124,287	1.3	56.8	14.5	3.6	25.0	100.0
Cerebral hemorrhage	11,648,767	0.5	17.5	0.7	1.1	80.7	100.0
Cerebral embolism and thrombosis	16,102,484	0.6	55.8	6.3	3.4	34.5	100.0
Other cerebrovascular disease	50,517,102	2.0	58.3	4.0	2.9	34.8	100.0
Hypertensive disease	23,800,602	0.9	27.5	55.7	3.5	13.4	100.0
Chronic rheumatic heart disease	14,465,382	0.6	30.9	5.6	3.6	59.9	100.0
Drug dependence	1,855,739	0.1	63.7	14.4	18.1	3.8	100.0
Avitaminoses and other nutritional deficiency	4,138,853	0.2	68.8	14.9	2.4	13.9	100.0
Venereal disease	1,105,652	...	47.6	48.5	1.1	2.8	100.0
Ulcer of stomach and peptic ulcer	8,765,009	0.4	54.8	15.4	9.0	20.8	100.0
Ulcer of duodenum	14,659,796	0.6	59.5	14.8	12.4	13.3	100.0
Accidents, poisonings and violence	376,432,182	15.0	22.6	10.0	2.4	65.1	100.0
Congenital anomalies	35,224,484	1.4	43.8	9.9	1.5	44.7	100.0

¹Do not include all costs of hospital services, dental costs, or drugs and pharmaceuticals. Also, neglect of multiple diagnoses is a source of bias in these estimates.

²Morbidity estimates were obtained from hospital admission cards and as such are subject to an unknown margin of error.

Source: Fraser, R.D., Spasoff, R.A., and Prime, M.G., *The Economic Burden of Ill Health*, Ontario Council of Health, Toronto, Ontario, 1976.

The image features a stylized map of the United States, including Alaska and Hawaii, rendered in a dark, textured color. The map is set against a background of a fine, repeating halftone dot pattern. The word "Education" is printed in a clean, white, sans-serif font in the upper right quadrant of the image.

Education

Tables, Charts and Maps

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Education

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Office of the Senior Advisor on Integration,
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*with the assistance of the Projections Section,
Education, Science and Culture Division,
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Education has been described as one of Canada's largest industries.¹ Close to one third of all Canadians are either students, teachers, or administrators, and total spending on education has grown from just under half a billion dollars in 1950 to an estimated \$17 billion in 1977-78. This represents about 17% of total government spending in Canada — the second largest item of government expenditure. Social security ranks first.

There are serious problems facing Canadian education: declining enrolments, shrinking budgets, pressures for increased relevance to the working world, and diverse public opinion about what should be taught and what is the value of higher education.

Among the factors that have contributed to the ongoing debate about the role of education in Canada are: increased unemployment, now reaching into the ranks of the well-educated; more women in post-secondary institutions and the labour force; the speed of technological advance and the complexity this has brought to present-day work tasks, and tension caused by the concept of education as a means of self-development, at the same time that the market place and students demand practical training. There is already some division of labour between community colleges and the universities, the former providing mainly short-term instruction in job-oriented skills.

The Lengthening Educational Process

Today, most young people spend more time being educated than did their parents. The median years of schooling rose from 7.8 years in 1951, to 8.5 years in 1961, 9.5 in 1971 and 10.5 in 1976 (all exclusive of kindergarten), much of this because more students are going on to university and other post-secondary institutions. In addition, school attendance starts earlier in life. Traditionally, Canadian children began school in their fifth and sixth year, but now, through day care, nursery schools or kindergarten, they are being exposed to institutional settings at younger ages. The proportion of four- and five-year-olds registered in kindergarten tripled between 1961 and 1976, and it is projected that by 1986 almost 60% of this age group will be in such programs (*Chart 4.2*). This does not take into account the many younger children who are enrolled in day-care centres and nursery schools.

Compared with other countries, Canada's development of pre-primary education might seem slow (*Chart 4.4*). Kindergartens are still not available in some provinces, and in many small communities and rural areas. In addition, while the labour force participation rate of women in Canada has increased markedly, it is still somewhat below that of other nations. Consequently, the demand for child-care facilities and earlier school entry, which benefit working mothers, is lower.

Chart 4.5 shows that on the international level, at least for the countries selected, the average school-leaving age is

either holding its own or increasing. Figures for Canada and Sweden show a decline of only one tenth of one per cent in four years — a variation so small that it could be caused by differences in recording or gathering the data.

Trends in Enrolment and Participation

Enrolment at the elementary level has been declining since 1971² — down 12% by 1977 (*Table 4.1*). The consequences have become evident across the country as some school boards have laid off teachers and closed schools. After 1976, secondary schools found fewer children in their classrooms, while beyond high school, the effects of a shrinking number of entrants are yet to be felt. The 1980s may see universities and colleges trying to fill their empty seats with older part-time students, cutting programs, and possibly refining or reformulating their role.

Trends in total enrolment and participation at the secondary and post-secondary levels can be divided into two distinct phases: rapid growth in the 1960s, and slow growth, or even decline, in the 1970s. If one looks at Chart 4.6, it seems that there has been a significant drop in the proportion of 14- to 17-year-olds enrolled in school full time (from 89.4% in 1971 to 85.8% in 1977). However, much of this drop is due to a change in Quebec's school system which allows many students to complete the secondary level at age 16 instead of 17 as in 1971. In the other provinces taken together, there has been a very slight decline in the proportion of 14- to 17-year-olds in school. Generally, full-time enrolment is down in age groups under 20, but up or stable beyond age 20 (*Chart 4.7*).

Full-time university enrolment stalled in the 1970s after major increases in the 1960s (*Table 4.9*). Undergraduate enrolment as a proportion of the population 18 to 21 rose from 11.9% in 1961 to 18.6% in 1976, but declined one half of one percentage point the year after. Part-time enrolment is steadily taking a larger share of the pie: about 31% in 1962 and 36% in 1977 (*Table 4.8*).

A number of factors may have contributed to the apparent sag in the popularity of full-time university attendance. Job prospects for university graduates in the 1970s are less favourable than they were in the 1960s, and many graduates accept positions below or not directly related to their level of training. In addition, the social value and prestige associated with a degree appear to have diminished as the number of graduates increased.

While university enrolment is lagging, students are flocking to other types of post-secondary education. Here, enrolment has grown steadily and rapidly during the 1970s. Non-university institutions accounted for most of the increase in total full-time post-secondary enrolment in the 1970s (*Table 4.1*). While the number of university students increased by 16% from 1971 to 1977, non-university enrolment grew more than 38%.³ Similarly, while university enrolment rates have been stable (or have fallen) in the 1970s, the non-university rate has continued to rise, although not as dramatically as in the 1960s (*Table 4.9*). The attraction of non-university institutions is that programs are shorter (often one or two years compared with four at university), and generally skill-oriented. Students concentrate on the technical aspects of a specific trade or

profession, as opposed to the more theoretical course of studies normally followed in university.

Data on the distribution of bachelor and first professional degrees by field of study (*Chart 4.13*) indicate that in the 1970s there has been a major decrease in the share earned in general arts (which includes the humanities). As a specialty, education is on the decline, while medicine and the health professions seem robust, and interest in commerce and science is growing.

Women in Post-secondary Education

One of the most significant changes in Canadian education has been the increased post-secondary participation of women (*Table 4.11*). By 1976 women made up more than 45% of all full-time post-secondary students (an increase of 16% from 1971), and in the 1961-77 period women as a proportion of all graduate students almost doubled.⁴

Greater female participation has also been a major factor in the growth of part-time university enrolment. Between 1972 and 1977, for example, the number of women enrolled in part-time undergraduate programs increased 52% (compared with an increase of 23% for men), so that by 1977, women constituted 58% of all part-time undergraduates (compared with 53% in 1972). With respect to part-time enrolment in graduate studies, women represented 35% of this group in 1977, up from 26% in 1972.

A crude measure of the participation of women in post-secondary education is given by expressing all female enrolment as a percentage of the age group from which most enrolment has traditionally come. *Table 4.15* gives this calculation, and suggests that while female participation at university was beginning to level off in 1977, their attendance at community colleges and other institutions continued to grow.

With similar educational qualifications, females are earning between 80% and 90% of male salaries (*Table 4.18*). However, these data do not indicate if the males have been working longer, and therefore command higher wages because of their experience.

Second Language Education

During the 1970s support of second language education (that is, English in Quebec and French in other parts of the country) in elementary and secondary schools has been a key element in the federal government's attempts to promote bilingualism.

At the elementary level, between 1970 and 1977 the proportion of students outside Quebec receiving most of their instruction in French grew from 5.0% to 6.2%, while the proportion studying French as a second language rose from 28 to 40% (*Table 4.14*). Secondary students receiving most of their instruction in French increased slightly during the same period, but the proportion taking French as a second language dropped from 55% to 40%.

Data on English instruction in Quebec indicate only small changes between 1970 and 1977 — marginal gains in the proportion of both elementary and secondary students receiving most instruction in English, and decreases in the percentage taking English as a second language.

Some Benefits of Post-secondary Education to the Individual

In the week of May 28 to June 3 of 1978, Statistics Canada

surveyed Canadians who had graduated from post-secondary institutions in 1976. *Tables 4.16 to 4.19* present some of the main findings.

The possibility that many Canadians are deciding against university because job prospects for graduates do not appear promising has already been mentioned. This may be true for the months immediately after graduation, but evidence for later periods is less conclusive. For example, while 78% of 1976 university graduates had found full-time jobs in the month following graduation, the proportion had increased to 82% by the fall of 1977, and to 89% by June 1978. Initially, the corresponding figures for non-university graduates were lower — 73% just after graduation — but ultimately higher — 88% by the fall of 1977, and 90% by June 1978. It does not, of course, follow that the employment accepted by these respondents was directly related to their training.

This survey suggested that persons with higher qualifications are more apt to find employment in their field of specialization (*Table 4.19*). The jobs of over 94% of the graduates with doctorates who were employed full time were either directly or partly related to their education, compared with just under 80% for bachelor's degree-holders. The same pattern, although less pronounced, characterizes college graduates. The data also suggest that the likelihood of having a job increases marginally with the level of qualification. This, however, is not a universal pattern across fields of study; the opposite was true for university graduates in the humanities, and non-university graduates in mass communications.

The figures in *Tables 4.16* and *4.17* seem to confirm a favourable job outlook in some fields. Full-time employment rates for graduates of business and commerce, health professions, and engineering and applied science programs from both universities and colleges were considerably above those for graduates of general arts, humanities and fine arts.

Higher levels of qualification appear to have a considerable impact on income (*Table 4.18*). Median salaries of graduates with doctorates were 46% higher than those of bachelor's degree-holders, while recipients of three- or four-year college diplomas received 29% more than graduates of one-year programs.

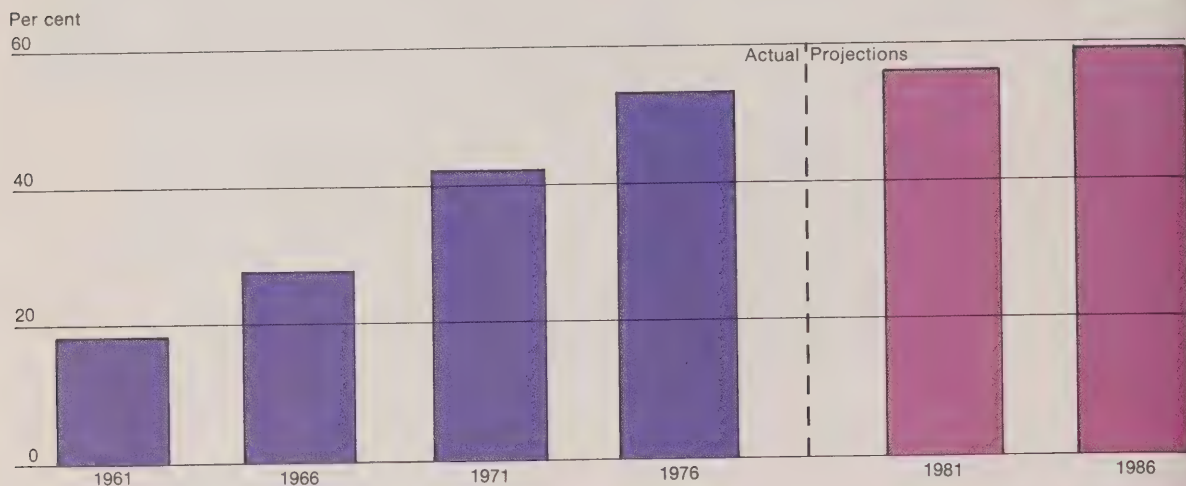
Continuing Education

A major trend in the 1970s has been the growth of continuing education programs (*Chart 4.21*), particularly non-credit, general interest courses offered at all levels. Whether continuing education will thrive or languish is something that cannot be foretold. Enrolment would rise if growing numbers of people demanded such programs for "general interest", or to augment their skills and technological understanding. Government and private industry do have programs designed to upgrade the education of specific groups, and community television education channels already exist in most major Canadian cities.

Level of Education of School Leavers

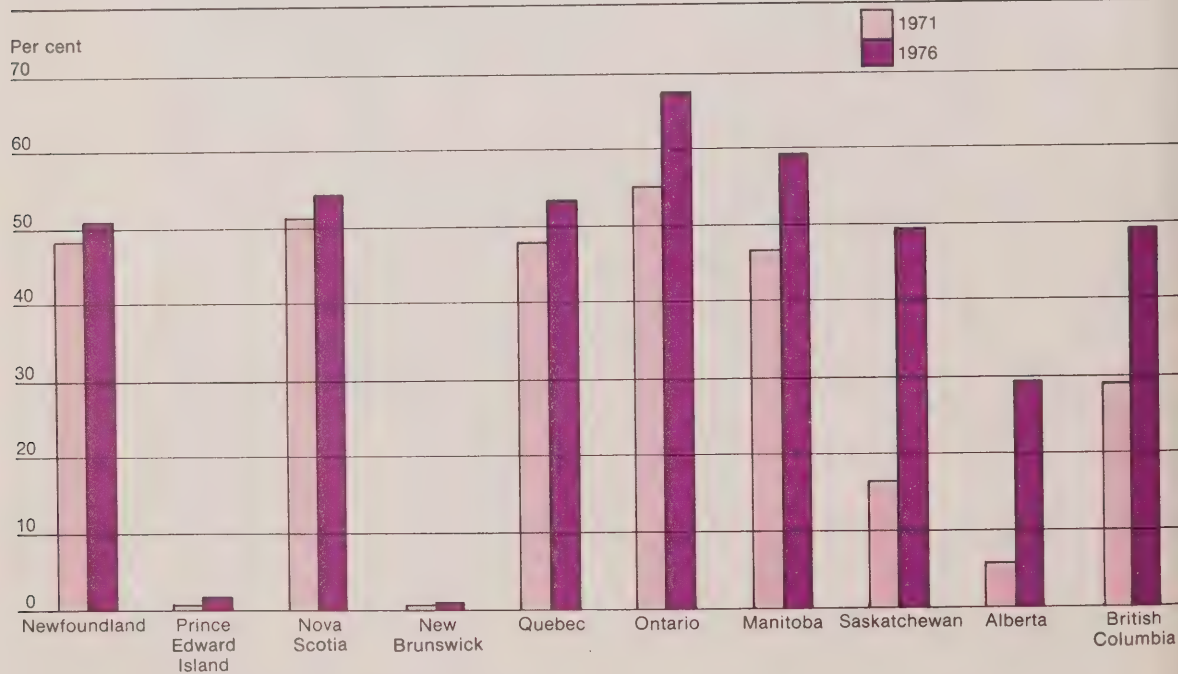
Table 4.21 represents the output of the education system at four times, including a projection for 1986. Since this table shows attainment for persons leaving full-time studies, it reflects the changing education levels of potential labour force entrants during the year cited. The proportion of school leavers with post-secondary experience rose from 18.6% in

CHART 4.2
Kindergarten enrolment as a proportion of the 4-5 age group



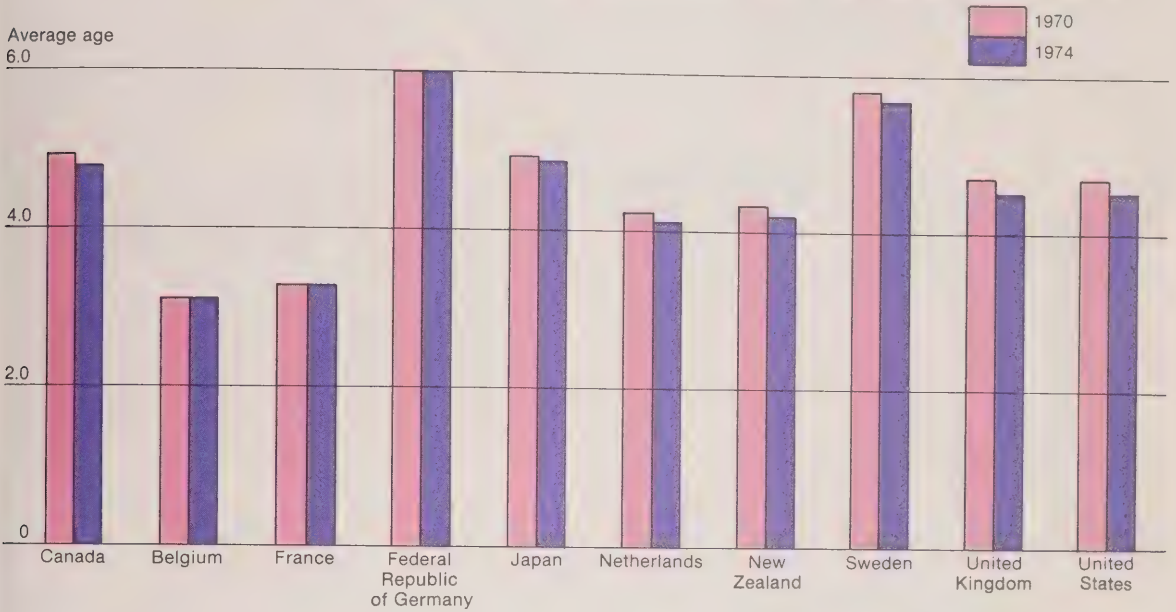
Source: *Historical Compendium of Education Statistics*, Catalogue 81-568, 1978; *Education in Canada, 1978*, Catalogue 81-229; and *Out of School - Into the Labour Force*, Catalogue 81-570, 1978.

CHART 4.3
Kindergarten enrolment as a proportion of the 4-5 age group,
by province, 1971 and 1976



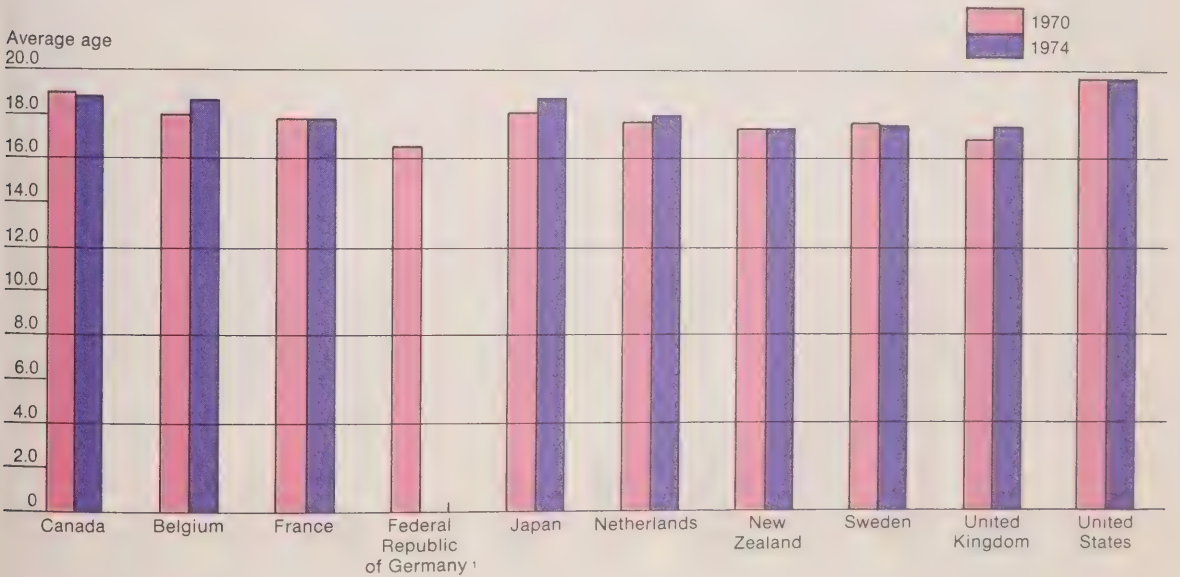
Source: *Historical Compendium of Education Statistics*, Catalogue 81-568, 1978; *Education in Canada, 1977*, Catalogue 81-229.

CHART 4.4
Average age of children entering the school system, selected industrial nations, 1970 and 1974



Source: *Educational Statistics in O.E.C.D. Member Countries*, O.E.C.D., Paris, 1977.

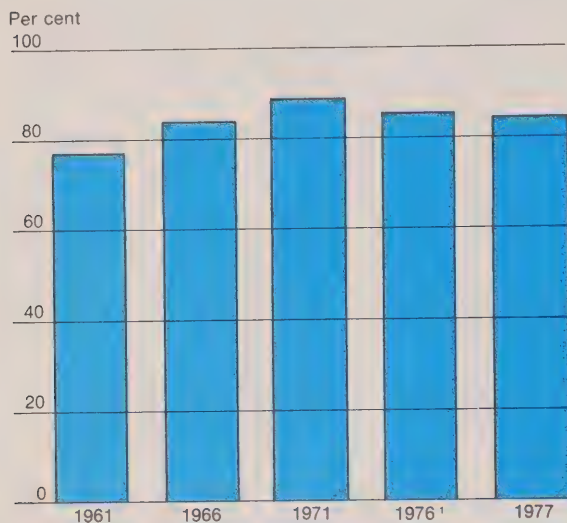
CHART 4.5
Average age of persons leaving the school system, selected industrial nations, 1970 and 1974



¹Figure for 1974 is not available.

Source: *Educational Statistics in O.E.C.D. Member Countries*, O.E.C.D., Paris, 1977.

CHART 4.6
Full-time enrolment of 14-17 year-olds at any level of education, as a proportion of the 14-17 age group, 1961 to 1977



¹The decline was partially caused by a structural change in Quebec's education system which eliminated one elementary-secondary grade thereby enabling many students to complete secondary school at age 16.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

TABLE 4.8
Part-time university enrolment as a percentage of total university enrolment, by level

Year	Undergraduate	Graduate	Total
		<i>per cent</i>	
1962	22.6	38.8	31.2
1966	26.1	33.9	26.9
1971	32.4	33.4	32.5
1976	32.7	40.5	33.7
1977	35.4	41.3	36.1

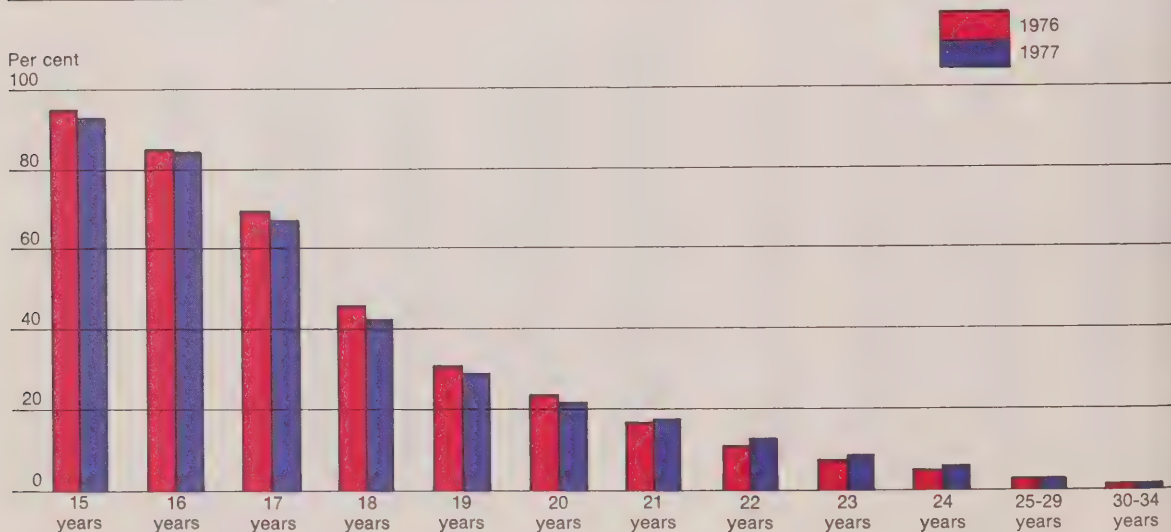
Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

TABLE 4.9
Full-time post-secondary enrolment as a proportion of the relevant age groups, by level

Year	Non-university (as % of population aged 18-21)	University		Total post-secondary (as % of population aged 18-24)
		Undergraduate (as % of population aged 18-21)	Graduate (as % of population aged 22-24)	
		<i>per cent</i>		
1951	3.2	7.0	0.6	6.0
1961	5.3	11.9	1.1	10.6
1966	5.9	15.6	2.4	14.2
1971	11.2	18.5	3.2	18.5
1976	12.6	18.6	3.3	19.8
1977	13.1	18.2	3.1	19.6

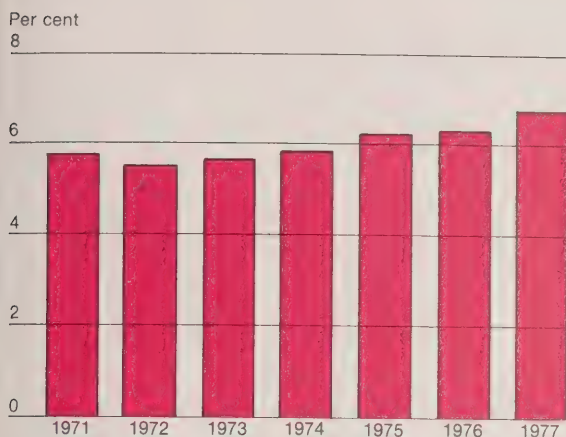
Source: *Historical Compendium of Education Statistics*, Catalogue 81-568, 1978; and *Education in Canada, 1978*, Catalogue 81-229.

CHART 4.7
Proportion of the population aged 15-34 enrolled in school full-time, 1976 and 1977



Source: *Out of School - Into the Labour Force*, Catalogue 81-570, 1978; and *Education in Canada, 1977*, Catalogue 81-229.

CHART 4.10
Part-time university enrolment as a percentage of the 18-24 age group



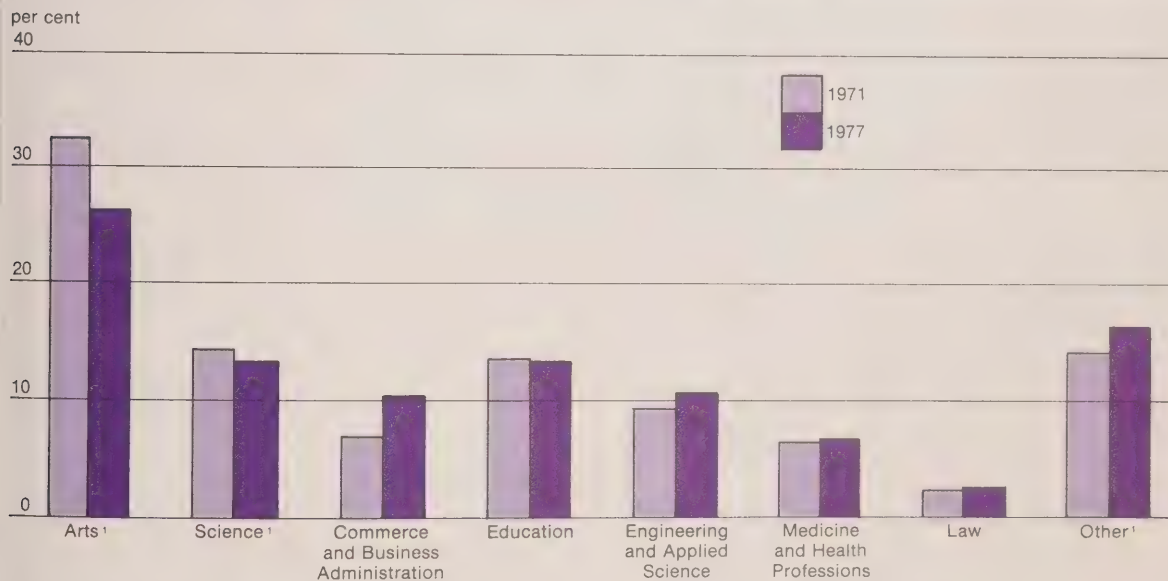
Source: *Education in Canada, 1977 and 1978*, Catalogue 81-229.

TABLE 4.11
Female enrolment as a percentage of full-time post-secondary enrolment, by level

Year	Non-university	University			Total post-secondary
		Undergraduate	Graduate	Sub-total	
		<i>per cent</i>			
1961	69.1	26.2	16.4	25.7	38.4
1966	55.3	33.7	18.0	32.4	38.3
1971	45.9	37.7	22.6	36.0	39.5
1976	49.8	43.7	30.6	42.3	45.1
1977	50.5	44.4	31.9	43.0	45.9

Source: *Compendium of Education Statistics*, Catalogue 81-568, 1978; *Education in Canada, 1978*, Catalogue 81-229; and *Out of School — Into the Labour Force*, Catalogue 81-570, 1978.

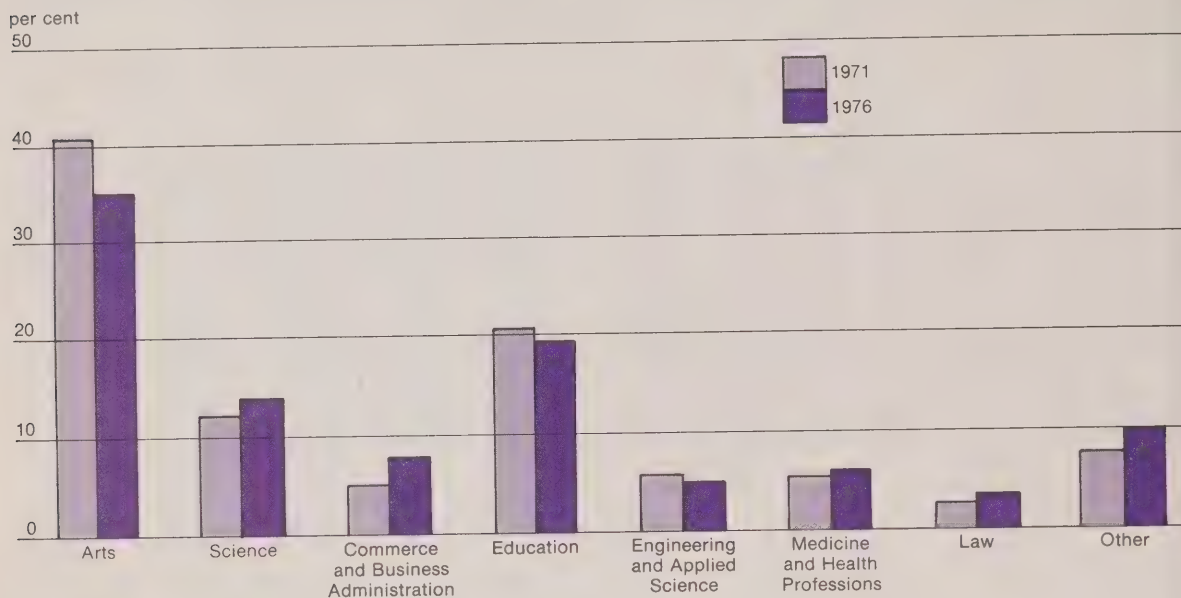
CHART 4.12
Percentage distribution of full-time university undergraduate enrolment, by field of study, 1971 and 1977



¹Students classified as "Arts or Science" have been included with "Other".

Source: *Education in Canada, 1977 and 1978*, Catalogue 81-229.

CHART 4.13
Percentage distribution of bachelor's and first professional degrees, by field of study, 1971 and 1976



Source: *Education in Canada, 1974 and 1978, Catalogue 81-229.*

TABLE 4.14
Minority language education in elementary and secondary schools, by province, 1970 and 1977

	Proportion of students taught primarily in French				Proportion of students taking French as a second language			
	Elementary		Secondary		Elementary		Secondary	
	1970	1977	1970	1977	1970	1977	1970	1977
	<i>per cent</i>				<i>per cent</i>			
Newfoundland	0.1	0.2	0.1	0.1	21.4	35.9	64.4	54.8
Prince Edward Island	2.9	5.1	2.2	3.3	21.2	55.3	83.0	65.3
Nova Scotia	3.8	3.3	2.9	2.8	10.4	29.9	70.0	64.3
New Brunswick	35.9	37.6	32.7	32.0	60.6	60.3	79.5	66.6
Ontario	5.9	7.5	4.5	4.9	37.5	53.9	48.9	36.2
Manitoba	4.4	5.0	3.9	3.9	29.6	38.4	54.5	41.1
Saskatchewan	0.4	1.2	0.2	0.4	5.2	4.5	68.9	46.4
Alberta	—	2.3	—	1.0	25.3	24.2	41.2	27.3
British Columbia	—	0.4	—	—	5.6	24.8	65.7	38.1
Total for provinces other than Quebec	5.0	6.2	4.2	4.4	28.4	42.0	55.8	40.2
	Elementary		Secondary		Elementary		Secondary	
	1970	1977	1970	1977	1970	1977	1970	1977
	<i>per cent</i>				<i>per cent</i>			
Quebec	15.9	16.0	15.3	15.8	41.2	37.0	100.0	98.0

Source: *Minority and Second Language Education, Elementary and Secondary Levels, 1977-78, Catalogue 81-257, 1978.*

TABLE 4.15
Full-time female post-secondary enrolment as a proportion of the relevant age groups, by level

Year	Non-university (% of female population 18-21)	University		Total post- secondary (% of female population 18-24)
		Under- graduate (% of female population 18-21)	Graduate (% of female population 22-24)	
		<i>per cent</i>		
1951	5.0	3.1	0.2	4.6
1961	7.3	6.3	0.3	8.2
1966	6.5	10.5	0.8	10.8
1971	10.3	14.0	1.4	14.6
1976	12.7	16.4	2.0	18.0
1977	13.4	16.4	2.0	18.2

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

TABLE 4.17
Full-time employment rate¹ of 1976 college graduates in the labour force in June 1978, by qualification level and field of study

	One-year diploma	Two-year diploma	Three- or four-year diploma	Total
Data processing and computer science	100.0	97.8	99.0	98.3
Applied sciences ²	—	96.9	94.5	96.2
Transportation	68.4	100.0	98.1	94.7
Engineering and related technologies	90.1	94.5	92.9	93.9
Business management and commerce	98.3	91.6	92.6	92.1
Secretarial arts and science	91.9	91.7	100.0	91.8
Primary industries	88.7	91.6	95.7	91.7
Mass communication	95.7	89.2	85.8	88.6
Community services, social welfare and household sciences	85.3	88.8	91.3	88.6
Medical and dental services	86.8	87.7	91.3	88.2
General arts, sciences, education and law	75.4	83.3	71.4	82.1
Fine, applied and performing arts	88.6	82.0	70.9	77.6
Total	88.8	90.1	90.3	90.0

¹ Number of graduates employed full time (including those who had accepted a full-time job to start in the future) divided by the number of graduates in the labour force.

² Ontario only.

Source: *Employment of 1976 University and College Graduates*, Education, Science and Culture Division, Statistics Canada, Ottawa, 1979.

TABLE 4.16
Full-time employment rate¹ of 1976 university graduates in the labour force in June 1978, by qualification level and field of study

	Bachelor's	Master's	Doctorate	Total
Business management and commerce	95.6	97.4	100.0	96.0
Health professions	95.5	91.9	100.0	95.4
Engineering and applied sciences	94.3	94.9	100.0	94.6
Education	90.1	94.8	93.6	90.6
Mathematics and physical sciences	89.0	87.0	92.4	88.9
Agricultural and biological sciences	87.6	88.2	88.9	87.6
Social sciences	87.0	86.3	94.5	87.1
Humanities	86.5	84.6	80.0	86.2
Fine and applied arts	70.7	66.2	100.0	70.6
General (no specialization)	87.8	86.1	98.1	87.9
Total	88.8	90.6	93.3	89.0

¹ Number of graduates employed full time (including those who had accepted a full-time job to start in the future) divided by the number of graduates in the labour force.

Source: *Employment of 1976 University and College Graduates*, Education, Science and Culture Division, Statistics Canada, Ottawa, 1979.

TABLE 4.18
Median salaries of 1976 university and college graduates working full time in June 1978, by sex¹ and qualification level

	Males	Females	Total
College graduates:			
One-year diploma	13,237	9,515	10,211
Two-year diploma	13,638	11,348	12,261
Three- or four- year diploma	13,758	12,463	13,129
University graduates:			
Bachelor's degree	15,393	14,152	14,813
Master's degree	21,772	17,456	20,420
Doctorate	21,742	19,875	21,565

¹ The female-male earnings gap is partially a reflection of different fields of specialization. Moreover, this tabulation does not control for years of experience.

Source: *Employment of 1976 University and College Graduates*, Education, Science and Culture Division, Statistics Canada, Ottawa, 1979.

TABLE 4.19
Reported relationship of current full-time job to
education of 1976 university and college graduates

	Related	Partly related	Not related	Total
	per cent			
College graduates:				
One-year diploma	66.6	18.7	14.7	100.0
Two-year diploma	67.3	22.0	10.7	100.0
Three- or four- year diploma	63.5	25.9	10.6	100.0
Total	66.5	22.4	11.1	100.0
University graduates:				
Bachelor's degree	41.3	38.3	20.4	100.0
Master's degree	47.5	44.5	8.0	100.0
Doctorate	55.0	39.4	5.6	100.0
Total	42.2	39.0	18.8	100.0

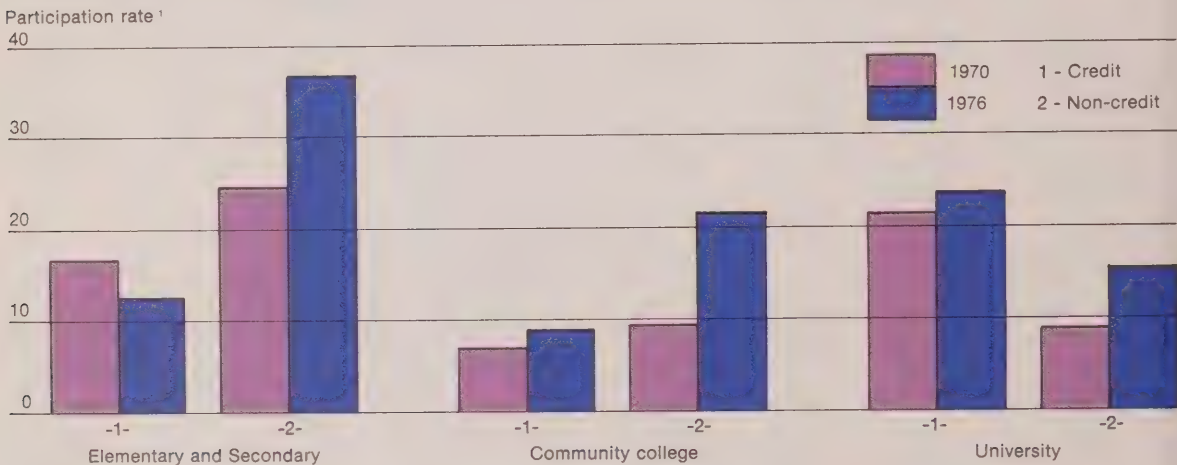
Source: *Employment of 1976 University and College Graduates*, Education, Science and Culture Division, Statistics Canada, Ottawa, 1979.

TABLE 4.20
Historical and projected educational attainment of
persons leaving full-time studies

	1966	1971	1976	1986
	per cent			pro- jected
Elementary and secondary:				
Some	52.6	51.0	43.5	39.5
Completed	28.8	20.0	20.7	18.5
Total, elementary and secondary	81.4	71.0	64.1	58.2
Post-secondary:				
Some	5.9	13.6	19.0	21.2
Certificate or diploma	5.8	6.4	6.8	8.1
Bachelor's or First Professional degree	6.0	7.6	8.7	10.7
Master's or graduate diploma	0.7	1.2	1.2	1.7
Earned doctorate	0.1	0.2	0.1	0.2
Total post-secondary	18.6	29.0	35.9	41.8
Total	100.0	100.0	100.0	100.0

Source: *Historical Compendium of Education Statistics*, Catalogue 81-568, 1978; and *Out of School — Into the Labour Force*, Catalogue 81-570, 1978.

CHART 4.21
Participation in continuing education courses, by type of course and type of institution, 1970 and 1976



¹Enrolment per 1,000 persons aged 15 and older not enrolled full time in an educational institution.

Source: *Continuing Education: Elementary and Secondary, 1976-77*, Catalogue 81-224; *Continuing Education: Universities, 1976-77*, Catalogue 81-225; and *Continuing Education: Community Colleges, 1976-77*, Catalogue 81-248.



Work

Tables, Charts and Maps

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Work

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In this chapter "work" refers to those activities that are carried out in the market for pay or profit and not the numerous productive non-market activities, such as household and volunteer work. The contribution of labour to the total economic market production can be measured by the wages, salaries and other benefits paid to workers. These form approximately 70% of the Canadian Gross National Product (the total unduplicated market value of all goods and services produced in a single year).

Individual decisions as to where one works or what one works at are determined by many factors, including the availability of jobs, the level of wages and other financial incentives, non-pecuniary factors such as the nature of the work and the working environment, the skills required, and individual preferences. The interaction of these factors has precipitated major changes in the Canadian work force.

In this chapter, the nature of Canadian working life and the basic trends therein are described from a statistical perspective using data gathered primarily from surveys of the labour force covering, for example, labour income, the number and characteristics of Canadians in the work force, and employment opportunities. The text describes changes in the labour force, the industrial distribution of employment, the situation with respect to unemployment, as well as the age and sex composition of those employed, and compares the situation in Canada with that existing in other countries.

Some of the more important technical terms used in the analysis are described below. The *labour force* is that portion of the civilian, non-institutional population, 15 years of age and over, that is employed or seeking work. The *employed* are those at work, or those who have a job but are not at work because of illness, disability, vacation, labour dispute or other reason. The *unemployed* are those without work but who are available and looking for work. The *participation rate* represents the labour force as a percentage of the population 15 years of age and over, and the *employment-population ratio* represents the employed as a percentage of the population 15 years of age and over.

Changes in the Labour Force between 1966 and 1977

The major changes in the labour force between 1966 and 1977 are summarized in Table 5.1. These aggregate figures, however, mask other developments in specific age and sex categories of the labour force.

The period 1966-77 was characterized by relatively large increases in the labour force activity of women, particularly those 25 years of age and over, and persons aged 15-24.

The increase in labour force participation on the part of women—30% for all women and 32% for women 25 years and over—compared to 7% for the total labour force, included large relative increases in both employed (Chart 5.4) and unemployed women (Table 5.5).

These changes partly reflect the shift in the industrial composition of the Canadian economy from manufacturing and primary industries to the service sector, which is more labour intensive and has traditionally been more open to

participation by women. The increasing education of women and the decline in family size are also factors in the increased female labour force participation.

The entrance into the labour force of large numbers of young people born during the baby boom, coupled with an increase in the participation rate of persons aged 15-24 (8% increase for males and 19% for females) has also had a dramatic impact on the shape of the Canadian labour force, particularly on the unemployed.

Between 1966 and 1977, the number of unemployed aged 15-24 years increased from 102,000 to 414,000, an increase which represents 51% of the increase in all unemployment in Canada between 1966 and 1977. At the same time the 15-24 year age group's share of total labour force growth was only 34%. The youth unemployment phenomenon is discussed in more detail below.

Labour force development in the provinces essentially paralleled that for Canada as a whole; participation and unemployment rates, for example, increased in all provinces between 1966 and 1977 (Tables 5.6-5.9). However, there were only minor changes in the provincial distribution of employment. Through the 12-year period, participation rates remained lowest and unemployment highest in the Atlantic provinces and Quebec, while the reverse remained true in Ontario and the western provinces. Unemployment in British Columbia, however, was consistently above the national average throughout the period. Note, though, that Alberta, Ontario and British Columbia did increase their shares of the total Canadian labour force and unemployment, while Manitoba, Saskatchewan, and especially Quebec, saw declines in these categories during the 1966-77 period.

Employment by Industry

Technological innovations, varying internal and external demand, and the discovery of new resources have all contributed to shifts in the industrial employment pattern (Table 5.12). Between 1951 and 1978 employment in all industrial sectors, except agriculture, forestry, and fishing and trapping showed an upward trend. Particularly high rates of employment growth occurred in the trade, finance, insurance and real estate, public administration, and the service industries, and this growth continued in the 1970s. Between 1971 and 1978 the service sector recorded the largest gain in employment, increasing by almost 700,000.

Searching for Jobs

In the period 1975-77 the most frequently used methods of searching for jobs were (in order of frequency) contacting employers directly, using public employment agencies, checking newspaper advertisements, and contacting friends and relatives, unions, and private employment agencies.¹ Little difference was found with respect to age, sex or province in the search methods used. Unfortunately, there are no data to indicate which of these methods produced the best results.

The Impact of Unemployment

It is difficult to measure the degree of hardship or deprivation encountered by those who are unemployed; however, a crude measure of the seriousness of unemployment can be

gained from looking at how long people remain out of work (**Table 5.13**). The average duration of unemployment for Canadians increased from 11 weeks in 1975 to 14 weeks in 1977, and the percentage of those unemployed for 14 weeks or longer climbed from 28% in 1975 to 37% in 1978. Single men and women stayed unemployed longer than their married counterparts, and those 25 years of age and over were unemployed longer than the younger age groups. Not surprisingly, periods of unemployment tended to last the longest in Quebec and the Atlantic provinces, while the unemployed in Alberta, Saskatchewan and Manitoba experienced the shortest periods of unemployment.

One factor affecting the increase in the duration of unemployment has been the decline in job vacancies (**Chart 5.17**). Between 1975 and 1978, the number of available full-time jobs declined by 30%.

Another indication of the effects of unemployment is provided by its relationship to family structure. For example, the number of families having at least one person unemployed increased from 553,000 in 1975 to 711,000 in 1978. In more than one third of these families, the head of the household was unemployed and approximately one quarter of these families had no one in the family working at all. The larger the family the less likely it was for the family not to have anyone employed, and the more children there were in the family, the less likely it was for the head of the household to be out of work.²

Education and the Labour Force

The economic value of education was acknowledged before the twentieth century by economists such as Adam Smith, H. Von Thunen, and Alfred Marshall; however, they provided no systematic analysis of the subject. As a result the extent of the contribution of education to society was never accurately assessed, and it was likely undervalued. About two decades ago, there was renewed interest in the role of education in the process of economic growth. Formal education was given an economic dimension by economists and theories were developed to explain its impact on the economy. Subsequent empirical investigation in the United States and Canada revealed that a qualitative improvement (better skills, greater efficiency, etc.) of the work force was responsible for a large proportion of the unprecedented economic growth after the Second World War. Better education of the workers was cited as the principal reason for the improvement in quality.

Greater educational attainment also has a significant impact on individual workers (**Table 5.11**). Regardless of age or sex, the participation rate and employment-population ratio increase with higher educational attainment levels.

The Unemployed Youth

In recent years, Canada, like many other industrialized nations, has had a surge of people into the labour market. Young people are more severely affected by insufficient job opportunities than any other group, and this has far-reaching social and economic consequences. Many countries, including Canada, have adopted or planned numerous measures to mitigate the problem including job creation in the private sector, community projects, the removal of barriers to entry of young people into working life, and the provision of training for the transition from school to work.

A brief review of the youth labour force development in Canada between 1966 and 1977 reveals the magnitude of the problem faced. The trend line of the number of persons aged 15-24 indicates that their share of the total labour force

has risen over the 12-year period. They made up approximately 24% of the labour force in 1966, compared to 27% in 1977 (**Chart 5.3**). In terms of actual numbers, the increase was more than 1,000,000 persons, divided equally between men and women.

Unemployment figures give an indication of the job situation encountered by young job seekers (**Table 5.5**). In 1966, persons 15-24 accounted for 40% of the unemployed. By 1977, their share reached 48%, even though they made up only 27% of the labour force. The share for men increased from 25% to 27%, and from 15% to 21% for women.

A New Indicator—The Employment-Population Ratio

Traditional labour market indicators, such as the unemployment rate and the participation rate, do not give a complete picture of the labour market. An additional indicator, the employment-population ratio (**Chart 5.10**), has been developed to provide a measure of the degree of employment in various demographic groups and in the economy as a whole. The employment-population ratio is simply the population that is actively engaged in the production of goods and services (i.e. the number of persons employed), expressed as a percentage of the total working-age population (i.e. the population aged 15 years and over), and provides an indication of the proportion of the working-age population whose chief source of income is from direct labour.³

Since 1966 the employment-population ratio for men 25 and over has declined from 82.5 to 77.0. This decline is often attributed to earlier retirements. However, employment-population ratios for men aged 25 to 54, and those 55 and over have both shown pronounced declines.⁴ It is possible to interpret the downward slope of the ratio line for men 55 and over as primarily early retirement effects, although evidence in job search studies suggests that this group is also subject to age discrimination in the job market, forcing some involuntary retirement.⁵ The continued decline in the ratio for men 25-54 is more difficult to explain and beyond the scope of this chapter.

While the employment-population ratio for males 25 and over declined throughout the period 1966 to 1977, the series for men aged 15-24 was much less constant. The proportion of this group with a chief source of income from direct labour declined between 1966 and April 1971, then increased steadily until mid-1974, before falling off again in the second half of the 1970s. This suggests that employment opportunities rose faster relative to the increase in the number of young males entering the labour force from 1971-74, but that the reverse was true in the later period.

The employment-population ratio for females aged 15-24 also declined in 1976-77 after demonstrating moderate growth from 1966-75. The increase in the employment-population ratio for women aged 25 and over since 1966 is the largest of any group. The strong, long-term, increasing trend is a reflection of the growth pattern in female participation rates.

International Comparisons

The comparison of labour force data (**Charts 5.14 and 5.15**) for selected western industrialized countries indicates that Canada experienced relatively large growth of both the total labour force and total employment. This has resulted primarily from the relative population growth in Canada (**Chart 1.2**) and from the rapid increase in labour force participation of women in Canada.

Compared to other countries, Canada has had relatively high unemployment rates, primarily because the impressive

rate of growth in employment has not kept pace with the growth rate of the labour force. The unemployment rate, therefore, has remained at relatively high levels, however, the increase in the Canadian unemployment has been exceeded by that of several other countries, including Italy, Australia, the United Kingdom, France, and the Federal Republic of Germany.

³The employment-population ratio, because it uses employment figures, has certain statistical advantages over traditional unemployment data. It is less complicated to identify employed persons in surveys, and employment data contain smaller sampling and non-sampling errors because of the much larger proportion of employed persons in labour force surveys.

⁴Historical Labour Force Statistics, *Catalogue 71-201, 1978*.

⁵Job Search Patterns in Canada, Special Labour Force Studies Series A, *Catalogue 71-525, by David E. Gower, Ottawa, 1975*.

Footnotes

¹Labour Force Annual Averages, 1975-1978, *Catalogue 71-529, 1978*.

²*Ibid.*

TABLE 5.1
Characteristics of the labour force, 1966-77

	Working age population	Labour force			Participation rate	Unemployment rate
		Employed	Unemployed	Total labour force		
		'000			per cent	
1966	13,084	7,242	252	7,494	57.3	3.4
1967	13,444	7,451	296	7,747	57.6	3.8
1968	13,805	7,593	358	7,951	57.6	4.5
1969	14,162	7,832	362	8,194	57.9	4.4
1970	14,528	7,919	476	8,396	57.8	5.7
1971	14,878	8,107	536	8,643	58.1	6.2
1972	15,227	8,363	555	8,918	58.6	6.2
1973	15,608	8,802	519	9,321	59.7	5.6
1974	16,039	9,185	519	9,704	60.5	5.3
1975	16,470	9,363	697	10,060	61.1	6.9
1976	16,873	9,572	736	10,308	61.1	7.1
1977	17,250	9,754	862	10,616	61.5	8.1
Percentage change 1966-77	+ 31.8	+ 34.7	+ 242.1	+ 41.7	+ 7.3	+ 141.5

Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978*.

CHART 5.2
Participation rates by age and sex, 1966-77

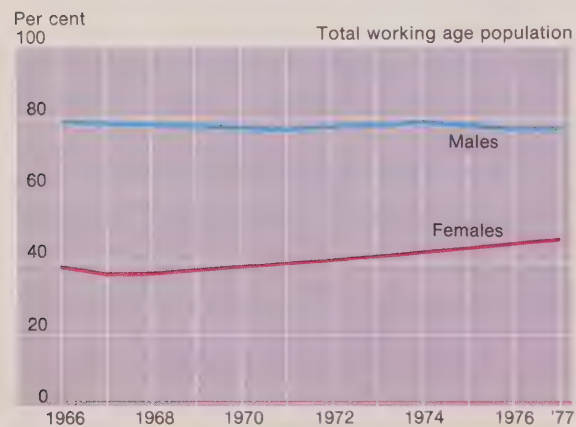
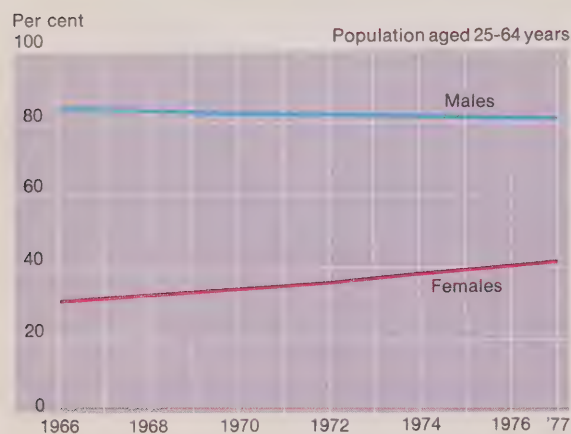
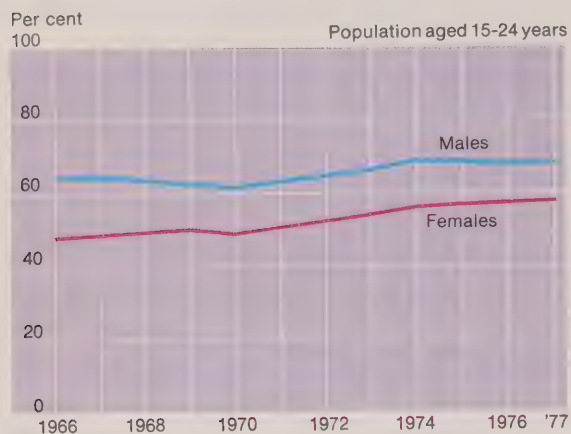
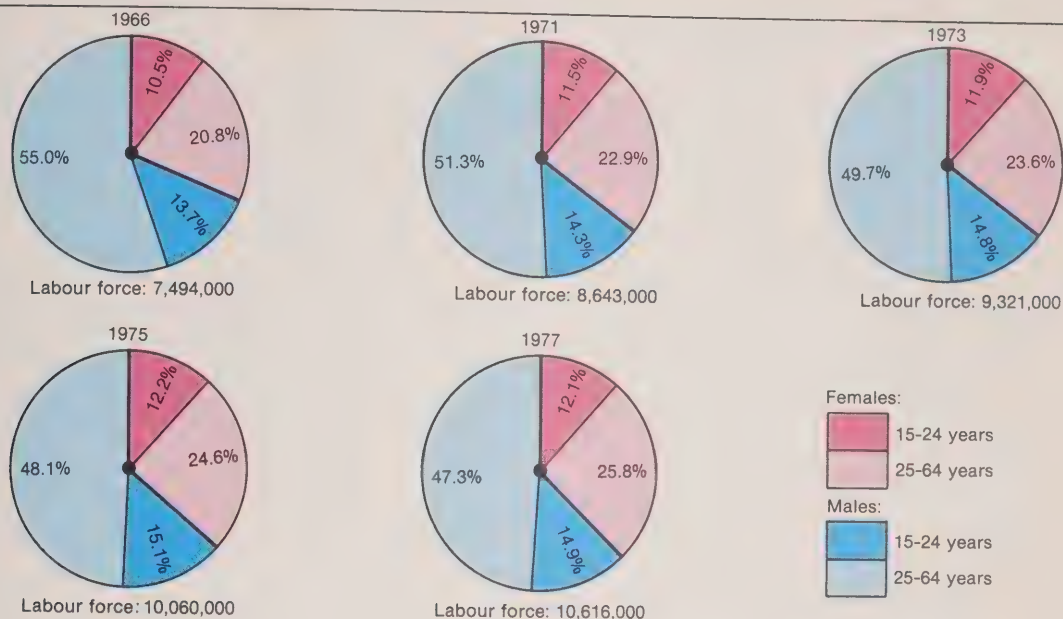
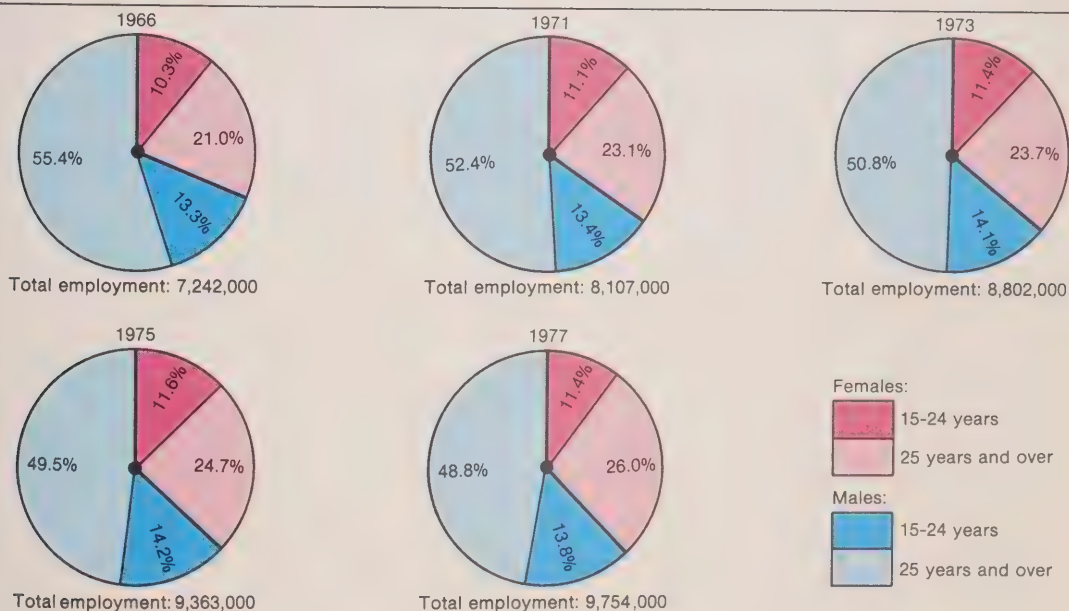


CHART 5.3
Age and sex composition of the labour force 1966-77



Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

CHART 5.4
Employment by age and sex, 1966-77



Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

TABLE 5.5
Unemployment by age and sex, 1966-77

		1966	1971	1973	1975	1977	
		<i>per cent</i>					
Proportion of all unemployed persons:							
15-24 years:	Males	25.4	27.8	26.8	27.3	27.4	
	Females	15.1	18.3	19.7	20.1	20.6	
	Total	40.5	46.1	46.4	47.5	48.0	
25 years and over:	Males	42.9	35.4	30.6	29.6	28.5	
	Females	16.7	18.5	22.9	23.0	23.4	
	Total	59.5	53.9	53.6	52.6	51.9	
Total		100.0	100.0	100.0	100.0	100.0	
Total number of unemployed		'000	252	536	519	697	862
Unemployment rate:							
		<i>per cent</i>					
15-24 years:	Males	6.2	12.1	10.1	12.6	14.9	
	Females	4.8	9.8	9.2	11.5	13.9	
	Total	5.6	11.1	9.7	12.1	14.5	
25 years and over:	Males	2.6	4.3	3.4	4.3	4.9	
	Females	2.7	5.0	5.4	6.5	7.4	
	Total	2.6	4.5	4.1	5.0	5.8	
All ages:	Males	3.3	6.0	4.9	6.2	7.3	
	Females	3.4	6.6	6.7	8.1	9.5	
	Total	3.4	6.2	5.6	6.9	8.1	

Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

TABLE 5.6
Participation rates by province, 1966-77

	1966	1971	1973	1975	1977
	<i>per cent</i>				
Newfoundland	44.9	45.3	49.3	49.2	50.6
Prince Edward Island	55.9	54.1	55.1	56.6	57.3
Nova Scotia	52.4	52.2	53.6	55.3	55.3
New Brunswick	51.3	49.8	52.7	53.8	53.8
Quebec	56.0	56.0	57.5	58.5	58.8
Ontario	59.8	60.9	62.4	64.2	64.4
Manitoba	57.4	59.3	60.6	60.8	61.6
Saskatchewan	54.0	55.3	57.2	59.1	61.4
Alberta	61.8	63.1	64.7	65.8	66.5
British Columbia	56.8	58.4	59.7	61.3	61.8
Canada	57.3	58.1	59.7	61.1	61.5

Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

TABLE 5.7
Proportion of the Canadian labour force in each province, 1966-77

	1966	1971	1973	1975	1977	
	<i>per cent</i>					
Newfoundland	1.7	1.7	1.8	1.8	1.8	
Prince Edward Island	0.5	0.5	0.5	0.5	0.5	
Nova Scotia	3.3	3.2	3.2	3.2	3.1	
New Brunswick	2.6	2.4	2.5	2.5	2.5	
Quebec	28.2	27.2	26.9	26.5	26.3	
Ontario	37.2	38.1	38.1	38.3	38.1	
Manitoba	4.8	4.7	4.5	4.4	4.3	
Saskatchewan	4.4	4.0	3.9	3.8	4.0	
Alberta	7.6	7.9	7.9	8.1	8.4	
British Columbia	9.6	10.4	10.7	11.0	11.0	
Canada	100.0	100.0	100.0	100.0	100.0	
Total number in the Canadian labour force	'000	7,494	8,643	9,321	10,060	10,616

Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

TABLE 5.8
Proportion of total Canadian employment in each province, 1966-77

	1966	1971	1973	1975	1977	
	<i>per cent</i>					
Newfoundland	1.7	1.7	1.7	1.6	1.7	
Prince Edward Island	0.5	0.5	0.5	0.5	0.5	
Nova Scotia	3.3	3.2	3.1	3.2	3.1	
New Brunswick	2.6	2.4	2.5	2.4	2.4	
Quebec	28.0	26.8	26.6	26.2	25.7	
Ontario	37.5	38.4	38.6	38.6	38.6	
Manitoba	4.8	4.7	4.6	4.5	4.4	
Saskatchewan	4.5	4.1	3.9	4.0	4.1	
Alberta	7.7	7.9	8.0	8.3	8.7	
British Columbia	9.4	10.3	10.5	10.8	10.9	
Canada	100.0	100.0	100.0	100.0	100.0	
Total number of employed in Canada	'000	7,242	8,107	8,802	9,363	9,754

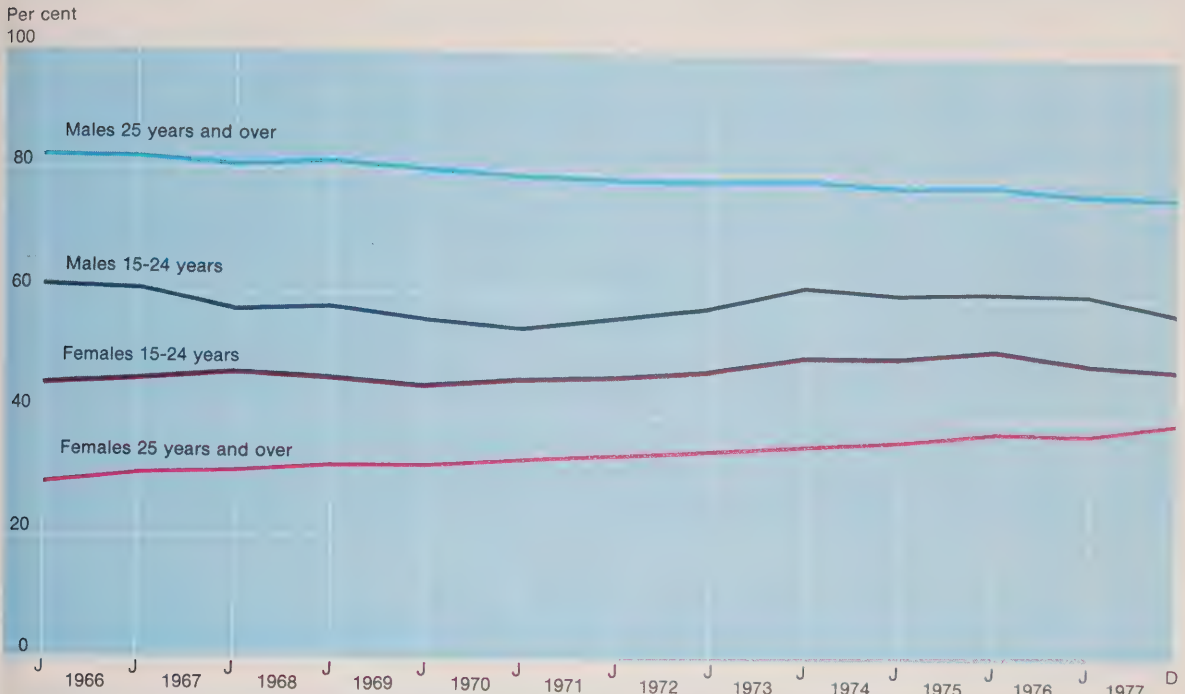
Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

TABLE 5.9
Provincial unemployment rates, 1966-77

	1966	1971	1973	1975	1977
Newfoundland	6.1	8.8	10.6	14.2	15.9
Prince Edward Island	...	...	...	8.2	10.0
Nova Scotia	4.8	6.9	6.8	7.8	10.7
New Brunswick	5.1	6.2	7.7	9.9	13.4
Quebec	4.1	7.3	6.8	8.1	10.3
Ontario	2.6	5.4	4.3	6.3	7.0
Manitoba	2.8	5.7	4.7	4.5	5.9
Saskatchewan	1.5	3.5	3.6	2.9	4.5
Alberta	2.6	5.7	5.3	4.1	4.4
British Columbia	4.6	7.2	6.7	8.5	8.5
Canada	3.4	6.2	5.6	6.9	8.1

Source: *Historical Labour Force Statistics, Catalogue 71-201, 1978.*

CHART 5.10
Employment-population ratio¹ by age and sex, 1966-77²



¹The employment-population ratio represents the proportion of the working age population (population aged 15 years and over) which is actually employed.

²Data are seasonally adjusted.

Source: *Historical Labour Force Statistics*, Catalogue 71-201, 1978.

TABLE 5.11
Participation rate, unemployment rate, and employment-population ratio by educational attainment, age and sex, 1978

	Educational attainment					Total
	Less than high school	High school	Some post-secondary	Post-secondary certificate or diploma	University degree	
Participation rate:	<i>per cent</i>					
Males	63.7	80.3	80.1	89.4	91.0	77.9
Females	25.9	50.7	59.5	61.3	71.3	47.8
Persons 15-24 years	47.5	63.7	64.5	80.6	80.5	64.4
Persons 25 years and over	44.7	65.1	74.1	71.7	84.0	62.0
Canada	44.9	64.6	70.3	73.5	83.6	62.6
Unemployment rate:						
Males	9.0	8.7	7.1	4.6	2.9	7.6
Females	11.2	10.6	9.1	7.2	5.8	9.6
Persons 15-24 years	24.1	15.4	11.5	9.1	8.6	14.5
Persons 25 years and over	8.2	6.3	5.8	4.9	3.3	6.1
Canada	9.6	9.5	7.9	5.9	3.8	8.4
Employment-population ratio:						
Males	58.0	73.3	74.4	85.3	88.4	72.1
Females	23.0	45.3	54.1	56.9	67.2	43.2
Persons 15-24 years	36.1	53.9	57.1	73.2	73.6	55.0
Persons 25 years and over	41.0	61.1	69.8	68.2	81.2	58.2
Canada	40.6	58.5	64.8	69.2	80.4	57.4

Source: *The Labour Force Annual Averages, 1975-1978*, Catalogue 71-529.

TABLE 5.12
Employment by industry, 1951-78

	1951	1961	1971	1975 ¹	1978 ¹
	<i>per cent</i>				
Agriculture	18.4	11.2	6.3	5.2	4.7
Forestry	2.3	1.4	0.9	0.6	0.8
Fishing and trapping	0.6	0.3	0.3	0.2	0.2
Mining	1.5	1.3	1.6	1.5	1.6
Manufacturing	26.5	24.0	22.2	20.2	19.6
Construction	6.8	6.2	6.1	6.5	6.3
Transportation, communications and other utilities	8.8	9.3	8.7	8.7	8.6
Trade	14.1	16.9	16.5	17.6	17.4
Finance, insurance and real estate	3.0	3.9	4.8	5.1	5.5
Service	18.0	19.5	26.2	27.1	28.2
Public administration	..	5.9	6.4	7.2	7.1
Total	100.0	100.0	100.0	100.0	100.0
Total number employed in Canada '000	5,097	6,055	8,078	9,284	9,972

¹ The 1975 and 1978 data are revised annual averages necessitated by the changeover to the 1976 *Census of Canada* as the base for labour force population projections. As a result the total here for employed in 1975 differs slightly from other exhibits in this chapter.

Source: Labour Division, Statistics Canada, unpublished data; *Labour Force Annual Averages, 1975-1978*, Catalogue 71-529.

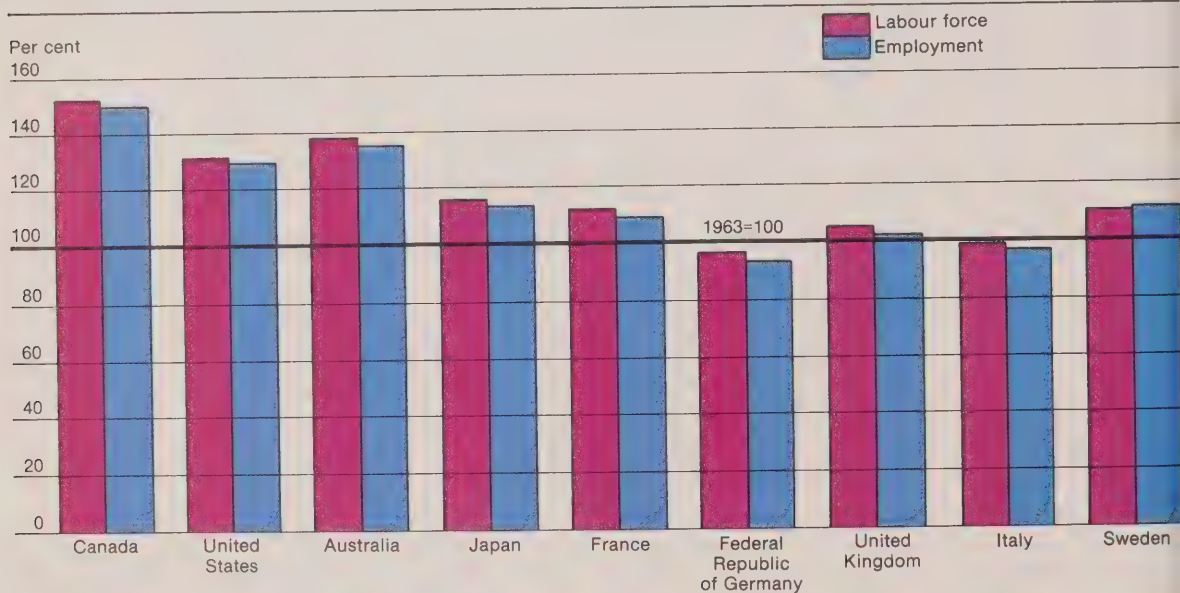
TABLE 5.13
Duration of unemployment by age, sex and marital status, 1978

	Duration of unemployment				Total
	4 weeks or less	5-13 weeks	14 weeks and over	Other ¹	
	<i>per cent</i>				
Males:					
15-24 years	32.1	32.5	32.5	2.9	100.0
25 years and over	25.0	29.6	41.7	3.8	100.0
Females:					
15-24 years	33.7	30.4	32.6	3.3	100.0
25 years and over	28.1	27.7	41.1	3.1	100.0
Marital status:					
Married	27.7	29.3	39.1	3.9	100.0
Single	31.6	31.1	34.2	3.0	100.0
Other	25.9	29.3	44.8	—	100.0
All unemployed	29.3	30.0	37.3	3.4	100.0

¹ Includes persons with a job to start within four weeks of the reference week who had not actively looked for work in the previous four weeks but who were available for work in the reference week.

Source: *Labour Force Annual Averages, 1975-1978*, Catalogue 71-529.

CHART 5.14
Labour force and employment indices¹ for selected industrial nations, 1976

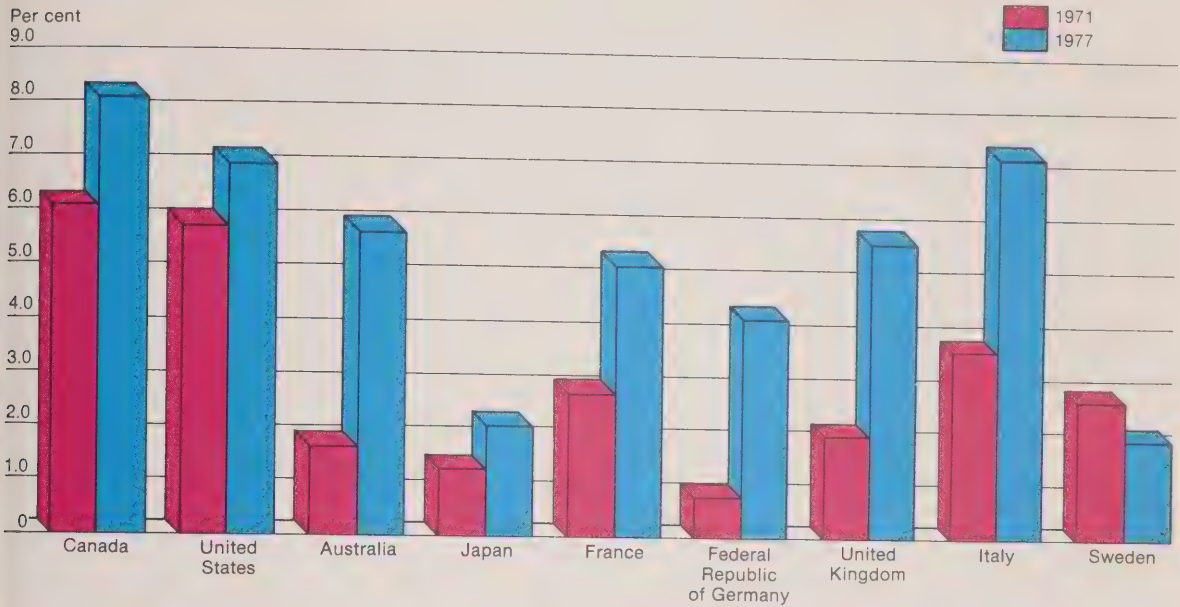


¹Indices calculated using 1963 data as the base, i.e.,

$$\frac{1976 \text{ data}}{1963 \text{ data}} \times 100 = \text{index.}$$

Source: *Labour Force Statistics 1965-1976*, OECD, Paris, 1978.

CHART 5.15
Unemployment rates for selected industrial nations, 1971 and 1977



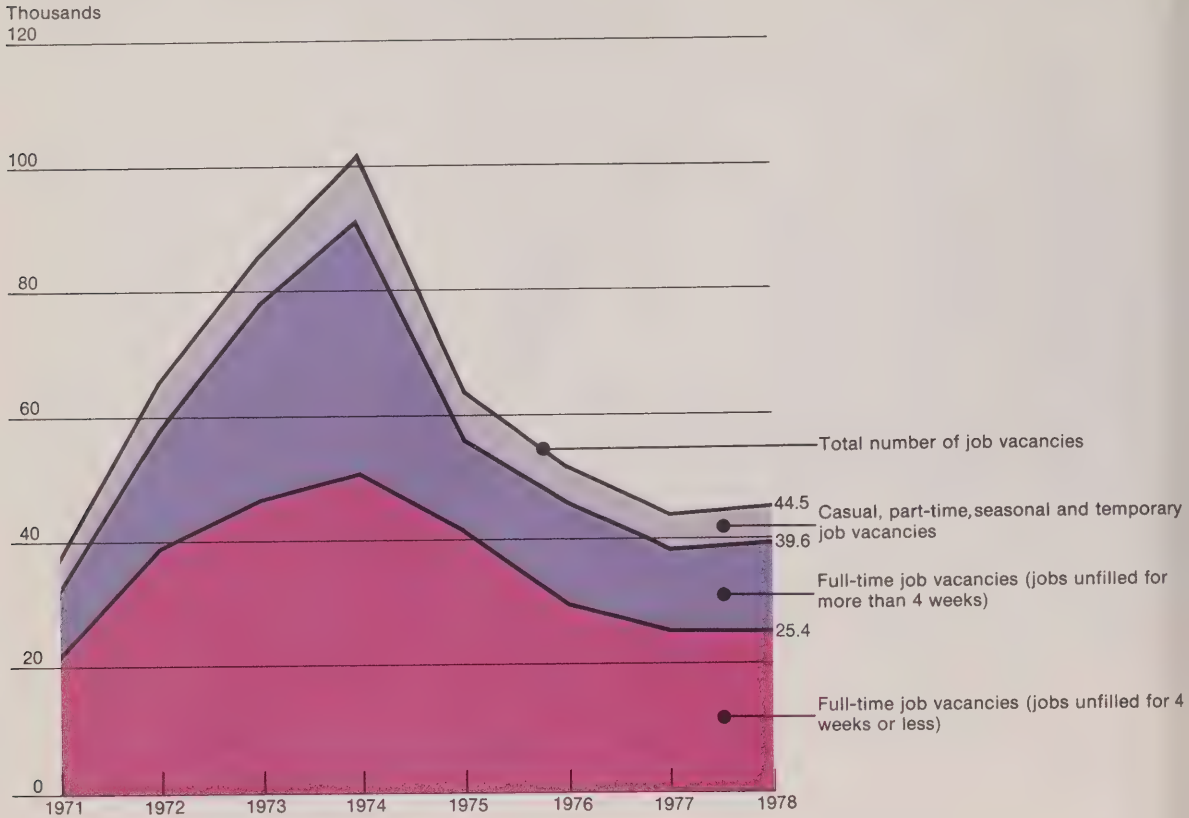
Source: *Labour Force Statistics, Quarterly Supplement to the Yearbook*, OECD, Paris, 1978.

TABLE 5.16
Hours worked per week, 1975-78

	1975	1976	1977	1978
			<i>per cent</i>	
0 hours	7.4	7.2	7.0	7.0
1-29 hours	14.2	15.7	15.9	15.4
30-39 hours	22.9	25.5	25.4	23.6
40 hours	31.7	29.7	29.9	31.6
41-49 hours	10.7	9.7	9.5	9.6
50 hours and over	13.1	12.3	12.3	12.7
Total	100.0	100.0	100.0	100.0
Total number of workers in Canada				
'000	9,284	9,479	9,648	9,972

Source: *Labour Force Annual Averages, 1975-1978*, Catalogue 71-529.

CHART 5.17
Job vacancies, 1971-78



Source: Annual Report on Job Vacancies, Catalogue 71-203, 1978.

TABLE 5.18
Flows into unemployment, 1975-78

	1975	1976	1977	1978
	<i>per cent</i>			
Proportion of unemployed persons who were:				
Job losers	39.5	45.0	48.6	48.5
Job leavers	27.9	24.5	22.9	23.0
New labour force entrants	5.8	5.6	5.6	5.8
Labour force re-entrants				
1 year or less away	18.6	16.4	14.0	13.5
More than 1 year away	8.1	8.5	8.8	9.2
Total	100.0	100.0	100.0	100.0

Source: Labour Force Annual Averages, 1975-1978, Catalogue 71-529.

TABLE 5.19
Workers in unions by industry, 1971-76

	1971	1972	1973	1974	1975	1976
	<i>percentage of workers in unions</i>					
Fishing and trapping	20.5	93.1	85.5	43.3	86.1	73.5
Public administration	64.0	61.2	68.9	70.4	67.4	67.4
Construction	50.5	65.8	63.5	62.9	58.7	52.1
Transportation, communications and other utilities	52.2	51.1	52.5	49.5	49.8	50.0
Manufacturing	41.7	43.5	43.8	43.8	45.4	43.5
Forestry	30.9	36.6	37.7	45.0	34.5	42.0
Mining	35.6	37.6	44.2	44.6	38.7	39.7
Service	21.8	21.3	21.6	22.1	21.1	22.6
Trade	8.4	7.3	7.0	7.6	7.8	8.5
Finance	0.8	1.2	1.3	1.8	2.7	2.7
Agriculture	0.3	0.3	0.4	0.6	0.3	0.3

Source: Corporations and Labour Unions Returns Act — Part II, Labour Unions, Catalogue 71-202, 1971-76.

CHART 5.20
Time lost from strikes and lockouts, 1961-78



¹Man-days lost as a percentage of estimated total working time of the labour force.

²1978 figure is a preliminary figure covering January to June 1978.

Source: Labour Canada, *Labour Gazette*, Vols. LII, LXV, LXVIII, LXIII(2), LXXVI(5), and LXVIII(12).



Income and Consumption

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Income and Consumption

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Income

Money isn't everything, but for most Canadians it's what might be called "essential". Income and wealth not only give individuals command over goods and services but convey social and economic status. Loss of income or wealth — or the prospect of future change — can alter the sense of well-being of individuals and, collectively, the welfare of the nation. The level of income and wealth in a country and the way it is distributed among individuals and families, across regions, between the sexes, and among occupations are issues which have occupied people and government for a long time. The discussion in this chapter deals with income only; wealth considerations have been omitted because of the unavailability of recent data on wealth. Certain aspects of wealth, particularly those associated with the ownership of bonds, stocks and some forms of property are, of course, reflected in the income streams these possessions generate as investments.

What is Income?

In the broadest sense, everybody has income in one form or another. Thus, even completely dependent elderly persons, invalids or children have incomes in that they are fed, clothed, housed and otherwise provided for. This universality of income makes it necessary to define income carefully. Because of difficulties of definition and collection, most data on income, including those presented in this chapter, restrict themselves to money income. However, some attempt has also been made to approximate real income, that is a picture of income over time from which price changes have been eliminated. A measurement of the level of real income and its distribution is, however, only an approximation because of conceptual and methodological qualifications that make it impossible to get exact measurements.

Some countries use household surveys or censuses to obtain data on distribution of income by size. Canada is one of the few countries that has maintained a regular survey program directed specifically to measuring incomes. Since 1951, Surveys of Consumer Finances have produced comprehensive and conceptually consistent income distribution data for selected years.

Even after the concept of money income has been defined as carefully as possible, further conceptual issues remain. For instance, the distributions of income before taxes are not ideal measures of the distribution of purchasing power among the population. Our taxation system (known as a progressive tax system) increases the rate of taxation as income climbs; thus, pre-tax money income distributions overstate the degree of inequality. Moreover, money income is a restrictive concept in that it does not count income in kind, such as home-produced food and fuel, the rental value of owner-occupied homes, meals and free accommodation received in lieu of wages, as well as capital gains, gifts, lump-sum settlements from insurance policies, and income tax or retirement plan refunds.¹ Income distribution after income tax, along with the distribution of transfer payments

received and income tax paid by income class are, therefore, also included in this chapter in order to show the net effects on the distribution of personal income of transfers of money to and from the government. These data should be of particular interest in light of the Canadian progressive income tax system and the increasing importance of government transfer payments as components of income. Total income in these estimates is different from taxable income used by National Revenue and from personal income found in the National Accounts. The National Revenue definition is governed by the tax regulations prevailing at any given time, while the National Accounts include some of the previously mentioned items of income in kind.

The income tables in this chapter are for all income recipients and for nearly all family units. For analysis with welfare implications, the family series may be the most useful; it groups all related individuals living in the same household and, as such, closely approximates a consumer decision-making unit — a group of individuals dependent on a common or pooled income for major items of expenditure. Persons living alone, or in households where they are unrelated to anybody else, form a separate statistical unit, and in some of the following tables, data for these unattached individuals are shown separately.

The Distribution of Income

The usefulness of income distribution data depends, among other things, on how well the original information is summarized and presented. In this chapter, various presentations of income distribution data have been employed for different purposes and comparisons, and each form must be considered in the context of its intended purpose.

Ideally, we would like to be able to examine all individuals as to their place in the income distribution. This is not possible, so methods of summarizing the data have been developed to make the comprehension of the overall distribution of income easier. The most common method is the percentage distribution of the population by income classes or groups (*Table 6.1* and *Chart 6.2*) which show the proportion of the population in each class or group.

It is evident from these tables that the proportion of families and unattached individuals in the lowest income group has steadily declined since 1965, while membership in the highest group has steadily risen. This is only partially the result of inflationary factors, as a similar, but more moderate movement occurs in the constant dollar data as well.

Often, averages such as the arithmetic mean and the median² (*Tables 6.3* and *6.13*, and *Charts 6.2*, *6.4* and *6.5*) are useful in examining the distribution of income. These averages also bear out the upward shift in personal incomes — both in current and constant dollars. Average current dollar income rose by 157% from 1967 to 1977, while the same increase in real terms was 38%.³

These changes in levels of overall income make comparisons over time difficult since the income groups defined by the size of their current or constant dollar income are in different time periods. Thus, for example, the income group of under \$1,000 will contain a greater proportion of all income units in 1950 than in 1977. Presenting income distribution

data in quintile format (*Table 6.3*), which groups the population into five equal groups ranked by income, avoids this difficulty. Therefore, over time, the data always deal with the lowest, second, third, fourth and highest (fifth) income group of the population. When the income distribution is viewed historically from this perspective, there is little change in the shares of total income going to the quintiles. For instance, the lowest quintile has received, since the post-war years, about 4% of total income, while the highest quintile receives 10 times that proportion.

There is a fair degree of variation in the income distributions in the provinces (*Table 6.6*). Ontario and Alberta have the largest concentration of families and unattached individuals with high incomes; in both provinces about a quarter of families and unattached individuals received \$25,000 or more in 1977. However, when the two top income groups are combined to give a single group with income of \$15,000 or more, more than half the families in Ontario, Alberta and British Columbia fall into this group. The 1977 income distribution by the age of the head of the household (*Chart 6.5*), reveals, not unexpectedly, that the highest proportion of those families with an income of \$25,000 or more occurs where the head is between 45 and 54 years old. Families making an annual income of \$4,000 or less in 1977 are concentrated, on the other hand, in the youngest (age of head 24 years or less) and highest (65 years and over) age groups.

Tables 6.6 - 6.9 show some of the characteristics of low-income families.⁴ The incidence of this group is fairly uniform across all provinces of Canada, with Newfoundland having the largest proportion of low-income families and Ontario and Alberta the lowest. When examined in the light of other characteristics such as age and work patterns, the distributions of low incomes for families and unattached individuals seem to follow conventional wisdom. Thus, the incidence of low-income families decreases as the number of weeks worked by the head increases. It is lowest among those having a head who is employed, higher where the head is self-employed, and greatest for those where the head is not in the labour force. As might be expected, it also varies inversely with the education of the head. The majority of the heads with higher incomes are employees, while the majority of heads with low incomes are not in the labour force. Salaries and wages are the largest component of income for those with higher incomes while transfer payments provide most of the monetary support for those in the low-income group.

Transfer payments have been included in money income, and the income figures are pre-tax figures, for the data discussed to this point. Table 6.10 reflects at least in part, both transfer payments and taxes payable. It shows the proportion of monetary totals, such as money income before transfer payments, and money income after taxes going to various family income groups.

While most income distribution data are restricted to monetary income, in 1974 Statistics Canada undertook for the first time a study on the distribution of "free" government services among various income groups.⁵ Tables 6.11 and 6.12 show the proportion of health and education benefits flowing to various income groups. One of the major conclusions of this study is that these transfers have an equalizing effect on income distribution. The other major conclusions of this study include low-income families and unattached individuals receive more than their share of benefits; the benefits received depend primarily on family

size; health benefits are distributed more widely than educational benefits (less than 13% of family units report no utilization of health benefits while less than half of all family units reported one or more members attending primary or secondary schools or a post-secondary institution); the utilization of health services is strongly related to the personal characteristics of the user (the elderly are the heaviest users of medical consultation and hospital services); and there appears to be a strong positive correlation between the size of parental income and children's attendance at university and other post-secondary institutions.

Comparison of Canada and the United States

The concepts and methodology behind the collection of income data vary between countries, and this usually renders international comparisons very difficult. However, these problems are not as serious for Canadian and American data. Although concepts and definitions are similar, care should still be taken in analyzing these data because of differing institutional, cultural, economic and tax situations in the two countries. It should also be noted that because of exchange variations, American and Canadian dollars are not always comparable.

In 1975 and 1977 median income in Canada exceeded that of the United States (*Table 6.13*). While this is an interesting piece of information, it is difficult to interpret because of the unavailability of adequate comparisons on the purchasing power of that income.

There is a fair degree of similarity in the two countries in the distribution of major consumer durables, such as televisions and washing machines, among similar income groups (*Table 6.14*), although for most items, ownership is somewhat higher in the United States. It is also interesting to note that in both Canada and the United States the distribution of television sets is fairly even among all income groups, with the widest discrepancy among income groups being encountered in the ownership of dishwashers.

Consumption

This portion of the chapter is concerned mainly with how income is spent. Generally, personal consumption, both technically and in everyday conversation, refers to those goods and services which are paid for by families and/or individuals. The total consumption of the population, however, is much larger than this personally-financed portion. Many goods and services are provided by governments or other institutions without a direct exchange of money between those who provide the goods and services and those who use them.

The state provides collectively financed and collectively consumed goods; for example, national defence, services such as police protection and the administration of courts, and such transportation facilities as roads and airports. There is, in addition, a whole range of individually consumed goods and services, including education and hospitals and other health services, which are partially or totally financed by government. Although government expenditure as a percentage of Gross National Product rose slightly between 1971 and 1976, the difference between collectively consumed and individually consumed goods, financed by these expenditures, remained fairly steady.

There are goods and services which are produced in households, and by volunteer and benevolent organizations, which do not flow through the market. Because of this, their value is hard to establish, and the consumption of these goods and services by households has not been included in

the data of this chapter. Statistics Canada has, however, made an attempt to measure the value of the work produced in households — in 1971, the value of housework, for instance, was estimated to be between 34% and 41% of the value of the Gross National Product. There also now exists a partial estimate of the value of volunteer work.⁶

Expenditures

The following section examines the items on which families with different incomes spend their money and how the prices of broad groups of goods and services have changed (*Chart 6.15* and *Table 6.16*).⁷

There is little discernible change over time in the pattern of expenditure on such items as fuel, shelter, clothing, and most of the goods and services within each income group. Naturally, as the income scale increases there is lower proportional spending on such necessities as fuel and shelter, while the proportion of income paid out as taxes and on security rises.

In general, despite rising incomes and a somewhat greater proportion of full-time employed wives, the way in which families spend their money has not changed significantly between 1969 and 1976. While the average amount of money spent on home-prepared foods in 1976 increases from the lowest to the highest income group, the pattern in which this money is spent again shows little variation, at least in terms of which products are purchased, but it may hide certain differences in quality. Of the money spent for food and drink, the proportion spent in restaurants increases from 14% to 34% between the lowest and the highest income groups.

Final expenditure on all Canadian goods and services by all Canadians, including those made by governments, business and exporters, are shown in *Table 6.17*. Since only expenditures on Canadian goods and services are involved, that portion of goods and services which has been imported and sold or incorporated into a Canadian product is deducted as an overall adjustment to these figures.⁸ While total personal expenditure on consumer goods and services is included in the above Gross National Expenditure figure, it is shown in more detail and on the basis of per-person expenditure in the next table. It is hoped that this latter figure relates better to the ordinary perception of personal expenditure (even though it is expressed in constant dollars) than a concept involving \$80 billion. Attention is also drawn to the distinction which must be made between this figure of personal expenditure on consumer goods and services and family expenditures as described previously.

The economic growth which generated the increase in personal income is also reflected in these data, and both Gross National Expenditure and personal expenditure more than doubled between 1961 and 1978. Since population also increased, per-person expenditure did not expand as much as total personal expenditures.

Definitions

Notes on Income

Most of the estimates presented in this chapter are based on information collected from samples of Canadian households in the Survey of Consumer Finances. The concepts, definitions, and methods used in preparing these estimates have remained largely unchanged over the period covered here, although the frequency of the surveys has varied (since 1971 they have been conducted annually). The samples were selected by multi-stage probability sampling, within the

framework of the Canadian Labour Force Sample. The estimates exclude families and unattached individuals whose major source of income was military pay and allowances. Inmates of institutions, persons residing on Indian reservations, residents of the Yukon and Northwest Territories, and Canadians temporarily abroad are also excluded.

Some terms in this chapter are used in a restricted sense:

Family: A group of individuals sharing a common dwelling unit and related by blood, marriage, or adoption. (The definition of family employed by the population census restricts the family to husband, wife, and any unmarried children living with them, or one parent and unmarried children.)

Unattached individual: A person living by himself or in a household where he is not related to other household members.

Unit: The collective name given to unattached individuals and families with two or more members. Table headings always specify whether families only, or families and unattached individuals are included.

Total income: The total income of a unit consists of wages and salaries, net income from self-employment, investment income, government transfer payments, miscellaneous income (retirement pensions, annuities, scholarships, alimony, and other items not specified above). The income concept used in the surveys and the censuses approximates the monetary income received by private households as measured in the personal income series in the National Accounts.

Low income: Low income was delineated by using the revised low-income cutoffs. These lines were determined from an analysis of 1969 family expenditure data; families who on average spent 62% or more of their income on food, shelter and clothing were considered to be in straitened circumstances. These limits were differentiated by size of area of residence and family size.⁹ For example, some selected 1977 low-income cutoffs are:

Size of family unit	Size of area of residence		
	500,000 and over	30,000- 99,999	Rural
1 person	4,446	4,041	3,231
2 persons	6,443	5,859	4,688
3 persons	8,221	7,473	5,980
4 persons	9,778	8,888	7,110
5 persons	10,930	9,936	7,951
6 persons	11,999	10,909	8,726
7 or more persons	13,158	11,960	9,567

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

Notes on Consumption

There are some major conceptual differences between family expenditure data derived from household surveys, and data on personal expenditure on consumer goods and services from the National Accounts; that is between *Tables and Charts 6.17* to *6.19* and the remainder of the exhibits. Apart from the fact that the expenditure surveys cover only selected cities and do not include people living in institutions, the main conceptual differences are as follows: the National Accounts include in personal expenditure certain imputed items, for example, farm products consumed directly in farm households, the rental value of owner-occupied dwellings, and estimated services rendered by

banks and other financial institutions without a specific charge. Hospital and medical insurance premiums paid to government, and fees for motor vehicle licences and permits are included with direct taxes in the National Accounts rather than with personal expenditure on consumer goods and services. The total operating expenses of associations of individuals or private non-profit corporations, such as universities, and churches are incorporated in personal expenditure on consumer goods and services. In family expenditure, only that portion of the cost covered by the fees levied by these institutions is included.

Family: The spending unit is defined as a group of persons depending on a common or pooled income for the major items of expense, and living in the same dwelling, or as one financially independent individual living alone. Sons or daughters who have never married and who live with their parents are considered as part of their parents' spending unit. In most cases, the members of spending units of two or more individuals are related by blood, marriage or adoption, and are thus consistent with the economic family definition employed in surveys of family income. It should be noted that according to the "economic family" definition, unrelated persons living in the same household would be counted as unattached individuals, whereas in the expenditure survey, it is possible for two or more unrelated persons to comprise one spending unit.

Footnotes

¹See Income Distribution by Size in Canada, *Catalogue 13-207, 1977*. In the same report, "Sources and Methods" describes the methodology of data collected and estimation procedures, and discusses the reliability of the estimates. See also "Definitions" at the close of this chapter for more detail.

²The arithmetic mean, commonly referred to as the average, is derived by dividing total income by the number of units; the median is the income that divides the distribution into two equal parts. Together, these two statistics shed some light on the nature of the distribution itself; for example, when the average and median income of the same distribution are equal, the distribution is symmetrical.

³Constant dollars or real total incomes which contain a component of taxes and savings as well as income expended on goods and services were obtained by dividing average incomes in current dollars by the Consumer Price Index — a practice that can be defended on the grounds of expediency rather than complete conceptual validity.

⁴Low-income families are determined by means of the low-income cutoff points which are purely statistical and not to be considered as government-endorsed poverty lines. (For details, see "Definitions".)

⁵Distribution Effects of Health and Education Benefits, *Catalogue 13-561, 1974*.

⁶O. Hawrylyshyn, Estimating the Value of Household Work in Canada, 1971, *Statistics Canada; Catalogue 13-566*, and O. Hawrylyshyn, "The Economic Nature and Value of Volunteer Activity in Canada", *Social Indicators Research, Vol. 5, 1978*.

⁷The data in these tables (except 6.17 and 6.18) are based on surveys of households in the eight major cities of Canada.

⁸Expenditure on final goods and services is defined as constituting those goods and services sold to the above-mentioned groups, that is, a tire which is sold to a person, or which is part of an automobile sold to a person, a government, a business, or which is exported, is included with these expenditures, but a tire sold by the tire manufacturer to the automobile maker is not, because it will be counted with the automobile. Again, flour and bread sold to consumers are counted, but flour sold to a baker, or bread sold to a restaurant are not, because the flour will be counted with the bread sold by the baker to a consumer or the bread will be included with the meal sold by the restaurant.

⁹For a more detailed discussion of the analysis underlying these revised cutoffs, an unpublished paper, "Revision of Low-Income Cutoffs" is available on request from the Consumer Income and Expenditure Division, Statistics Canada, Ottawa.

TABLE 6.1
Families and unattached individuals by income groups, in current dollars, 1965-77

Income group	All units							1977		
	1965	1967	1969	1971	1973	1975	1977	Families	Unattached individuals	
	per cent									
Under \$2,000	16.3	15.1	12.3	12.8	8.2	5.3	4.2	1.5	11.0	
\$ 2,000 — \$ 3,999	20.2	17.2	15.8	13.0	11.9	10.4	9.0	2.3	25.9	
\$ 4,000 — \$ 6,999	33.7	29.4	23.5	18.9	16.5	13.0	10.3	8.1	15.9	
\$ 7,000 — \$ 9,999	18.5	20.8	22.0	19.5	16.3	12.0	9.9	8.1	14.5	
\$10,000 — \$14,999	8.7	12.8	18.2	22.5	23.7	21.1	16.8	16.2	18.2	
\$15,000 — \$24,999	} 2.8	4.7	6.9	11.0	18.9	27.1	28.6	35.3	11.7	
\$25,000 and over			1.4	2.2	4.5	11.1	21.3	28.5	2.7	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Estimated number of families and unattached individuals	000s	5,351	6,018	6,450	6,836	7,135	7,795	8,166	5,866	2,300

Source: *Income Distributions by Size in Canada, Catalogue 13-207, 1977*.

CHART 6.2
Families and unattached individuals by income groups, in constant 1971 dollars, 1965-77



Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

TABLE 6.3
Distribution of income among families and unattached individuals,¹ 1951-77

	All units							1977	
	1951	1961	1967	1971	1973	1975	1977	Families	Unattached individuals
Average income	\$ 3,185	4,815	6,519	8,845	10,694	13,805	16,764	20,101	8,254
Median income	\$ 2,703	4,262	5,859	7,832	9,441	12,179	14,969	18,565	6,356
Gini coefficient ²	0.3904	0.3679	0.3789	0.4001	0.3924	0.3917	0.3878	0.3213	0.4367
<i>current dollars</i>									
Upper limit of: ³									
Lowest quintile	1,260	1,930	2,592	3,110	3,980	5,038	5,973	9,987	2,875
Second quintile	2,310	3,586	4,824	6,275	7,620	9,793	12,013	16,025	4,452
Middle quintile	3,180	4,950	6,807	9,295	11,286	14,565	17,993	21,223	8,415
Fourth quintile	4,320	6,630	9,468	12,941	15,943	20,598	25,598	28,443	13,200
<i>per cent</i>									
Shares of total income going to: ³									
Lowest quintile	4.4	4.2	4.2	3.6	3.9	4.0	3.8	5.9	3.8
Second quintile	11.2	11.8	11.4	10.6	10.7	10.6	10.7	13.1	8.4
Middle quintile	18.3	18.3	17.8	17.6	17.6	17.6	17.9	18.5	15.4
Fourth quintile	23.3	24.4	24.6	24.9	25.1	25.1	25.6	24.4	25.8
Fifth quintile	42.8	41.3	42.0	43.3	42.7	42.6	42.0	38.0	46.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

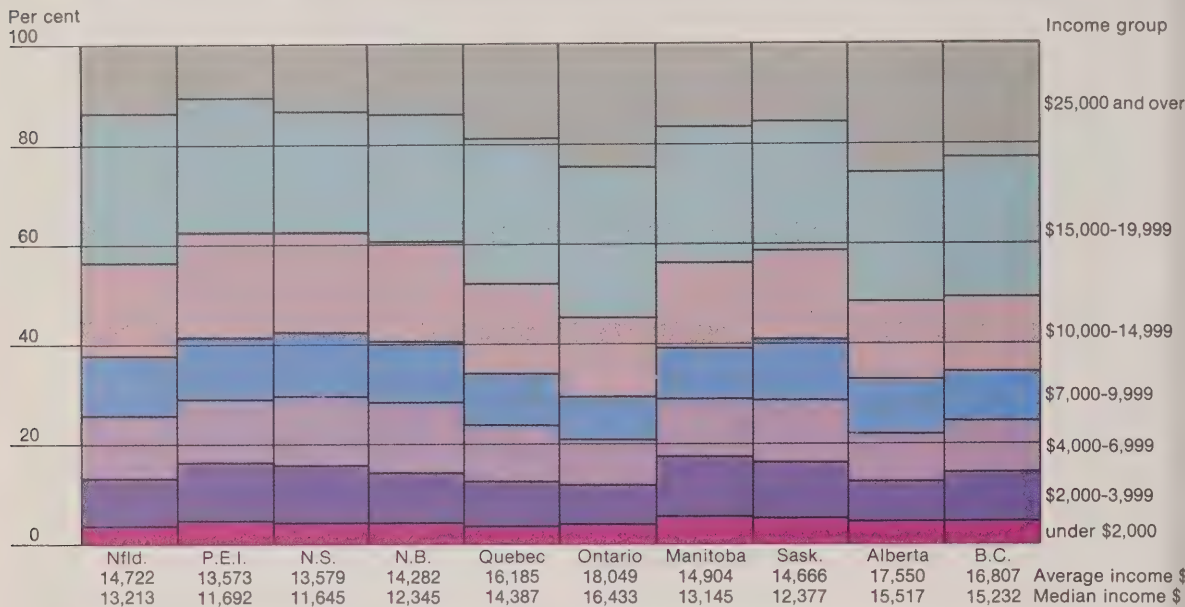
¹ Farmers not included before 1967. All data shown are in current dollars.

² The Gini coefficient measures the inequality of income distribution. Its value ranges from 0 to 1. The higher the value the greater the degree of inequality.

³ Each quintile contains one fifth of all units; for example, the lowest quintile contains the fifth of families and unattached individuals with the lowest incomes.

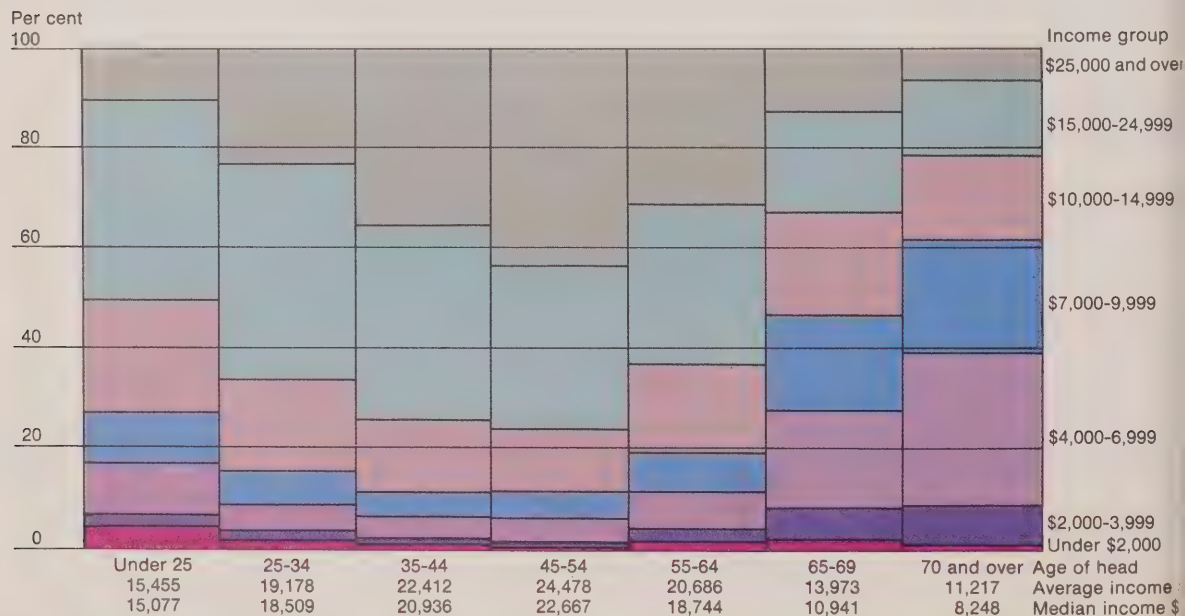
Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

CHART 6.4
Families and unattached individuals by income group, by province, 1977



Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

CHART 6.5
Families by income group and age of head, 1977



Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

TABLE 6.6
Proportion of families and unattached individuals
classified as low-income in each province and specified
areas of residence, 1977

	Families	Unattached individuals
	<i>per cent</i>	
Newfoundland	15.8	53.7
Prince Edward Island	11.2	44.5
Nova Scotia	12.4	44.0
New Brunswick	13.8	43.0
Québec	12.7	40.6
Ontario	9.8	34.1
Manitoba	13.8	44.8
Saskatchewan	12.1	36.5
Alberta	9.8	28.9
British Columbia	10.4	33.9
Canada	11.2	36.6
Area of residence:		
Metropolitan centres (population of 30,000 or more)	10.9	36.3
Other cities (population of 15,000-29,999)	10.4	34.1
Small urban areas (population under 15,000)	11.5	41.6
Rural areas	12.6	35.3

¹ See text for explanation of low-income.

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

TABLE 6.8
Low-income¹ families and unattached individuals as a
percentage of all families and unattached individuals, by
specified characteristics, 1977 (concluded)

	Families	Unattached individuals
Number of children under 16 years:		
None	10.2	
One child	10.2	
Two children	11.0	
Three children	15.4	
Four or more children	21.4	

¹ See text for explanation of low-income.

² For example, 11.3% of all families consisting of only married couples were classified as low-income.

³ By definition those with no income fall into the low-income category.

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

TABLE 6.7
Low-income¹ families and unattached individuals as a
percentage of all families and unattached individuals, by
specified characteristics of head, 1977

	Families	Unattached individuals
	<i>per cent</i>	
Weeks worked by head in the year: ²		
None	36.2	69.3
1- 9 weeks	38.5	60.6
10-19 weeks	27.1	60.7
20-29 weeks	17.2	39.3
30-39 weeks	12.7	25.4
40-49 weeks	11.0	18.4
50-52 weeks	4.0	7.9
Age of head:		
24 years and under	15.6	35.2
25-34 years	10.8	14.5
35-44 years	9.3	20.2
45-54 years	7.5	30.3
55-64 years	10.0	40.9
65-69 years	18.4	51.4
70 years and over	23.0	60.6
Current employment status of head:		
Employee	5.0	14.1
Self-employed or employer	15.4	45.0
Not in labour force	31.7	65.9
Education of head:		
0-8 years	17.1	58.9
Some high school and no post-secondary	10.4	31.5
Some post-secondary	9.4	36.3
Post-secondary certificate or diploma	6.4	23.6
University degree	4.0	16.3
Sex of head:		
Male	8.4	28.0
Female	38.0	43.5

¹ See text for explanation of low-income.

² For example, 36.2% of all families in which the head did not work during the year were classified as low-income.

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

TABLE 6.8
Low-income¹ families and unattached individuals as a
percentage of all families and unattached individuals, by
specified characteristics, 1977

	Families	Unattached individuals
Family characteristics: ²		
Married couple only	11.3	..
Married couple with single children only	7.0	..
Married couple with married children	5.5	..
Married couple with other relatives only	6.4	..
Other families	2.1	..
Non-farm and farm residence:		
Not resident on farm	10.9	36.6
Resident on farm	17.1	37.8
Major source of income:		
No income ³	100.0	100.0
Wages and salaries	3.9	14.9
Net income from self-employment	15.4	33.1
Transfer payments	52.7	79.3
Investment income	13.1	19.5
Pension and miscellaneous income	18.1	20.8

TABLE 6.9
Characteristics of low-income¹ and other families and
unattached individuals, 1977

	Families		Unattached individuals	
	Low income	Other	Low income	Other
	<i>per cent</i>			
Province of residence:				
Newfoundland	3.0	2.0	1.7	0.8
Prince Edward Island	0.5	0.5	0.5	0.4
Nova Scotia	3.7	3.3	4.0	2.9
New Brunswick	3.5	2.7	2.7	2.1
Quebec	30.5	26.6	26.3	22.2
Ontario	32.1	37.5	33.5	37.3
Manitoba	5.3	4.2	6.2	4.4
Saskatchewan	4.3	3.9	4.6	4.6
Alberta	7.1	8.3	7.2	10.2
British Columbia	10.0	10.9	13.3	15.0
Total	100.0	100.0	100.0	100.0
Population of area of residence:				
500,000 persons and over	32.2	32.7	36.1	37.5
100,000 - 499,999 persons	21.1	23.4	24.8	27.0
30,000 - 99,999 persons	7.9	7.6	9.7	7.2
15,000 - 29,999 persons	6.0	6.5	7.2	8.1
Small urban areas (less than 15,000) persons	11.4	11.2	12.6	10.3
Rural areas	21.2	18.6	9.5	10.1
Total	100.0	100.0	100.0	100.0
Weeks worked by head in the year:				
None	52.0	11.6	67.5	17.3
1- 9 weeks	4.0	0.8	4.2	1.6
10-19 weeks	5.4	1.8	8.3	3.1
20-29 weeks	5.6	3.4	5.5	4.9
30-39 weeks	4.0	3.5	3.0	5.1
40-49 weeks	4.5	4.6	2.1	5.5
50-52 weeks	24.5	74.2	9.3	62.5
Total	100.0	100.0	100.0	100.0
Age of head:				
24 years and under	8.1	5.6	23.8	25.2
25-34 years	25.0	26.2	7.5	25.5
35-44 years	17.7	21.9	4.0	9.2
45-54 years	13.4	20.7	7.9	10.5
55-64 years	13.0	14.8	14.1	11.7
65-69 years	8.7	4.9	10.6	5.8
70 years and over	14.2	6.0	32.1	12.0
Total	100.0	100.0	100.0	100.0
Current employment status of head: ²				
Employee	31.7	75.9	21.2	74.6
Employer or self-employed	12.8	8.9	4.6	3.3
Not in labour force	55.5	15.1	74.1	22.2
Total	100.0	100.0	100.0	100.0
Education of head:				
0-8 years	44.8	27.5	42.0	16.9
Some high school and no post-secondary	39.3	43.0	32.6	40.9
Some post-secondary	6.7	8.2	13.0	13.1
Post-secondary certificate or diploma	5.7	10.5	7.2	13.5
University degree	3.6	10.8	5.2	15.5
Total	100.0	100.0	100.0	100.0

TABLE 6.9
Characteristics of low-income¹ and other families and
unattached individuals, 1977 (concluded)

	Families		Unattached individuals	
	Low income	Other	Low income	Other
	<i>per cent</i>			
Non-farm and farm residence:				
Not resident on farm	92.3	95.3	98.2	98.3
Resident on farm	7.7	4.7	1.8	1.7
Total	100.0	100.0	100.0	100.0
Major source of income:				
No income	1.8	..	8.5	..
Wages and salaries	27.0	84.0	23.3	76.5
Net income from self-employment	8.0	5.6	2.0	2.3
Transfer payments	57.5	6.5	61.0	9.2
Investment income	2.4	2.0	2.9	6.8
Pension and miscellaneous income	3.4	1.9	2.3	5.1
Total	100.0	100.0	100.0	100.0
Family characteristics:				
Married couple	27.7	27.4	..	..
Married couple with single children	34.7	58.2	..	..
Married couple with married children	1.9	4.1	..	..
Married couple with other relatives	0.5	0.9	..	..
Other families	35.2	9.4	..	..
Total	100.0	100.0	..	..
Number of children under 16 years:				
None	41.0	45.7	100.0	100.0
One child	19.6	21.7	..	..
Two children	20.7	21.3	..	..
Three children	11.6	8.1	..	..
Four or more children	7.1	3.3	..	..
Total	100.0	100.0	100.0	100.0
Sex of head:				
Male	67.6	93.3	33.9	50.5
Female	32.4	6.7	66.1	49.5
Total	100.0	100.0	100.0	100.0
Estimated total number	659	5,207	842	1,458

¹ See text for explanation of low-income.

² Family units were classified by the head's employment status at the time of the survey. This is not necessarily the employment status during 1977.

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977.

TABLE 6.10
Families and selected aggregates by size of total money income (before tax) and incidence of income tax and transfer payments, 1975

Total money income size group	All families	Total money income before tax	Money income before transfer payments	Income after tax	Transfer payments	Income tax	Effective average rate	
							Transfer payments ¹	Income tax ²
<i>per cent</i>								
Under \$3,000	2.7	0.2	...	0.2	2.1	...	81.5	3.3
\$ 3,000 — \$ 3,999	2.4	0.5	0.2	0.6	4.2	...	69.4	1.4
\$ 4,000 — \$ 4,999	3.2	0.9	0.4	1.0	6.5	0.1	62.8	0.9
\$ 5,000 — \$ 5,999	4.0	1.3	0.6	1.5	9.1	0.1	58.3	0.9
\$ 6,000 — \$ 6,999	3.6	1.4	0.9	1.6	6.7	0.2	40.0	2.3
\$ 7,000 — \$ 7,999	3.3	1.5	1.2	1.7	5.2	0.4	29.0	4.1
\$ 8,000 — \$ 8,999	3.6	1.8	1.6	2.0	4.7	0.7	21.6	5.5
\$ 9,000 — \$ 9,999	3.5	2.0	1.8	2.2	4.0	0.9	17.1	6.9
\$10,000 — \$11,999	9.0	5.9	5.6	6.4	9.1	3.4	12.9	8.6
\$12,000 — \$14,999	14.5	11.8	11.7	12.3	12.3	9.0	8.8	11.4
\$15,000 — \$19,999	21.1	22.1	22.7	22.3	15.3	21.0	5.8	14.2
\$20,000 — \$24,999	14.2	18.9	19.8	18.7	10.1	20.4	4.5	16.1
\$25,000 and over	15.0	31.6	33.6	29.5	10.6	43.8	2.8	20.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	8.4	14.9

¹ Transfer payments as a percentage of total money income (before tax).

² Percentage of total money income payable in income tax.

Source: *Income After Tax, Distributions by Size in Canada*, Catalogue 13-201, 1975.

TABLE 6.11
Benefits from educational services, by family income group, 1974

Family income group ¹	Benefits from the utilization of educational services				Total	Average educational benefits
	Less than \$500	\$500-\$1,499	\$1,500-\$2,999	\$3,000 and over		
<i>per cent</i>						
Under \$5,000	7.3	38.4	27.3	27.1	100.0	<i>dollars</i>
\$ 5,000 — \$ 9,999	12.6	33.1	29.7	24.6	100.0	2,219
\$10,000 — \$14,999	9.8	34.1	33.9	22.2	100.0	2,374
\$15,000 — \$19,999	8.5	28.8	36.1	26.6	100.0	2,312
\$20,000 — \$24,999	6.5	23.9	36.4	33.2	100.0	2,468
\$25,000 and over	6.4	19.4	30.8	43.4	100.0	2,752
Total	8.9	30.4	32.8	27.9	100.0	3,300
Average income	\$ 13,930	13,565	15,758	17,150	15,315	
Median income	\$ 12,753	12,726	14,484	15,527	13,943	

¹ Includes all families and unattached individuals.

Source: *Distributional Effects of Health and Education Benefits*, Catalogue 13-561, 1974.

TABLE 6.12
Benefits from health services, by family income group, 1974

Family income group ¹	Benefits from the utilization of health services					Total	Average health benefits
	Less than \$50	\$50-\$499	\$500-\$1,499	\$1,500-\$2,999	\$3,000 and over		
	<i>per cent</i>						<i>dollars</i>
Under \$5,000	43.3	32.2	12.1	6.4	6.1	100.0	690
\$ 5,000 — \$ 9,999	40.1	34.0	14.3	6.9	4.7	100.0	643
\$10,000 — \$14,999	35.2	38.6	15.1	6.9	4.1	100.0	607
\$15,000 — \$19,999	30.9	42.6	16.7	7.1	2.7	100.0	516
\$20,000 — \$24,999	30.1	46.3	15.0	5.9	2.7	100.0	522
\$25,000 and over	30.5	45.3	16.5	3.9	3.8	100.0	512
Total	36.4	38.2	14.7	6.5	4.2	100.0	601
Average income	\$ 11,733	13,947	13,759	12,074	11,226	12,877	...
Median income	\$ 10,287	12,708	12,383	11,259	9,259	11,563	...

¹ Includes all families and unattached individuals.

Source: *Distributional Effects of Health and Education Benefits*, Catalogue 13-561, 1974.

TABLE 6.13
Distribution of families and unattached individuals by income class, Canada and the United States, 1967-77

	1967		1971		1973		1975		1977	
	Canada	United States	Canada	United States	Canada	United States	Canada	United States	Canada	United States
	<i>per cent</i>									
Under \$2,000	15.1	14.4	12.8	10.4	8.2	7.7	5.3	5.3	4.2	4.2
\$ 2,000 — \$ 3,999	17.2	14.5	13.0	12.9	11.9	12.1	10.4	11.7	9.0	10.3
\$ 4,000 — \$ 6,999	29.4	22.3	18.9	17.6	16.5	15.9	13.0	14.8	10.3	13.7
\$ 7,000 — \$ 9,999	20.8	20.9	19.5	17.1	16.3	14.6	12.0	13.4	9.9	12.0
\$10,000 — \$14,999	12.8	18.6	22.5	22.4	23.7	21.8	21.1	19.8	16.8	17.7
\$15,000 — \$24,999	{ 4.7	9.3	{ 13.2	19.8	{ 23.4	27.9	27.1	24.0	28.6	25.4
\$25,000 and over							11.1	10.8	21.3	16.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Median income	\$ 5,859	6,852	7,832	8,583	9,441	9,930	12,179	11,074	14,969	12,666
Estimated total number of families and unattached individuals	000s 6,018	63,317	6,836	69,607	7,135	73,313	7,795	76,479	8,166	80,326

Source: *Income Distributions by Size in Canada*, Catalogue 13-207, 1977, *Money Income and Poverty Status of Families and Persons in the United States: 1977*, U.S. Bureau of Census, Series P-60, No. 116, 1978.

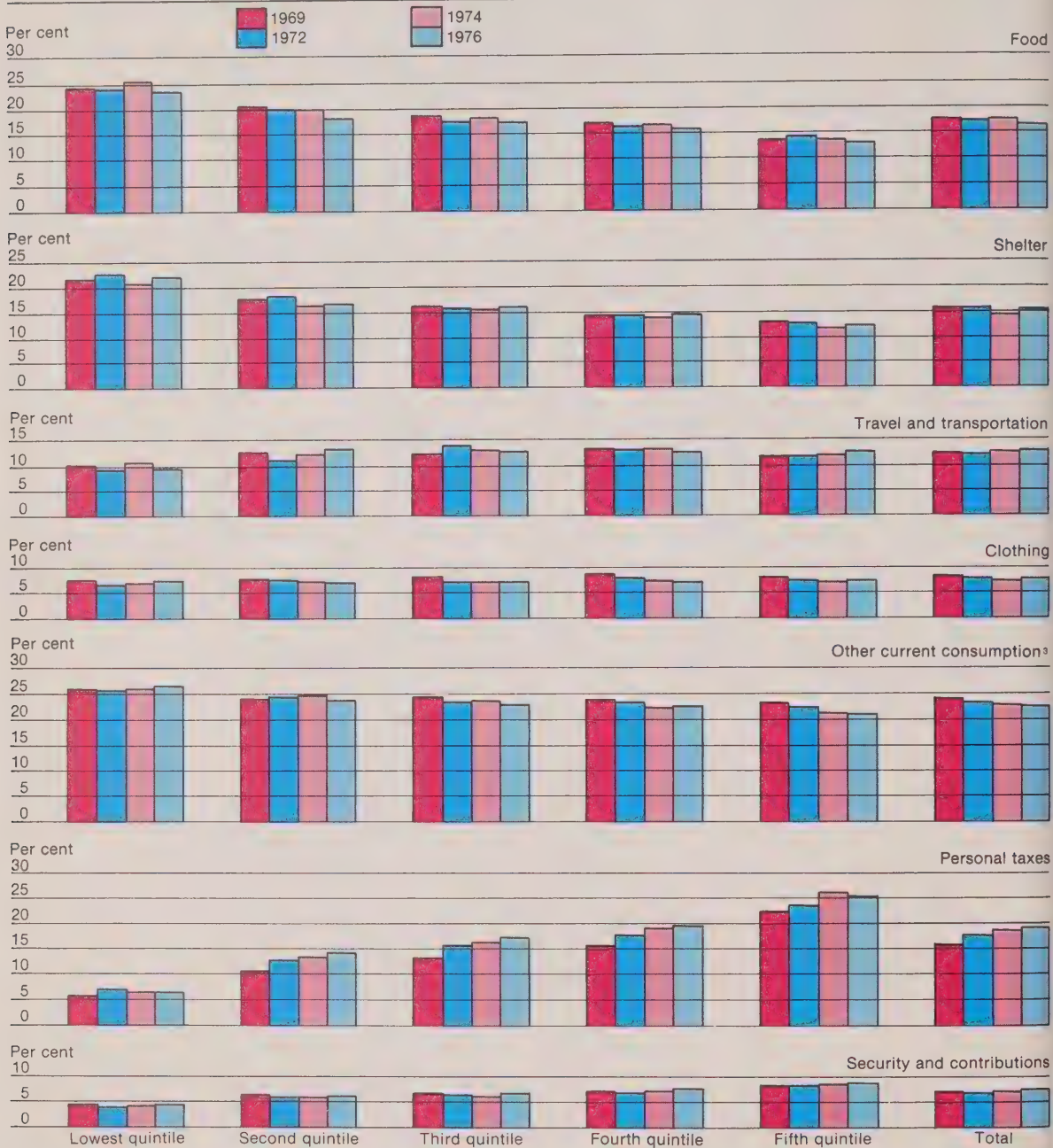
TABLE 6.14
Households owning automobiles and selected appliances, by income level, United States and Canada, 1974

Income class ¹	Automobiles		Televisions		Washing machine	Clothes dryer	Freezer	Dish-washer
	One or more	Two or more	One or more sets	One or more colour sets				
	<i>per cent</i>							
Under \$3,000								
United States	43.2	6.2	89.7	31.6	47.5	18.2	19.2	5.1
Canada	32.9	3.0	88.2	20.9	56.3	17.1	20.7	2.0
\$3,000-\$4,999								
United States	60.7	8.8	94.4	40.6	53.0	24.8	25.5	6.1
Canada	51.8	5.1	94.4	28.1	67.2	26.1	29.3	3.1
\$5,000-\$7,499								
United States	76.0	15.6	96.1	50.4	59.6	32.9	26.0	9.3
Canada	68.3	8.8	94.9	33.0	70.1	33.0	32.3	4.7
\$7,500-\$9,999								
United States	85.0	23.1	97.0	57.8	65.2	43.2	30.0	12.7
Canada	82.6	12.4	96.3	39.6	75.1	43.8	36.9	5.9
\$10,000-\$14,999								
United States	91.7	36.8	97.9	67.4	74.8	58.9	36.8	22.6
Canada	90.7	21.3	97.6	49.3	81.8	55.6	43.6	11.3
\$15,000-\$19,999								
United States	95.5	50.1	99.0	78.1	83.6	70.4	40.4	38.2
Canada	94.7	36.8	98.3	56.6	86.6	66.3	50.5	19.0
\$20,000-\$24,999								
United States	96.9	60.1	99.0	80.2	84.1	74.4	43.9	46.3
Canada	96.3	51.4	98.6	62.6	90.5	72.2	51.0	28.8
\$25,000 and over								
United States	96.7	67.2	98.7	84.4	88.4	81.3	48.2	63.5
Canada	96.4	60.7	98.6	72.8	90.1	79.8	58.1	49.7
All households								
United States	81.5	32.7	96.6	61.3	69.6	50.5	33.4	24.1
Canada	76.9	20.5	95.8	43.2	76.4	47.1	39.1	11.7

¹ Total money income (before taxes) of primary family or primary individual in 12 months immediately preceding interview.

Source: U.S. Bureau of the Census, Selected Data from the 1973 and 1974 Survey of Purchase and Ownership; Household Income and Facilities and Equipment files, Statistics Canada, unpublished data.

CHART 6.15
Distribution of family¹ expenditures by income quintile,² 1969-76



¹Includes families of two or more persons.

²See footnote 3, Table 6.3.

³Includes household operation, furnishings and equipment, personal care, medical and health care, tobacco and alcoholic beverages, recreation, reading, education and miscellaneous expenses.

TABLE 6.16
Consumer Price Indexes,¹ 1961-78

	Food	Housing	Clothing	Transportation	Health and personal care	Recreation, education and reading	Tobacco and alcohol	All items
	<i>per cent</i>							
1961	76.1	73.1	77.7	77.0	70.2	73.7	77.8	75.0
1966	88.7	79.5	87.0	82.6	81.8	80.1	83.7	83.5
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972	107.6	104.7	102.6	102.6	104.8	102.8	102.7	104.8
1973	123.3	111.4	107.7	105.3	109.8	107.1	106.0	112.7
1974	143.4	121.1	118.0	115.8	119.4	116.4	111.8	125.0
1975	161.9	133.2	125.1	129.4	133.0	128.5	125.3	138.5
1976	166.2	148.0	132.0	143.3	144.3	136.2	134.3	148.9
1977	180.1	161.9	141.0	153.3	155.0	142.7	143.8	160.8
1978	175.2	208.0	174.1	146.0	162.2	166.2	148.2	155.5

¹ 1971 is the base year.

Source: *The Consumer Price Index*, Catalogue 62-001.

TABLE 6.17
Total expenditures on all goods and services (Gross National Expenditure) in constant 1971 dollars, 1961-78

	1961	1966	1971	1972	1973	1974	1975	1976	1977	1978
	<i>millions of 1971 dollars</i>									
Personal expenditure on consumer goods and services	33,761	43,778	55,616	59,841	63,879	67,160	70,783	75,308	77,399	79,823
Government current expenditure on goods and services	10,494	13,388	18,368	18,930	19,795	20,584	21,393	21,809	22,247	22,591
Gross fixed capital formation ¹	11,748	18,015	20,800	21,955	24,384	25,694	26,673	27,268	27,350	27,296
Value of physical change in inventories	251	1,385	392	515	1,346	2,642	-298	936	-23	599
Export of goods and services	9,374	14,315	22,181	23,655	26,156	25,620	23,998	26,247	28,199	30,590
Import of goods and services	-10,559	-15,989	-22,016	-24,489	-27,824	-30,538	-29,693	-32,072	32,860	-34,212
Residual error ² and adjusting entry ³	-328	-48	-891	-159	76	516	277	-102	249	-11
Gross National Expenditure	54,741	74,844	94,450	100,248	107,812	111,678	113,133	119,394	122,561	126,676

¹ Gross fixed capital formation is defined as including outlays on durable tangible assets with a lifetime use of one year or more. Only new construction (both residential and non-residential) and new machinery and equipment are included.

² Residual error reflects a number of factors including imperfections in the basic statistics, flaws in estimation techniques, and discrepancies in the timing with which income and expenditure data are recorded.

³ Adjusting entries occur prior to 1971 in order to convert the data to 1971 constant dollars.

Source: *System of National Accounts, National Income and Expenditure Accounts*, Catalogue 13-201, 1978.

TABLE 6.18
Personal expenditure on consumer goods and services per person in constant 1971 dollars, 1961-78

	1961	1966	1971	1972	1973	1974	1975	1976	1977	1978
	<i>constant 1971 dollars</i>									
Food, beverages and tobacco	454.5	481.2	563.2	578.0	584.5	590.0	607.7	644.4	638.0	624.4
Clothing and footwear	158.5	172.7	192.1	204.0	216.5	246.6	265.9	284.6	280.8	294.9
Gross rent, fuel and power	330.1	407.1	490.6	505.3	515.3	531.7	540.6	551.1	556.0	578.7
Furniture, furnishings and household equipment and operation	181.8	211.7	245.5	273.2	305.0	315.1	320.0	331.1	331.8	342.1
Medical care and services	76.4	91.7	75.0	80.0	85.3	93.1	98.1	100.9	104.3	108.7
Transportation and communications	229.7	321.7	371.6	403.9	453.6	467.4	491.8	512.5	521.7	541.5
Recreation, entertainment, education and cultural services	124.2	176.4	248.7	277.0	301.3	327.7	338.9	362.6	364.9	378.5
Personal goods and services	293.5	325.8	387.5	415.6	425.9	419.0	431.1	447.9	477.3	497.1
Total personal expenditure on consumer goods and services	1,851.1	2,187.3	2,578.6	2,744.7	2,897.9	3,003.0	3,118.6	3,275.3	3,327.8	3,399.5

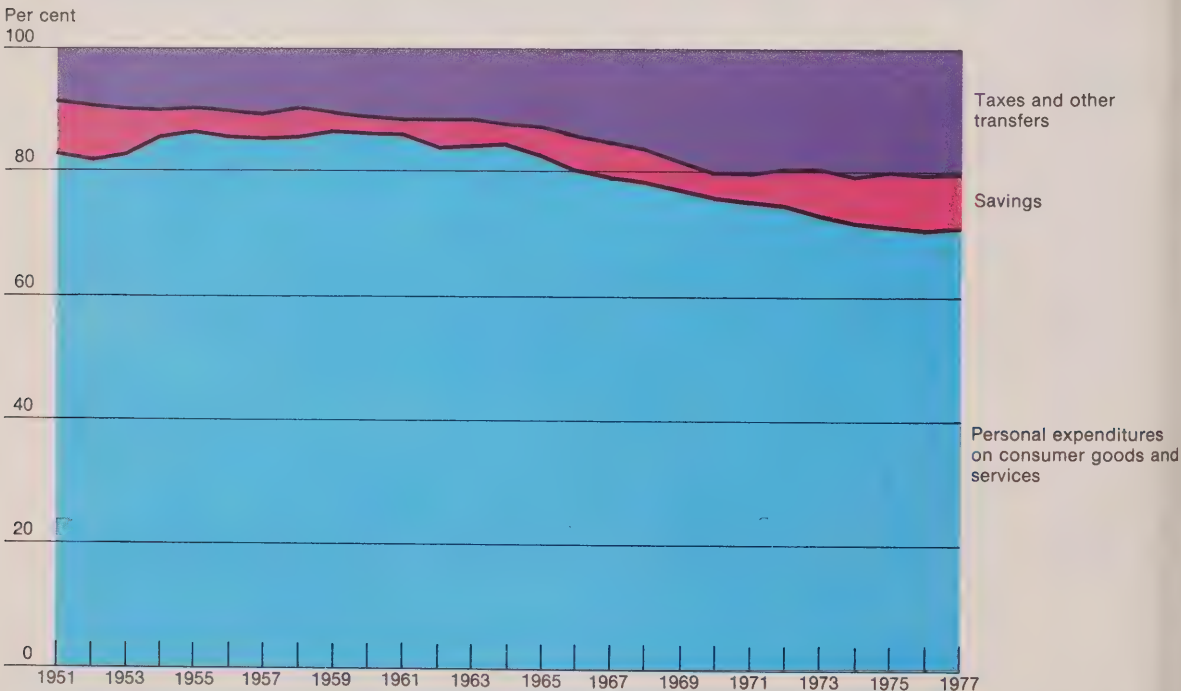
TABLE 6.18
Personal expenditure on consumer goods and services per person in constant 1971 dollars, 1961-78 (concluded)

	1961	1966	1971	1972	1973	1974	1975	1976	1977	1978
	<i>per cent</i>									
Food, beverages and tobacco	24.6	22.0	21.8	21.1	20.2	19.6	19.5	19.7	19.2	18.4
Clothing and footwear	8.5	7.9	7.5	7.4	7.5	8.2	8.5	8.7	8.4	8.7
Gross rent, fuel and power	17.8	18.6	19.0	18.4	17.8	17.7	17.3	16.8	17.0	17.0
Furniture, furnishings and household equipment and operation	9.8	9.7	9.5	10.0	10.5	10.5	10.3	10.1	10.0	10.1
Medical care and services	4.1	4.2	2.9	2.9	2.9	3.1	3.1	3.1	3.1	3.2
Transportation and communications	12.4	14.7	14.4	14.7	15.6	15.6	15.8	15.6	15.7	15.9
Recreation, entertainment, education and cultural services	6.7	8.1	9.7	10.1	10.4	10.9	10.9	11.1	11.0	11.1
Personal goods and services	15.9	14.9	15.0	15.1	14.7	14.0	13.8	13.7	14.3	14.6
Total personal expenditure on consumer goods and services ¹	99.8	100.1	99.8	99.7	99.6	99.6	99.2	98.8	98.7	99.0

¹ Column figures do not add to totals due to omission of net expenditure abroad, that is, expenditure by Canadians on consumer goods and services in foreign countries less similar expenditures by foreign visitors in Canada, and because of an adjusting entry for years prior to 1971 to convert these data to the 1971 base.

Source: *System of National Accounts, National Income and Expenditure Accounts*, Catalogue 13-201, 1978.

CHART 6.19
Disposition of total personal income, 1951-77



Source: *System of National Accounts, National Income and Expenditure Accounts, Volume 1, The Annual Estimates, 1926-1974*, Catalogue 13-531; National Accounts Division, Statistics Canada, unpublished data.

TABLE 6.20
How the tax dollar was spent,¹ 1971-76

	1971	1972	1973	1974	1975	1976
<i>millions of dollars</i>						
<i>Common use of collectively financed goods and services²</i>						
General government services and foreign affairs	2,595.5	2,891.5	3,355.5	4,672.0	5,195.0	6,213.8
Protection of persons and property	3,374.4	3,650.0	4,178.2	4,809.3	5,717.3	6,859.5
Transportation, communications and natural resources	4,312.3	4,804.5	5,670.3	8,090.4	9,540.1	9,502.9
Other expenditures	3,313.7	3,852.7	4,359.1	5,605.3	7,132.0	7,754.1
Total common use expenditure	13,595.9	15,198.7	17,563.1	23,177.0	27,584.4	30,330.3
Percentage of total government expenditure	% 37.4	37.1	37.4	39.1	38.4	37.6
<i>Individual use of collectively financed goods and services²</i>						
Health	4,886.2	5,478.0	6,069.4	7,357.5	8,961.0	10,140.3
Social welfare and housing	7,477.4	9,093.2	10,989.4	13,843.7	17,084.7	19,434.5
Education, recreation and culture	7,298.3	7,863.8	8,456.2	10,224.7	12,450.7	14,135.6
Debt interest charges	3,069.4	3,374.9	3,934.9	4,695.3	5,729.7	6,539.3
Total individual use expenditure	22,731.3	25,809.9	29,449.9	36,121.2	44,226.1	50,249.7
Percentage of total government expenditure	% 62.6	62.9	62.6	60.9	61.6	62.4
Total government expenditure	36,327.2	41,008.6	47,013.0	59,298.2	71,810.5	80,580.0
Total government expenditure as a percentage of GNP	% 37.4	37.7	36.5	39.1	41.9	41.0

¹ These figures represent consolidated accounts of gross expenditure by federal, provincial and municipal governments

² The division of the functional categories distinguishes collectively financed goods that are collectively consumed from those that are collectively financed and individually consumed. Defence expenditure is an example of the former group and veterans' pensions are an example of the latter group. This distinction, however, is not necessarily pure. Health expenditure is probably a good example of a grey area, with public health clearly being collectively consumed and medicare being individually consumed.

Source: *Consolidated Government Finance — Revenues and Expenditures and Assets and Liabilities of Federal, Provincial and Local Governments, Catalogue 68-202, 1976.*

TABLE 6.21
Selected family characteristics and average family expenditure,¹ 1969-76

	1969	1972	1974	1976	
<i>Family characteristics:</i>					
Family size ²	<i>number</i>	3.6	3.5	3.4	3.3
Number of persons aged under 16 years	"	1.3	1.1	1.0	1.0
Number of persons aged 16-64 years	"	2.2	2.2	2.3	2.2
Number of persons aged 65 years and over	"	.2	.2	.2	.2
Number of full-time wage earners	"	1.0	1.0	1.0	1.0
Age of head	<i>years</i>	44.0	44.1	43.7	43.8
Income before taxes	\$	10,560	12,549	16,341	20,771
Other money receipts	\$	216	246	381	615
Net change in assets and liabilities from previous year	\$	332	572	885	1,260
Homeowners	%	55.0	53.9	56.7	57.1
Car or truck owners	%	77.9	75.6	78.7	79.8
Wife employed full-time	%	16.4	18.4	20.3	22.1
<i>Average family expenditure³</i>					
<i>current dollars</i>					
Food		1,843	2,077	2,713	3,224
<i>Shelter⁴:</i>					
Living quarters and other housing ⁵		1,371	1,591	1,914	2,509
Water, power and fuel		273	306	382	502
Total shelter		1,644	1,897	2,295	3,011
Household operation		427	450	585	763
<i>Household furnishings and equipment:</i>					
Furniture		166	188	306	331
Appliances		111	120	168	215
Other furnishings and equipment		209	247	306	430
Total household furnishings and equipment		486	555	780	976

TABLE 6.21
Selected family characteristics and average family expenditure,¹ 1969-76 (concluded)

	1969	1972	1974	1976
Clothing	849	903	1,120	1,438
Personal care	222	229	267	313
Medical and health care	342	321	330	394
Tobacco and alcoholic beverages	377	455	518	639
Travel and transportation:				
Purchase of automobiles and trucks	465	527	727	866
Operation of automobiles and trucks	548	624	799	1,116
Other travel and transportation	268	321	415	520
Total travel and transportation	1,281	1,472	1,941	2,502
Recreation ~	366	439	593	753
Reading ~	66	67	87	106
Education	106	116	125	145
Miscellaneous expenses	144	216	325	439
Total current consumption	8,154	9,195	11,680	14,704
Personal taxes	1,648	2,133	2,959	3,818
Security	491	575	798	1,039
Gifts and charitable contributions	246	251	300	427
Total expenditure	10,539	12,154	15,737	19,987

¹ Includes families of two or more persons. The data are from surveys conducted in 8 cities: St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver.

² Family size was computed by dividing the total number of weeks during which family members belonged to the unit in the survey year by 52 weeks. In this way, part year members were counted as a fraction of a year-equivalent person.

³ The average dollar expenditure per family was based on all families in each class, whether or not they reported purchases of a particular item.

⁴ Does not include repayment of the principal of the mortgage.

⁵ Includes expenditure on accommodation while away from home and on owned or rented vacation homes.

Source: Consumer Income and Expenditure Division, Statistics Canada, unpublished data.

TABLE 6.22
Distribution of family expenditure,¹ 1969-76

	1969	1972	1974	1976		1969	1972	1974	1976
					<i>per cent</i>				
Food	17.5	17.2	17.2	16.1	Travel and transportation:				
Shelter ² :					Purchase of automobiles and trucks	4.4	4.3	4.6	4.3
Living quarters ³	13.0	13.1	12.2	12.6	Operation of automobiles and trucks	5.2	5.1	5.1	5.6
Water, power and fuel	2.6	2.5	2.4	2.5	Other travel and transportation	2.5	2.6	2.6	2.6
Total shelter	15.6	15.6	14.6	15.1	Total travel and transportation	12.2	12.1	12.3	12.5
Household operation	4.1	3.7	3.7	3.8	Recreation	3.5	3.6	3.8	3.8
Household furnishings and equipment:					Reading	0.6	0.6	0.6	0.5
Furniture	1.6	1.5	1.9	1.7	Education	1.0	1.0	0.8	0.7
Appliances	1.0	1.0	1.1	1.1	Miscellaneous expenses	1.4	1.8	2.1	2.2
Other furnishings and equipment	2.0	2.0	1.9	2.2	Total current consumption	77.4	75.7	74.2	73.6
Total household furnishings	4.6	4.6	5.0	4.9	Personal taxes	15.6	17.6	18.8	19.1
Clothing	8.1	7.4	7.1	7.2	Security	4.7	4.7	5.1	5.2
Personal care	2.1	1.9	1.7	1.6	Gifts and charitable contributions	2.3	2.1	1.9	2.1
Medical and health care	3.2	2.6	2.1	2.0	Total expenditure	100.0	100.0	100.0	100.0
Tobacco and alcoholic beverages	3.6	3.7	3.3	3.2					

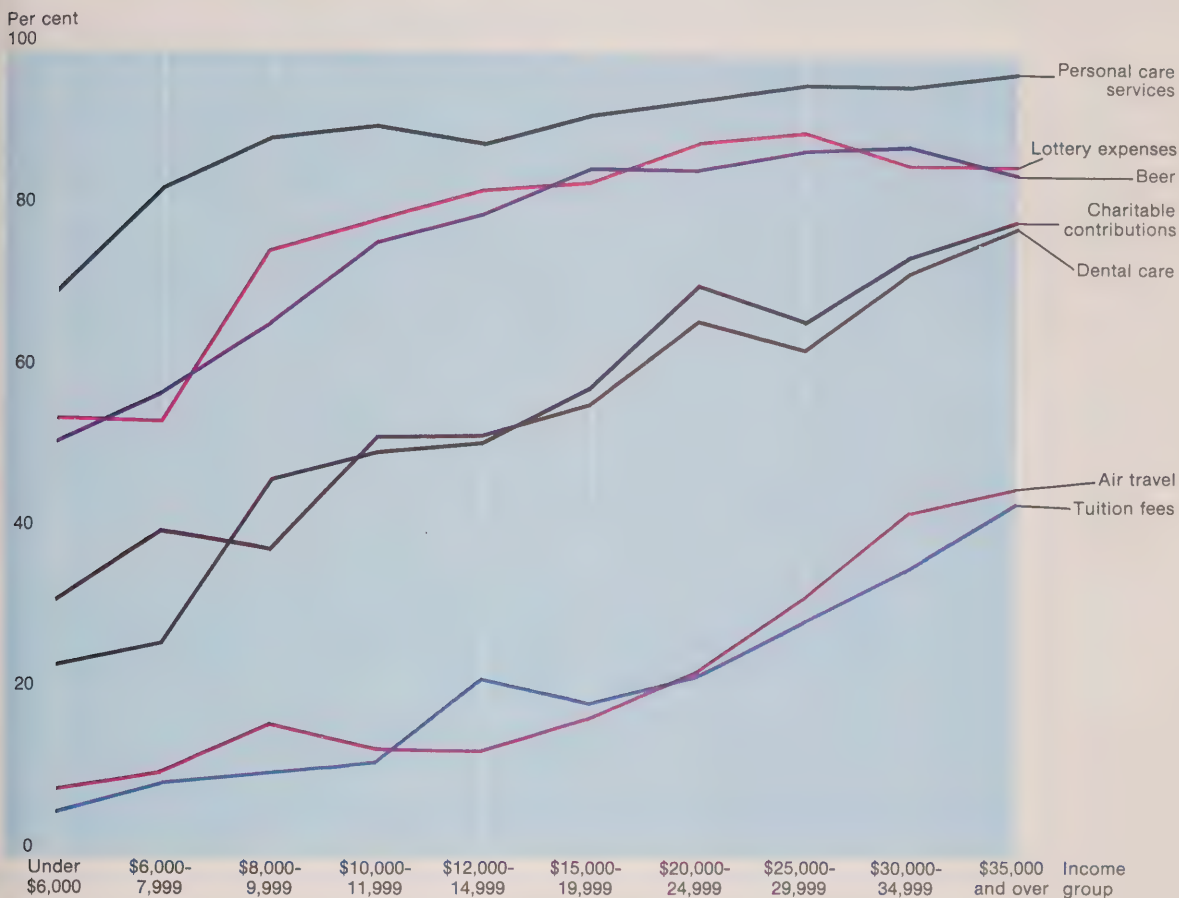
¹ Includes families of two or more persons. The data are from surveys conducted in 8 cities: St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver.

² Does not include repayment of the principal of the mortgage.

³ Includes expenditure on accommodation while away from home and on owned or rented vacation homes.

Source: Consumer Income and Expenditure Division, Statistics Canada, unpublished data.

CHART 6.23
 Proportion of families reporting selected expenditures, by family income, 1976¹



¹See footnote 1, Chart 6.15.

Source: Consumer Income and Expenditure Division, Statistics Canada, unpublished data.

TABLE 6.24
Distribution of food purchases for home consumption by family income quintile^{1,2}, 1976

	Lowest quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile
	<i>per cent</i>				
<i>Food prepared at home</i>					
<i>Dairy products:</i>					
Milk	7.4	7.9	7.2	7.2	6.9
Other dairy products	7.8	8.0	8.1	8.0	8.6
Total dairy products	15.2	15.9	15.3	15.3	15.5
Eggs	2.3	2.2	2.2	2.2	2.2
Bakery products	8.4	8.5	8.8	8.3	8.4
Cereal products	3.7	3.1	2.8	3.4	2.9
<i>Meat and poultry:</i>					
Beef	12.5	13.4	13.1	13.9	13.0
Pork	7.5	7.7	7.8	7.8	7.9
Other meats	4.5	5.0	4.9	5.3	5.1
Poultry	4.8	4.5	4.7	4.7	4.4
Total meat and poultry	29.2	30.5	30.5	31.7	30.4
Fish	3.4	2.6	2.4	2.7	3.2
Fats and oils	2.8	2.7	2.6	2.5	2.6
Beverages	6.7	6.8	6.9	6.7	6.6
Miscellaneous groceries	7.2	7.4	7.9	6.9	6.8
Canned and dried fruits	2.6	2.0	2.3	2.1	2.2
Canned and dried vegetables	2.0	2.3	2.3	2.3	2.2
Fresh fruits	5.8	5.5	5.3	5.4	6.1
Fresh vegetables	6.3	6.2	6.1	6.1	5.9
Frozen foods	2.0	2.1	2.6	2.4	2.9
Prepared and partially prepared dishes	2.5	2.1	2.2	2.2	2.4
Total food prepared at home	100.0	100.0	100.0	100.0	100.0
Average weekly dollar expenditure per family on food prepared at home	\$ 33.68	36.99	41.75	41.76	46.44
<i>All food</i>					
Food prepared at home	84.4	78.9	74.4	69.8	63.2
Food and beverages in eating places	13.8	19.0	24.3	28.0	33.7
Other food	1.8	2.1	1.3	2.2	3.1
Total food	100.0	100.0	100.0	100.0	100.0
Total average weekly food expenditure	\$ 39.89	46.86	56.12	59.80	73.46

¹ Includes families of two or more persons. The data are from surveys conducted in 8 cities: St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver.

² Quintile is defined in footnote 3, Table 6.3.

Source: Consumer Income and Expenditure Division, Statistics Canada, unpublished data.



Social Security in Canada

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Social Security in Canada

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The central objectives of social security in Canada are an acceptable basic income for all Canadians and a network of publicly supported social and health services.

This chapter is primarily a description of government measures to help Canadians attain a basic minimum of financial security by providing assistance in meeting day-to-day living expenses and essential social and health care services. Therefore, this review does not take into account the efforts of some citizens to look after their own income security needs through private savings and insurance plans, or to involve themselves with various volunteer organizations which provide social and health services.

Historically, church and family groups looked after basic social welfare needs, but early in the 19th century municipalities found it necessary to assume some local responsibility to support those unable to maintain themselves independently. The progressive formation of regional and provincial governments led to increases in the tax base which permitted the funding of more health and welfare services and facilities. Initially, most of the welfare budgets of governments were directed to providing institutional care; and it was not until the latter part of the 19th century that direct financial aid to families was recognized as a need. This type of aid, however, made up only a small part of government welfare budgets.

Provincial legislation introduced during this period provided the necessary authority to meet the institutional needs of "paupers", neglected and abandoned children, unmarried mothers, the mentally ill, and the disabled. By the end of the 19th century, all provinces were funding these areas of care. It was not until the present century that laws were introduced to provide some protection for children and compensation and treatment for injured workers, or for loss of employment. Income support programs aimed at war veterans and the aged, and income supplements for families with children began only during the second quarter of this century.

Children and the Family

The provinces have long been the guardians of children's interests under an umbrella of legislation dealing with child protection, neglected and abandoned children, and adoption. Recently, systems have been set up to monitor child abuse.

Federally, children receive some financial protection through family allowances which are applicable in all provinces. Also, the cost of raising a child is recognized through the federal tax system by income tax exemptions for dependent children and by deductions for child-care expenses incurred by working wives and single parents. Since 1965, Quebec has administered its own provincial income tax system under which the province distributes provincial family allowances, in addition to the federal

allowances, in lieu of income tax exemptions for young children.

In January 1979, the federal government reduced the basic monthly family allowance to \$20 and introduced a new program providing an annual \$200 child tax credit.

Other programs provide specific benefits for families such as the additional funds provided for dependents in allowances paid under the Canada manpower training program. The Canada and Quebec Pension Plans, veterans programs, and workers' compensation programs also include benefits for dependents of beneficiaries.

The special financial needs of single mothers and their dependents received recognition in the second decade of this century through the development of provincial mothers' allowances programs. More recently these needs have been met through provincial social assistance programs. Needy one-parent families make up approximately one third of all cases under these programs. The provinces also provide social assistance to two-parent families and to destitute and disabled individuals, according to need. Social assistance as a general form of provincial income support for the poor was introduced during the early 1950s and was adopted on a cost-sharing basis by the federal government in 1955 under the Unemployment Assistance Act. The coverage of the social assistance caseload was broadened under the Canada Assistance Plan of 1966 to assist the blind, the disabled and single-parent families. These cases previously had been eligible for benefits under the blind, disabled persons and mothers' allowances programs.

Community social services affecting children and family life have been growing rapidly. A full network of children's aid societies or equivalent organizations is being funded through municipal and provincial governments, through the Canada Assistance Plan, under a cost-sharing formula with the federal government. These societies minister to most of the special needs of children not adequately cared for by their own families, providing such services as child assessment and surveillance, child care, child placement and adoption. Particularly in Quebec, a large program of public institutional care for children and infants still exists. There is increasing acceptance of adoption, half-way houses, day care, foster care and child surveillance as preferred types of child support services.

Families have been the target of a wide range of preventive and supportive health and welfare services through partial or total government funding. Through provincial hospital insurance programs, for example, numerous clinical in-patient and out-patient services are now available to all persons needing care and consultation for illness and disability. All basic in-patient care services are provided with a minimum of direct charges to the patient everywhere in Canada. Access to the full range of medical, preventive and therapeutic services is provided under provincial medical care insurance programs.

The social services departments of many hospitals provide patients with direct links to community health and welfare facilities and services. These are intended to enable certain patients to leave the hospital and return to independent living. Facilities include health care centres and

convalescent care institutions, nursing homes and half-way houses, as well as homes for the disabled and community housing for the physically or mentally handicapped. Other social services include home care programs of a therapeutic or supportive nature, and field agencies offering counselling, and casework services to facilitate the integration and rehabilitation of families and family members into the community. Many of these services are delivered by volunteer community-based agencies, or by municipalities, with direct financial support from the provincial government. In most instances the federal government shares equally with the provinces in the cost of providing these services through the Canada Assistance Plan.

Government contributory social insurance was introduced more recently, and now includes benefits for the unemployed, disabled, widowed, orphaned, and elderly retired, as well as federal-provincial programs of hospital and medical care insurance established by legislation within the last two decades. Federal and provincial governments provide an increasing share of the financing of social services and support for community initiatives in developing new programs.

Originally, federal responsibility for social security was limited to immigrants, the native peoples, and veterans. In 1927, however, the federal government began sharing the costs of social security with the provinces through the introduction of old age pensions. During the depression of the 1930s, in order to provide direct relief to the poor and the unemployed, the federal government provided emergency funds to the provinces and municipalities. After World War II, the federal government began to develop the social security system on a much broader basis. These initiatives (for example, family allowances and old age security) were taken in close consultation with the provinces which in many instances delivered the cost-shared benefits and services to those who needed them. Through this arrangement, the previous strong role of the municipalities was displaced by the provinces, except where the larger municipalities administered or extended the benefits and services provided by the provinces.

An important new phase in federal-provincial arrangements for funding health insurance and extended care services came with the introduction of block-funding in the mid-1960s. Under block-funding, first introduced in Quebec, federal transfers were determined on the basis of an annual formula rather than on a proportional sharing of costs of programs delivered.

The federal government recently extended the concept of block-funding to several federal-provincial cost-shared social security programs, and since April 1977, all funding for hospital insurance, medical care insurance, and care provided in extended health care facilities has been determined on this basis. The present formula is based on changes in the population and the Gross National Product.

The provincial governments pay about one third of the cost of existing social security programs. As the programs in place change, certain trade-offs take place between governments and programs. For instance, the growth of benefits to the disabled and elderly under the Canada and Quebec Pension Plans has tended to reduce the demand for financial assistance, which otherwise would have increased under the federal guaranteed income supplement to the old age security program, or under cost-shared provincial social assistance programs.

Because of the variety of programs, the involvement of all levels of government and certain inconsistencies in welfare

planning, some inequities have occurred in the development of the social security system in Canada. Steps to correct these include the elimination of extended periods of residence as eligibility requirements for social security programs, a shift from charity for selected poor members of the community, as provided in earlier days, to programs of income support for those in need, and income insurance for the working population. The following sections treat some government actions in areas of particular concern, including support for children and families, maintenance of income for persons in the labour force, and support and services for the aged, the sick and disabled, and the indigenous population.

The Working Population

Primary income protection for the working population is provided through the unemployment insurance program, the Canada and Quebec Pension Plans, and provincial workers' compensation programs.

Under the revised Unemployment Insurance Act of 1971, workers are protected against continuing unemployment for a specified time, while those in areas of high unemployment are eligible for extended benefits. Female contributors are entitled to maternity leave benefits during the period prior to and following confinement, and payment of temporary disability benefits may be made to contributors incapacitated by prolonged illness.

Contributors to the Canada and Quebec Pension Plans are eligible at age 65 for retirement pensions based on the level and period of contribution, but a contributor may defer retirement until age 70. In the case of the death of a contributor with a specified minimum period of contributions, the spouse and surviving children are eligible for survivor's benefits. In the event of disability prior to retirement, there are benefits for disabled contributors and their families.

Many workers are also protected by workers' compensation from the loss of income because of temporary or permanent disability. In the case of fatal accidents, surviving dependents may also be eligible to receive pensions.

In addition, the federal government and the provinces attempt to reduce unemployment through various job creation and employment opportunity programs. The Canada manpower training program provides workers and unemployed persons with financial support while they acquire new work skills. The Canada manpower mobility program provides temporary financial support to enable job seekers in areas of high unemployment to travel to other areas to find employment suitable to their skills.

Through the Vocational Rehabilitation of Disabled Persons Act, the federal government has agreed with all provinces except Quebec to share in the costs of provincial programs offering a wide range of medical, vocational and social rehabilitation services to persons temporarily unemployed because of disability or illness. Quebec provides similar services independently.

Workers with insufficient income for basic needs are eligible for income support or supplements to social security benefits under various provincial social assistance programs. In Saskatchewan, for example, the Family Income Program is specifically designed to supplement the income of working families whose earnings are insufficient to meet basic living expenses.

The Elderly

For working people in Canada, personal savings used to be the only way to ensure continuing income after retirement. Proclamation of the federal Old Age Pension Act in 1927

gave official recognition to the need to help the elderly who found themselves without sufficient savings. The provinces introduced parallel legislation to administer the provisions of the Act which provided for federal cost-sharing with the provinces of a basic monthly pension to resident Canadians 70 years of age and over with little or no personal income.

In 1952, a universal pension to all residents 70 years of age and over was authorized through the Old Age Security Act, to be funded and administered by the federal government. This program was supplemented by the Old Age Assistance Act which provided for federal cost-sharing in provincial programs of basic income support for needy persons 65-69 years of age. In 1965, an amendment to the Old Age Security Act authorized a gradual reduction in the age of eligibility to 65, and in 1966, the Act was further modified to provide a Guaranteed Income Supplement to pensioners on the basis of an income test. Since October 1973, old age security benefits have been indexed quarterly to help maintain the purchasing power of the pension. In 1975, a spouse's allowance was introduced by the federal government to provide additional family income for old age pensioners with spouses between the ages of 60 and 64 and without personal income.

In 1966, the federal government also introduced a program of contributory retirement pensions under the Canada Pension Plan; at the same time, Quebec enacted parallel legislation under the Quebec Pension Plan. The plans are integrated sufficiently to permit a person to elect where to reside after retirement and to receive a consolidated benefit based on his or her cumulative contributions to one or both of these programs. Both programs are funded by equal contributions from employee and employer. The self-employed pay both components. Since 1974 these benefits have been indexed annually. By the end of 1978, approximately 850,000 persons were receiving retirement pensions under these two programs.

Many elderly persons also require some type of quasi-institutional environment or full institutional care. In 1978, 1,435 homes with 86,910 beds were available to meet these needs. Under the Canada Assistance Plan, the federal government shared equally with the provinces (until April 1977) expenditures for institutional care of the aged who were not fully protected through the old age security program. Since that date, federal funding has been provided under the extended health care provisions of the Established Programs Financing Act. The Canada Assistance Plan still provides for sharing of costs of providing personal comforts, special nursing care, dental care, cost of drugs and others. Additional income supplements are provided by some provinces for elderly persons with low incomes.

Although the elderly constitute less than 10% of the total population, they account for more than one third of the hospital days of care in Canada, and a somewhat lower proportion of medical care services. Regular medical and hospital care services for the elderly were, until 1977, fully provided for under the federal-provincial cost-sharing arrangements for health insurance. Since then, federal block-funding has been provided under the Established Programs Financing Act.

Other benefits accrue to persons over 65 years of age. They are allowed an additional personal exemption in the federal income tax structure, and several provinces provide programs of free drugs and other specialized health services. A number of communities also offer reduced rates for transportation, recreation and other community services.

One federal program of particular interest is New Horizons. Through this program, groups of elderly persons may receive financial support to promote social and recreational activities and other projects judged to be for the benefit of their community.

Medical and Hospital Care

Early community initiatives in public sharing of the costs of health care came through the introduction of provincial per diem grants to hospitals, the development of voluntary health insurance as represented by the Blue Cross and Blue Shield plans, as well as co-operative programs undertaken at the local level.

By 1961, all provinces and territories had enacted legislation matching the federal Hospital Insurance and Diagnostic Services Act to provide for a universal program of hospital care in Canada. A similar development occurred following promulgation of the federal Medical Care Insurance Act covering doctors' services. Initially, federal cost-sharing of hospital insurance favoured the less affluent provinces, where federal cost-sharing dollars for medical care insurance expenditures were calculated on the basis of the population in each province. Again, since April 1977, cost-sharing has been in the form of block-funding.

In 1977-78, the total cost of health insurance programs in Canada was \$8.2 billion. Some indication of the impact of these programs on the health of the population over the last 17 years may be inferred from the increase in the life expectancy of the average Canadian since 1961. During the period 1961-76, the life expectancy at birth for males increased approximately two years, and that for females by three and one half years.

Veterans and the Disabled

The War Veterans Act of 1918 provided pensions to veterans with war-related disabilities, and in 1930, allowances were extended to all veterans who were unable to maintain themselves independently in society.

Blind persons were the next group to be covered (1937), and in 1952 this protection was extended, on a cost-shared basis with the provinces. In 1955, financial support for disabled persons of working age was introduced on a similar basis.

Since 1966, cases involving disabled persons in need have been shifted to the wider coverage provided by provincial social assistance programs, with federal support through the Canada Assistance Plan. In some provinces the disabled are also eligible for supplementary income support through provincial programs such as the Guaranteed Available Income for Need Act (GAIN) in British Columbia. This program provides for a basic income for persons 60 and over, and for handicapped persons aged 18 to 59. In January 1978, an eligible handicapped person could receive \$265 a month under this program.

Some costs of medical rehabilitation are shared through federal-provincial agreements under the Vocational Rehabilitation of Disabled Persons Act. Workers' compensation also provides for hospital and medical care to help injured workers return to their jobs.

Since 1970, disabled contributors to the Canada and Quebec Pension Plans forced into premature retirement have been eligible for disability pensions, including allowances for their dependents.

The Indigenous Population

The Indian and Inuit populations of Canada have been the responsibility of the federal government since Confederation,

and as a result, programs for the health, welfare and maintenance of registered Indians are funded and co-ordinated primarily by the federal government. On the health side, this includes Indian hospitals and nursing stations, and health centres located primarily in remote areas where the bulk of the indigenous population resides. In addition, all Indians and Inuit have full access to health insurance benefits applicable to residents of the province or territory in which they live.

There is provision for federal social assistance payments to registered Indians unable to maintain themselves on their reserves through lack of income. Child welfare services, day care, family counselling, and employment-related training for adults are also provided.

Growth of Government Social Security Expenditures

The development of social security programs should be studied in the context of increased expenditures. At the time of Confederation, social security was primarily the domain of private organizations; however, governments have become increasingly responsible for its funding. In 1878, for example, Ontario spent more than \$1 million on "social welfare", approximately one tenth of it in the form of "outdoor" relief — direct cash payments to families — and by 1927, expenditures by all levels of government on social security were \$99 million. Since then, government expenditures on social security have increased annually, except for a brief period early in the Second World War.

From the end of World War II to 1960 the Canadian population grew rapidly, particularly in the youngest (under 25 years of age) and the oldest (over 65) age groups. Largely in response to the rapid growth in these two groups, social security expenditures increased sixfold. Between 1944-45 and 1949-50, for example, payments for veterans' rehabilitation and the introduction of family allowances pushed social security expenditures from \$308 million to just over \$1 billion, while in the 1950s social security expenditures grew by over one and a half times, with the introduction of universal old age security accounting for most of the increase. During this period, however, personal income and gross national expenditure increased by only slightly more than 50% respectively, and direct taxes by less than 30% (*Chart 7.3*).

By contrast, population growth in Canada in the next 15-year period (1961 to 1976) was less pronounced (*Chart 7.5*). During this time the population under 20 years of age increased by only 9% although the growth of the elderly population was still high at 43%. The maturing of children born during the baby boom and their progression into the labour force during the late 1960s coupled with high levels of immigration, produced a 38.2% increase in the population between the ages of 20 and 64. The percentage growth in social security expenditures¹ (288%) during this period was paralleled by the increase in direct taxes (319%) reflecting the rapid growth of contributory health and social insurance programs (*Chart 7.3*).

Between 1961-62 and 1976-77, social security expenditures² grew from \$3.5 billion to \$27.6 billion, with health expenditures, old age security and unemployment insurance accounting for almost two thirds of this increase (*Table 7.1*). This growth represents a threefold increase¹ in per person expenditure on social security, from \$259 in 1961-62 to \$786 per person in 1976-77 (*Chart 7.5*).

The growth of government social security expenditures in Canada has been affected by a combination of factors. The

introduction of new social programs and the broadening of the scope of others have had a direct effect on total expenditures. Similar effects result from changes in the size of various population groups. For example, the increase in the proportion of the population over 65 years of age has had a direct influence on the magnitude of expenditures, although it is interesting to note that while the number of beneficiaries of family and youth allowances declined by 3% between 1971-72 and 1976-77 (*Table 7.7*), expenditures on that program increased by over 210% in the same period. This results from direct increases in benefits and indexing, which are designed to maintain purchasing power, but can also increase program expenditures even when the population of beneficiaries remains constant or declines.

Some other government social security programs, particularly unemployment insurance and provincial social assistance programs, are more responsive to short-term shifts in the employment market and in the stability of the economy.

Redistribution Mechanisms of the Social Security System

It is important to recognize in assessing the redistribution effects of Canada's social security system that principles of redistribution vary according to the types of programs. One type is the social insurance program, in which the objective is to spread the costs across the total population at risk, although only a proportion of contributors is in receipt of benefits at any given time.

In other programs, broad sectors of the population, such as the aged or children, are recognized as having special needs, and these sectors become eligible for special services, income supplements, or support. In addition, certain groups — such as veterans or Indians — obtain special support from public agencies because of particular needs which do not apply to the general population.

In the social insurance field, the provincial hospital and medical care programs, with very minor exceptions, are universally applicable. At any one time, only a small proportion of the population at risk is actually receiving direct services, and the need for services varies from individual to individual. Similarly, in the Canada and Quebec Pension Plans, the sharing of costs is spread across the entire group of working individuals who contribute to the pension funds. Unemployment insurance and workers' compensation are funded on the same principle.

Family allowances and child tax credit programs are structured to provide basic income supplements to all families with children, although the amount of net disposable benefits varies according to the rate applicable to the taxpayer claiming the child as a dependent.

In the case of old age security, the basic benefit, which is taxable, is available to all persons over the age of 65 who meet minimum residence requirements. The guaranteed income supplement, however, and the spouse's allowance are awarded strictly on the basis of the income-tested need of individual recipients or families.

The basic social assistance programs of the provinces operate in response to financial need as defined by legislation. The needs of the family or individual are assessed against the designated personal financial resources available to the applicant. A social assistance payment, if applicable, is then calculated as the difference between the established needs for basic and special living expenses within limits set up by the individual provinces and the

available income. At present, several provinces provide an income-tested tax credit and a rebate for shelter and other living expenses as needed.

Footnotes

¹In constant dollars.

²In current dollars.

TABLE 7.1
Summary of expenditures on social security programs in Canada, 1956-57 to 1976-77¹

	1956-57	1961-62	1966-67	1971-72	1976-77
	<i>(millions of current dollars)</i>				
Health programs ²					
Hospital insurance and diagnostic services	..	605.1	1,162.5	2,407.9	5,335.0
Medical care	..	..	..	1,172.4	1,921.2
Other health programs	119.0	479.7	829.4	1,235.6	2,707.0
Total	119.0	1,084.8	1,991.9	4,815.9	9,963.2
Old Age Security	419.9	686.7	1,137.0	2,205.4	4,436.6
Canada and Quebec pension plans	..	..	0.1	189.6	1,195.4
Unemployment insurance	305.1	409.2	352.6	1,871.8	3,479.8
Canada Manpower Training	..	..	52.3	169.3	259.7
Workers' Compensation	69.6	94.2	156.4	238.0	623.5
Family and youth allowances ³	397.5	520.8	621.8	637.1	1,983.6
Veterans' programs	171.3	253.2	299.5	308.6	576.9
Programs for the blind and disabled	15.7	41.2	59.4	25.5	48.1
Provincial social assistance programs	11.5	175.8	307.5	989.2	1,808.4
Federal-provincial social services	..	..	..	443.9	1,332.0
Provincial welfare programs	..	164.0	266.1	267.6	1,322.1
Municipal social security	..	109.2	127.8	200.8	427.3
Registered Indians	..	..	..	53.2	113.4
Total expenditures	..	3,539.0	5,372.2	12,415.7	27,569.4

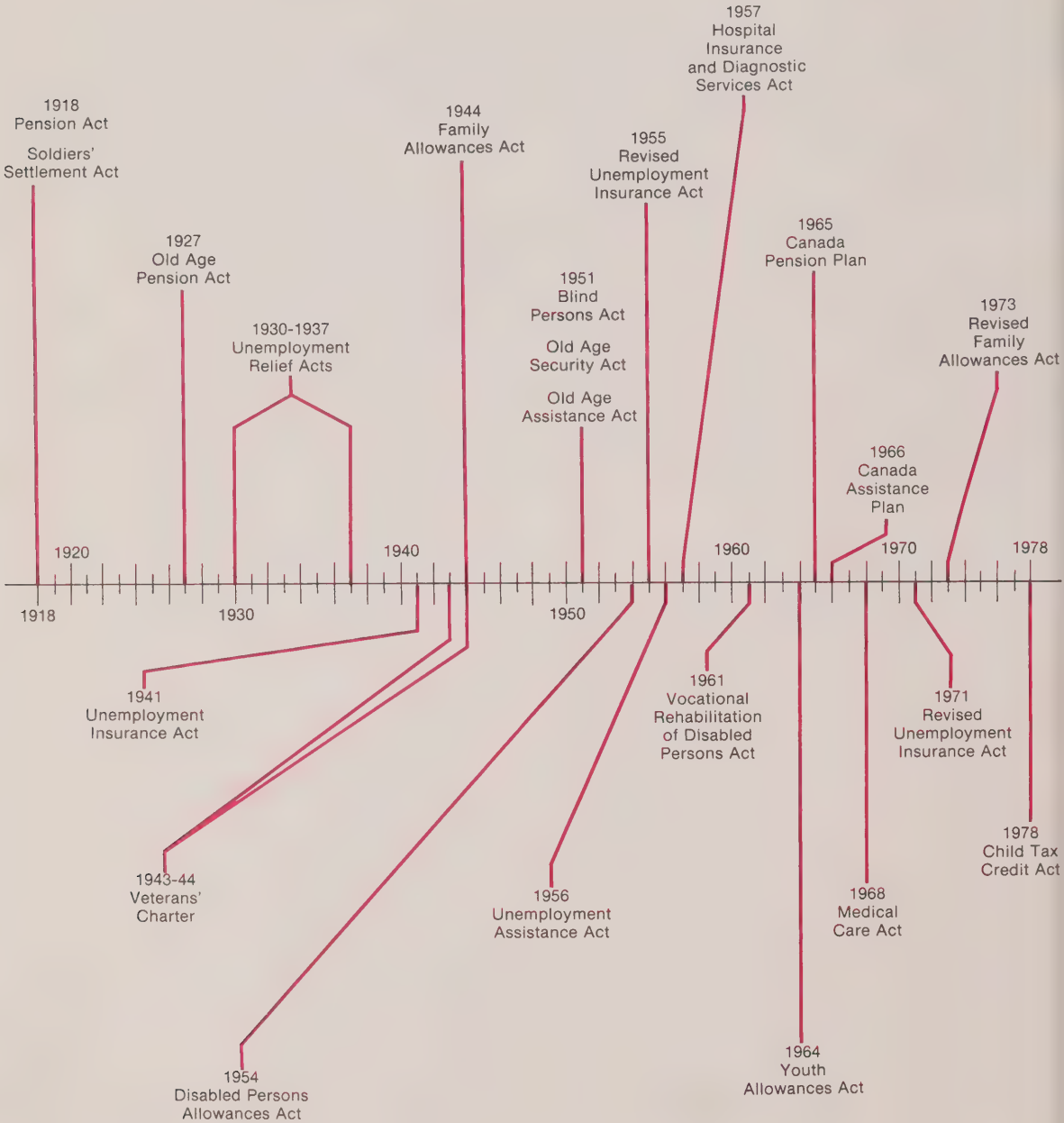
¹Data are for fiscal years (April 1 to March 31).

²Does not include municipal payments for health services.

³Includes Quebec schooling allowance, 1964-74.

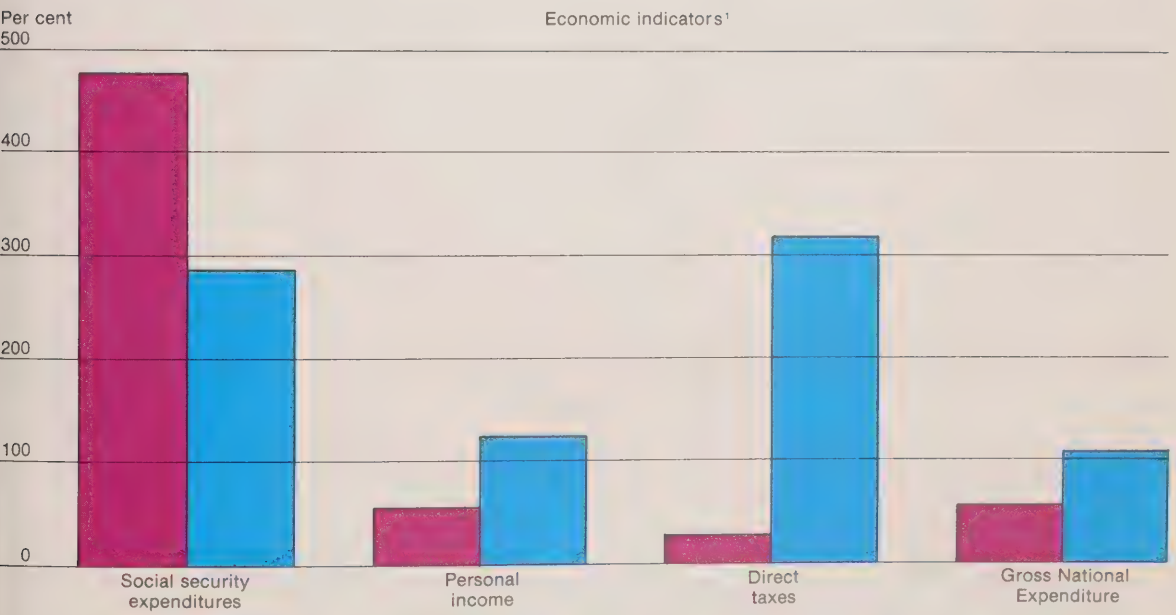
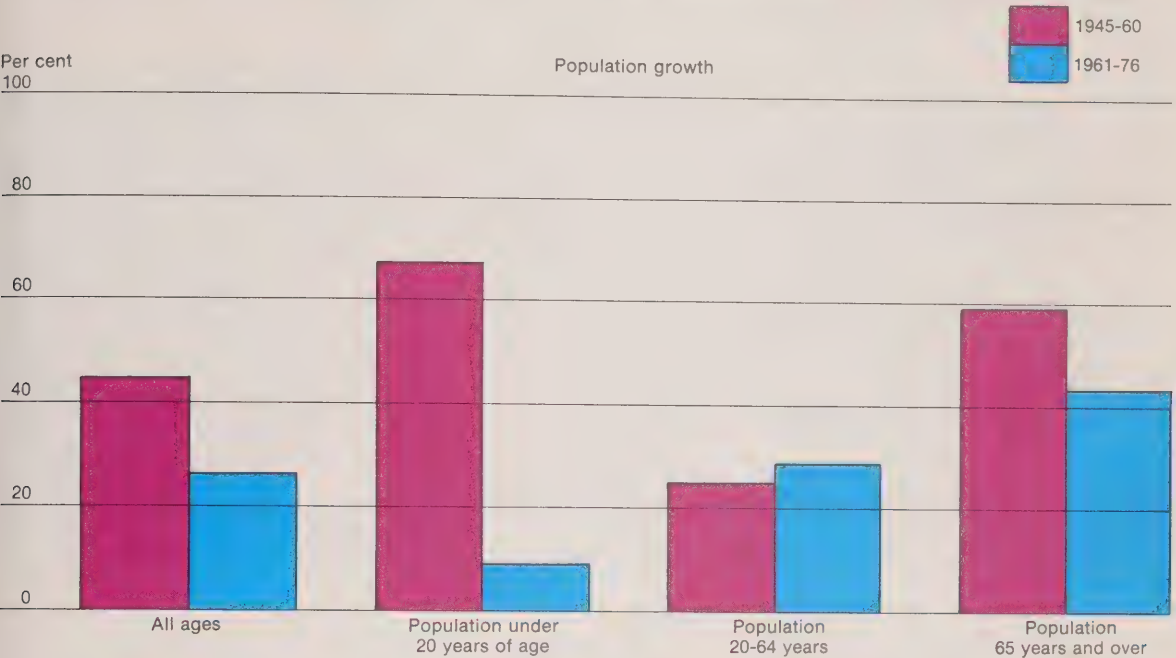
Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

CHART 7.2
Major federal social security legislation, 1918-78



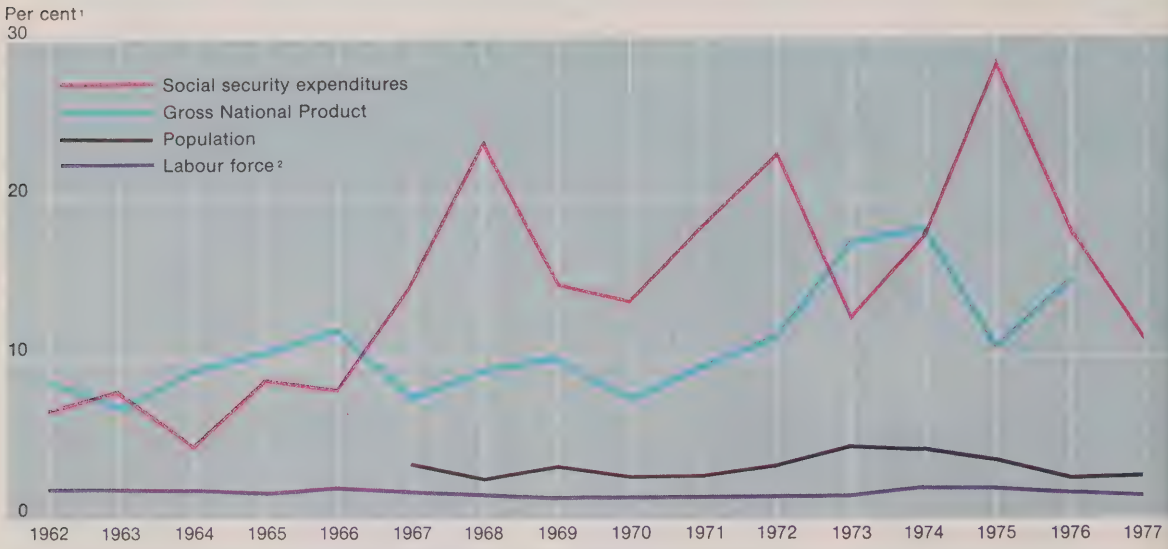
Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

CHART 7.3
Changes in population and selected economic indicators, 1945-60 and 1961-76



¹Increases calculated using constant dollars.
Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

CHART 7.4
Annual growth of total social security expenditures, Gross National Product, population and labour force, 1961-77

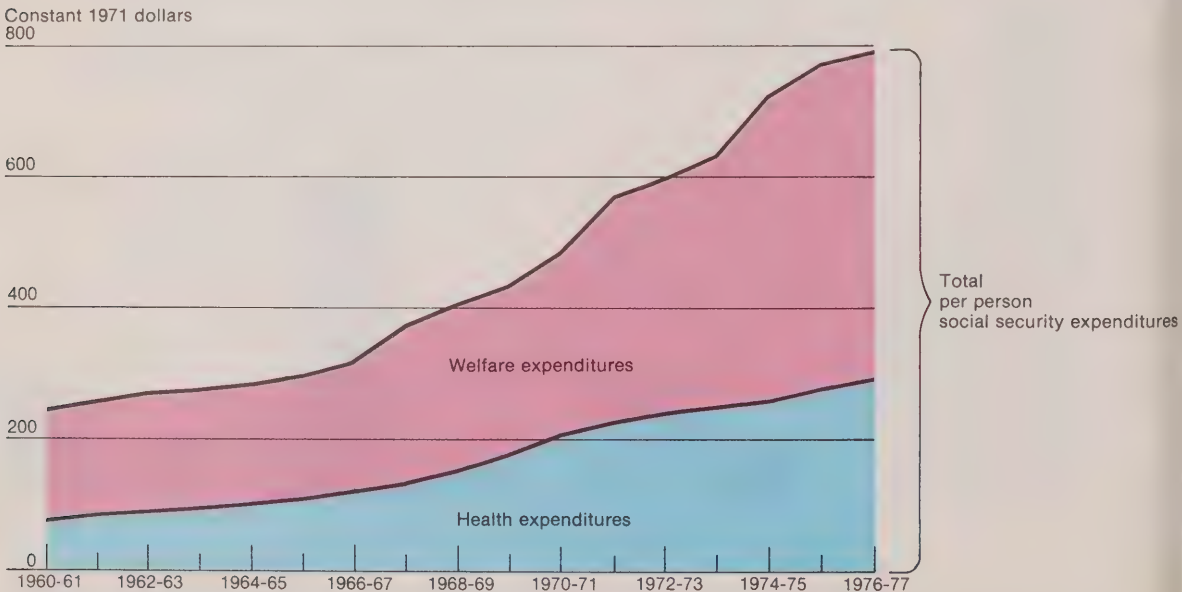


¹Data represent percentage growth (in current dollars) from the preceding year.

²Labour force figures prior to 1966 are not comparable with data for 1966-77.

Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

Chart 7.5
Expenditures per person on all social security programs, 1960-61 to 1976-77¹



¹Data are for fiscal years (April 1 to March 31).

Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

TABLE 7.6
Provincial per person expenditures on social security as a percentage of the national average, 1976-77¹

	Health programs	Welfare programs	All social security programs
		<i>per cent</i>	
Newfoundland	116.5	86.8	105.6
Prince Edward Island	131.7	77.0	111.5
Nova Scotia	108.1	88.2	100.8
New Brunswick	122.5	82.2	107.7
Quebec	106.2	99.5	103.8
Ontario	93.8	101.8	96.8
Manitoba	102.5	103.9	103.1
Saskatchewan	97.6	91.3	95.3
Alberta	76.0	107.1	85.4
British Columbia	105.3	103.0	104.4
Yukon	117.7	88.8	107.1
Northwest Territories	77.9	135.8	99.2
		<i>current dollars</i>	
Per person expenditures on social security for all Canada	754	439	1,193

¹ Data are for the fiscal year (April 1 to March 31).

Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

TABLE 7.7
Beneficiaries of selected social security programs, 1961-62 to 1976-77¹

	1961-62	1966-67	1971-72	1976-77
	<i>thousands</i>			
Family and youth allowances ²	6,491	7,451	7,527	7,277
Old age security	1,018	1,202	1,746	1,989
Canada Manpower Training program	...	...	384	358
War veterans' allowance	76	88	79	93
Canada and Quebec pension plans				
Retirement beneficiaries	...	5	280	731
Disability and survivors beneficiaries	...	...	168	344
Provincial social assistance programs	684	...	1,379	1,323

¹ Data are for fiscal years (April 1 to March 31).

² Represents the number of children receiving benefits and includes Quebec schooling allowances, 1964-74.

Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

TABLE 7.8
Total government health program expenditures¹, by province, 1961-62 to 1976-77²

	1961-62	1966-67	1971-72	1976-77
	<i>per cent</i>			
Newfoundland	2.4	2.5	1.8	2.1
Prince Edward Island	0.4	0.4	0.4	0.4
Nova Scotia	3.4	3.5	3.2	3.2
New Brunswick	2.9	2.7	2.4	2.4
Quebec	25.0	28.8	27.7	27.0
Ontario	37.6	34.1	39.0	36.6
Manitoba	4.9	4.3	4.4	4.6
Saskatchewan	6.7	6.1	3.8	3.7
Alberta	7.7	8.5	8.1	8.6
British Columbia	8.8	8.8	9.0	11.0
Yukon	0.1	0.1	0.1	0.1
Northwest Territories	0.1	0.2	0.1	0.3
Total	100.0	100.0	100.0	100.0
	<i>millions of dollars</i>			
Total expenditures for all Canada	1,151.2	2,060.6	4,883.8	10,137.0

¹ Includes municipal expenditures on health services.

² Data are for fiscal years (April 1 to March 31).

Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

TABLE 7.9
Total unemployment insurance payments, by province, 1961-62 to 1976-77¹

	1961-62	1966-67	1971-72	1976-77
	<i>per cent</i>			
Newfoundland	4.7	5.6	3.7	5.7
Prince Edward Island	0.8	0.9	0.5	1.0
Nova Scotia	5.3	5.2	3.7	4.7
New Brunswick	4.8	4.9	3.8	5.8
Quebec	29.7	31.8	30.6	39.1
Ontario	30.0	30.6	32.2	26.0
Manitoba	5.0	3.3	3.5	2.0
Saskatchewan	3.4	2.5	2.7	1.5
Alberta	5.5	3.7	6.0	2.0
British Columbia	10.8	11.5	13.4	11.9
Yukon	—	—	—	0.2
Northwest Territories	—	—	—	0.1
Total	100.0	100.0	100.0	100.0
	<i>millions of dollars</i>			
Total expenditures for all Canada	409.2	352.6	1,764.2	3,108.3

¹ Data are for fiscal years (April 1 to March 31), and do not include special benefit payments.

Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

TABLE 7.10
Proportion of Old Age Security and Old Age Assistance recipients, by province, 1961-62 to 1976-77¹

	1961-62	1966-67	1971-72	1976-77
		<i>per cent</i>		
Newfoundland	2.2	2.1	1.9	1.9
Prince Edward Island	0.8	0.8	0.7	0.7
Nova Scotia	4.7	4.5	4.2	4.0
New Brunswick	3.6	3.4	3.1	3.1
Quebec	22.5	23.0	23.9	24.4
Ontario	34.9	35.8	36.8	36.6
Manitoba	6.0	5.8	5.5	5.4
Saskatchewan	6.3	5.8	5.4	5.2
Alberta	6.7	6.7	6.8	6.8
British Columbia	12.2	11.9	11.7	11.9
Yukon	0.1	—	0.1	0.1
Northwest Territories	—	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0
		<i>thousands</i>		
Total recipients in all Canada	1,017	1,202	1,746	1,989

¹ Data are for fiscal years (April 1 to March 31).

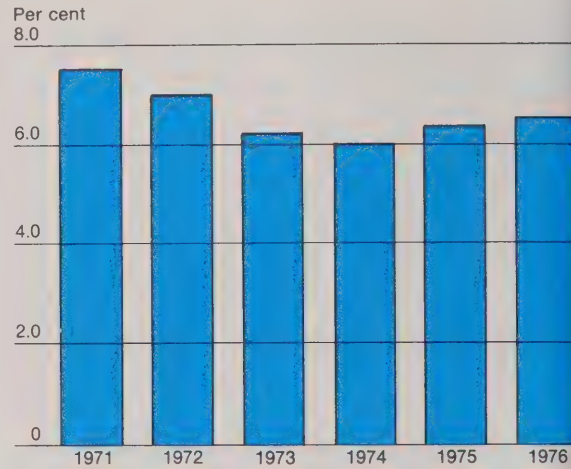
Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

TABLE 7.11
Old Age Security pensioners receiving guaranteed income supplement, and comparison with Canada and Quebec pension plan recipients, 1971-77

	Old Age Security pensioners, receiving guaranteed income supplement			Canada and Quebec pension plan recipients of a retirement pension as a ratio of Old Age Security pensioners
	Full supplement	Partial supplement	Total	
	<i>per cent</i>			<i>ratio per 100</i>
1971	27.5	22.5	50.0	12.8
1972	27.3	28.0	55.3	15.9
1973	26.6	31.2	57.8	18.7
1974	25.7	32.2	57.9	22.0
1975	24.0	32.5	56.5	25.6
1976	23.0	32.6	55.5	31.1
1977	21.5	33.8	55.3	34.9

Source: Social Security; National Programs, Catalogue 86-201, 1978.

CHART 7.12
Proportion of the Canadian population who are Canada Assistance Plan beneficiaries, 1971-76



Source: Social Security; National Programs, Catalogue 86-201, 1978.



Leisure

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Leisure

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Leisure is hard to measure

... which wouldn't matter except that the use and abuse of leisure could become society's major preoccupation by the year 2000. A civilization which has spent the past century trying to work itself out of a job doesn't yet know how to spend the time saved.

But what is leisure? The word means different things to different people. There's the hero of the old pop song "Lazybones", whose friend speculates:

And when you go fishin'
I bet you keep wishin'
The fish won't bite at your line.

And there are the dancers and an old-fashioned Newfoundland "time", as described by Ray Guy:

The windows were up, with the snow blowing in, the door was open, the stove was let die down but, whenever the fiddler stopped, the men would lurch for the door and fall across the bridge rail outside with the steam flying out of them in the frost. And the women, panting for breath with their hands to their bosoms, would stagger off toward the kitchen to dig a cup in the water barrel. They would shake their heads at the other women in the kitchen and puff their cheeks and say "Oh mygod! I'm just about dead."¹

Even where two activities look alike, one may be work and the other leisure, or each may be a mixture of the two. Take the case of the woman reading "The Temptations of Big Bear" for enjoyment and the woman reading it because she is doing a term paper on the works of Rudy Wiebe. Or consider the man who grows flowers because he likes growing flowers and the man who grows them to sell to the flower shop downtown. Where does the work end and the leisure begin, or vice versa? And who cares?

Nobody cares... in theory. Leisure, according to the dictionary, is "free time; time at one's own disposal". So if I want to use my free time "moonlighting" in a second job and you want to use yours moonlighting with a member of the opposite sex — whose business is it?

A lot of people, of course, make it their business. My employer or union might have something to say about my working at some other job. And there are still social and legal constraints on what you may do, where, and with whom, even though the government has withdrawn from the bedrooms of the nation. Sexual behaviour, it is true, has become somewhat freer recently, but a number of pastimes have become more difficult because of rising costs or shrinking space. A family may go camping if they can afford the equipment — but not on my lawn, or beside a superhighway, or in large sections of our national parks. And cross-country skiers and snowmobilers may have different ideas about priorities on backwoods trails. All of which is to say that doing your own thing is not always the done thing.

James A. Garfield, during the Presidential campaign of 1880 said:

We may divide the whole struggle of the human race into two chapters: first, the fight to get leisure; and then the second fight of civilization — What shall we do with our leisure when we get it?

The simple answer to Garfield's question is to say: Enjoy it. In fact, a French scholar, J. Dumazedier,² insists that leisure is not leisure if it is not hedonistic, that is, devoted to pleasure. He adds three other characteristics which must be present if an activity is to qualify as leisure:

Leisure results from a free choice;
Leisure has no financial, useful or ideological end;
Leisure meets the needs of the individual, rather than those of society.

That kind of definition makes it almost impossible to measure leisure, but it does help us make some distinctions which might be useful later. A girl who collects stamps because they are attractive and interesting is engaging in leisure; the moment she thinks of a profit to be made by selling them, she has crossed the leisure line. Getting drunk in a tavern seems to meet all Dumazedier's criteria, even though society may disapprove of the drunkard.

Society's interest in measurement is haphazard and uncertain. A stroll along a rural highway will not be measured; the same stroll in a national park may be, and may be classed as hiking. When we look at our highways, there is a mixture of use. Highways carry commerce and business traffic. But they also carry people who are out for a drive, or who are driving to get to a place where they will indulge in a leisure activity. The activity may include visiting friends or relatives, which may be a duty or may be pleasure — is the first use work and the second use leisure? Each passenger may see a trip in a different light — and the driver may wish they had all stayed home!

Some people jog for fun: others because they just must take off 20 pounds. Some people walk to work; can that activity be divided into leisure and non-leisure by subtracting the time it would have taken to get to work by car or bus? How many angels can dance on the head of a pin — and are they doing it because they like dancing? These appear to be hair-splitting arguments but they become important when we recognize that the federal government spends close to \$1 billion a year to support cultural activities which, presumably, it thinks are a socially desirable form of leisure.

Leisure has always been society's business as much as the individual's. At least society has made it its business. Peasants in 17th century France had more than 150 non-working days a year, but the great majority of those were given over to religious obligations, or were days of enforced idleness because the ground was frozen and could not be worked, or because the peasant was sick. Dumazedier's free choice is missing; so are his other elements of leisure. In modern Western society, the claims of organized religion are very much diminished, and frequently ignored. But society's claims are still strong; society looks with suspicion at anyone who consistently "wastes" non-working time, even in such a harmless pursuit as stamp-collecting. When Garfield talked of the fight to determine what we shall do with our leisure, he was clearly not thinking of turning America into a nation of lotus-eaters. Yet lotus-eating would meet Dumazedier's criteria.

Society's role in leisure has moved a long way from prohibition to encouragement. There is still, though, the age-old belief that the Devil finds work for idle hands. Until recently, this was reflected in a desire to keep kids off street corners — and out of pool rooms, amusement arcades and other aids to a misspent youth. Now, society searches for antidotes to excessive television-watching, drugs and drunken driving. For those who have reached voting age, society uses taxation and legislation, both positively and negatively, to encourage adults into socially desirable leisure. Liquor and cigarettes are taxed; university night course fees are a tax write-off; government lotteries are advertised, or given free television coverage; floating crap games are raided.

Governments today are putting their major effort into persuading people to use their leisure "wisely", not "wastefully"; they use the seduction of grants and facilities to lead people into approved leisure paths. The leisure game has become a serious one, in which billions of public and industry dollars are staked (alas for Dumazedier's definitions) in an attempt to influence the leisure choices of Canadians. That spending may largely determine the characteristics of a Canadian society with increasing amounts of non-work time to devote to leisure. Which is why we try to measure the effects by collecting statistics on who does what, how, when, where and why — and with whose money.

Leisure and the state

"A god gave us this leisure." (Virgil)

Gods have gone out of fashion since Roman times but the state has not. As suggested in the introduction, leisure has become a political preoccupation, although for most governments the accent is on a culture and recreation policy, not on a leisure policy. Having legislated shorter and shorter working hours over the past 100 years, governments, whether taking the initiative or responding to pressure, have become involved in leisure for motives which frequently are at odds with the leisure philosophy implicit in Dumazedier's definition.

Cultural activities are usually seen as "good" forms of leisure but the motives for offering culture to the populace are mixed, witness statements by three party leaders during the 1979 election campaign: In what the Canadian Conference of the Arts called "his first major statement on arts and culture (only five days before calling the federal election) Prime Minister Trudeau said "...it's no more possible for any country to be without a cultural policy than it is to be without an industrial policy... I hope that government at all levels — federal, provincial, and municipal — will take this cultural reality into account." Conservative leader Joe Clark said his party would implement "measures to encourage Canadian culture as an industry which can bring both income and identity to this nation". The NDP called for increased Canadian control of book publishing and distribution.

Clearly, culture is seen as having a role far broader than helping the citizen pass time agreeably.

Culture as national identity

Culture is much broader than leisure when it is equated with the whole life, the whole personality of a nation. In a limited sense, though, it is seen as a "high-class" form of leisure, a desirable manifestation of national values. Culture is usually thought of in terms of books, films, theatre, dance (ethnic or classical as opposed to disco) and music (again in its ethnic or classical forms). In a country which, like Canada, is

struggling to establish a national identity, these leisure activities apparently become worthy of subsidy as symbols of nationhood. When the struggle is complicated, as in Canada, by the pressures of powerful outside cultural influences (American, British and French in particular) and by internal differences in cultural origins, the political importance of culture transcends the value of culture as pastime.

A *Quill and Quire* article commented:

Much of the Canadian material in the media is specifically "cultural" or "educational": not very attractive qualities for leisure activities.³

Sport is not usually regarded as cultural and yet it is so much a part of society's value system at times that it seems difficult to relegate it to something lower on the values scale. The Canadiens hockey team, as an interesting example, is the subject of a play by Rick Salutin, which clearly comes under the cultural category. Leisure itself is not seen as a unifying factor and attracts much less attention than culture. The first edition of "Colombo's Canadian Quotations", for example, has no quotes under the headings of "leisure" or "recreation"; it has 32 under "cultural" or "culture".⁴

Culture as an industry

Watching television, listening to radio, reading books and magazines are all popular leisure activities of Canadians. The problem, from the point of view of Canadian industry, is that much of the content of these activities is made outside Canada. Government shares this concern, whether the books and programs are high class or low class. There is a heavy drain on Canada's balance-of-payments whether it is to pay for *Playboy*, John Updike novels, or a *National Geographic* television special. The range of workers under the cultural umbrella is a wide one, including loggers, paper processors, performing artists, recording technicians and television producers. If Canada can compete with the cultural industries of the United States and Europe, employment opportunities should repay the investment of subsidy dollars.

It is here, though, that a conflict between culture and leisure shows itself. Many Canadians prefer the culture of other countries to the home-produced variety. And the mass-market production of entertainment gives a great advantage to the United States, with its huge basic market and its spin-off markets in many countries around the world. The dilemma of federal and provincial governments is how to coax or cajole Canadians into buying made-in-Canada culture. And they have chosen to do it so far without interfering with the free choice of the Canadian in search of leisure entertainment.

The leisure support tripod

Some idea of the leisure support by various levels of government is given in Chart 8.26 but there are many areas of overlap.

Centennial pools, for example, were built with federal aid but are maintained by municipalities or provinces. A theatre may be built by a province or municipality but the touring group playing there could be subsidized by federal or provincial funds, or both. Book publishing is an area where the author and the publisher may have received Canada Council grants; and where a publisher in Ontario, for example, may have had a direct grant from the Ontario Arts Council and a stimulus to his sales from the Wintario "half-back" program; or where an author may have won a cash prize from the City of Toronto for a book on that metropolis.

In general, the federal government seems to favour high-budget activities, with broadcasting taking the lion's share.

The CBC alone accounted for two thirds of the \$800 million spent by the federal government on cultural activities in 1976-77. Chart 8.28 illustrates one description of cultural activity, that is "the performing, visual and creative arts — as well as institutions whose purposes include the preservation and dissemination of cultural heritage".⁵

The two thirds of the federal subsidy going to the Canadian Broadcasting Corporation is a clear recognition by government that it cannot expect private industry to meet all Canada's leisure needs. Private industry in the leisure world is frequently multinational, which usually means foreign-based, something which government would like to change on both the nationalist and industrial grounds mentioned earlier. Progressive Conservative cultural affairs co-ordinator David MacDonald, on the eve of his party's 1979 election victory, made proposals designed "to increase the Canadian share of our \$1.2 billion domestic market for books, records and films from 8% to 20%". On the broadcasting front, there is the Canadian Radio and Television Commission to nudge the private broadcaster to do some things which may detract from his profit, that is, include a higher percentage of Canadian content than might be commercially desirable. Rather than erect jamming stations and prohibit the airing of American and other foreign programs, government is content to guarantee some outlet for Canadian talent.

In the case of broadcasting, the federal government did not rush in where commercial angels feared to tread. The early involvement was as much in response to pressure from the Canadian Broadcasting League as it was from any desire to rule the airwaves or to enter the cultural arena. Even some 20 years later, Bernard Ostry tells us in his *The Cultural Connection*,⁶ the Massey Commission report was carried into the House by the Prime Minister using a metaphorical pair of tongs. And the establishment of the Canada Council, in 1957, was largely fortuitous, following the deaths of two Maritime multimillionaires and the consequent tax windfalls.

Provincial governments have been even slower to intrude directly into questions of public taste and leisure pursuits but all now have some form of culture and/or recreation department, many of them formed in the 1970s.

The linking of culture and recreation is an evolution in government attitude which may lead to a more balanced approach to leisure subsidy. Current support is rarely based on stated policy but there appears to be a hierarchy of approval which determines what will be subsidized. Take burlesque, baseball and ballet, for example. In the first case, the spectator pays at the door. In the second, amateur baseball may receive some form of subsidy in the way of travel support and facilities for teams, but the spectator pays at the gate for a professional game, or through purchase of a sponsor's products for broadcast coverage. In the case of "higher culture", although those who attend the ballet, the opera and the theatre are as numerous as those who cheer and groan in person at the more physical forms of entertainment, government has to subsidize the seats.

There are some who would reject a distinction between culture and sport and, furthermore, who feel that "the profit motive should have no place in spectator sport". The great amateur athlete Bruce Kidd has stated that "a sport like hockey is a part of the national culture". He goes on to argue that "since the community contributes so much to the development of its athletes, the staging of hockey games should properly be a community enterprise".⁷

It is interesting to speculate what would happen to the subsidy picture if Kidd's view were accepted. The role played

by professional sport and its backers in providing a spectator activity for Canadian males (and perhaps an increasing number of females) directly or via the media, is immense. Yet it is possible that society's values might swing in Kidd's direction by the year 2000, especially if the accent on participatory sport continues to increase. Against that, there is the fact that Canada's population is aging.

The argument about whether watching professional hockey is a leisure activity or a cultural activity is perhaps academic. Perhaps — but in the battle of the subsidies, these academic arguments can be important preludes to the development of a policy, whether for culture alone or for the whole of leisure activity. Some of these policies may be forced on society sooner than anticipated. The California gas crisis raises the question of recreational, versus business, versus essential services calls on half-empty gas pumps. For Canadians, who probably drive more for pleasure than any other nation, the argument hits right in the gas tank.

The point of all this is that leisure is a complex political, financial, social question and that any move toward a leisure policy is fraught with difficulties of definition. But, again, do we really care about definitions? Surely, in this area at least, the citizen can be left to his or her own devices without direction from some Ministry of Free Time. In fact, we never have been free of the state's benevolent dictatorship in leisure matters. From the Greek games (no women allowed), the Roman circus, the medieval English rules that men put in so much time a week practising archery, to the state fairs, our rulers have always sought to keep us amused. And individual artists have turned frequently to local patrons: the medieval jester, the renaissance troubadour, the 18th century writer. For the mass of the population, pleasures (apart from ale and sex) have been something that, historically, someone else has paid for. In part, this has been a question of working capital: the master of the Roman circus, seeking wild beasts from Africa, and the television network, assembling stars for situation comedies, needed resources far beyond those available to individuals.

Today's governments simply walk in the tracks of their forbears: the Canada Council succeeds the private patron. There are a greater variety of entertainments to sponsor and the variety of sponsors (federal, provincial, municipal, multinational) is greater but there is no real departure from the ancient pattern. Consider the following roles of government in helping us pass our time agreeably:

Government as provider of facilities: Centennial pools and Expo 67; parks; community halls and arenas; a strip of tarmac leading to nowhere for those in a northern community who desperately need a drive; ski hills, including building one in Saskatchewan; libraries, museums and galleries — not to mention roads to recreation and roads as recreation.

Government as purchaser: books for free distribution; statues (or reasonable facsimiles thereof); art banks.

Government as patron: of ballet, opera and theatre companies; of a miners choir visiting China; of artists and writers; of students visiting other provinces; of national ski teams.

Government as subsidizer: education courses, in schools or outside; tax exemptions; matching grants.

Government as host: national birthday parties; musical rides; pomp and circumstance; legislature tours.

Government as entertainer: lotteries; National Film Board; CBC and Radio Québec.

Government as legislator: frequently 'Thou shalt

not'... ride snowmobiles in some parks, publish pornography, gamble in non-approved ways.

Government as go-between: transferring tax money from one group to another, or to the same group (if it spends its leisure time in an approved manner?).

He who pays the piper... (Anon.)

Governments, clearly, are paying a whole orchestra of pipers, but pipers who may not be playing the same tune. The pressures on government in the leisure field come from groups, each of which sees its own pastime as worthy of support by the general taxpayer. This has produced, by and large, "Variations on an ad hoc Melody". But in one province at least, the provincial government does make a distinction between culture and leisure. Quebec produced, in the space of a few months in 1978-79, not only a major Green Paper on cultural policy but also a Green Paper on leisure.

This is not the place to discuss the merits of the Quebec approach to a leisure policy although the evolution of this policy during the 1980s obviously will be of great interest to leisure-watchers. It is worth reproducing, though, some quotes from the publication *Actualité*.⁹ The editor, Jean Paré, expresses the fears of a citizen faced with the possible intervention (benign or not) of the state, and the points he raises are ones which might be raised in any country. His argument echoes the Dumazedier definitions. He notes that there was an earlier Quebec effort to bring some order into the leisure picture, through the Belisle Report of 1964, which said:

The State can no longer tolerate a *laissez-faire* approach to leisure... an instrument too precious for the nation and for the individual to be ignored.

"It is not for nothing", Paré comments, "that they haven't created this damned Ministry of Leisure in all the time they've been talking about it. It's because there's a contradiction in terms in the expression 'organized leisure'. By definition, leisure is not organized." And he submits his own definition: "Leisure applies only to that which is autonomous, spontaneous and free, or that you organize yourself".

"The Green Paper regrets that 'the world of leisure is complex to the point of confusion'. Ah, confusion! Capital sin, exceeded in gravity only by that other crime which gave it birth: liberty."

"If Quebecers are pale and puny, drunk and uncultured, it is because their participation in leisure is 'dramatically' weak. Health, culture and liberation (from federal interference) are the priorities of Quebec's leisure bureaucrats."

"What about the daily bread of leisure? Odd jobs and reading, gardening and canasta, dancing and stamp collecting, water-colour painting and mycology, scrabble, puzzles, astronomy... are they part of the Quebec soul? Discotheques and the Forum, trips and roller-skating, are they good for our health? Do we need a Ministry of Leisure to safeguard the right to chess, to darts, to a siesta, to love, to the barbecue, to bagatelle, to scalloping, to embroidery, to music and to knitting? To newspapers, to the cinema, to tango, to the Sunday rest and... to the television? Ah! the TV, sparkling object of scorn."

"The elite expect too much of leisure: remedies for pollution, for the destruction of nature and for the tourist deficit; an 'explosion of creativity'; a 'halt to alienation'. But State-supervised leisure doesn't fight alienation, it domesticates it."

"They will allow the worker to use his earnings to buy his food, his clothing and his lodging in the market place... but not his leisure."

The argument will no doubt surface frequently in the 1980s between those who, like Paré, resent government seduction almost as much as government coercion and those who don't mind seduction as long as it helps them do their own thing.

There is potential for compromise in Paré's article, despite the vigour of his attack against "the dead hand of government on our petty pleasures". Most of the pastimes he lists are what we might call "little leisures": a game of chess rather than a day at Expo. It may be that the compromise is for government to look after big leisure while the little leisures look after themselves. Even here, though, the complexity of the issue shows. Some of Paré's pastimes are already under government influence, such as philately (now a source of revenue for big and little governments, pouring their pretty commemoratives on the market) or regulations to protect scallop beaches, or the scallops themselves.

Who benefits? Who pays?

Another likely source of argument as government lays a dead, or live, hand on leisure is the question of who benefits and who pays. Government, we have noted, transfers tax money from general revenues to the support of leisure activities of which it approves. Again, it is worth remembering that the motive of the government in doing this may not be primarily one of providing worthwhile leisure activity. The industrial or political argument may be the one which persuades government to intervene. The message to the public, to pick one example, is not so much: "Read a good book!" as: "Read a good book, preferably printed in Canada using Canadian paper". This kind of approach is starting from the opposite end of the bridge from that of the Quebec Green Paper, but both may well meet in the centre. Both are trying to influence the citizen to occupy his free time in ways which benefit the state and the other citizens (at least in the view of the policy makers).

One way of finding out how people spend their leisure time — and whether they would spend it in a different way given the opportunity — is to ask them. Under an expanded program of cultural statistics gathering, Statistics Canada did a survey of recreational activities in 1976 asking Canadians which were their favourite sports or physical recreations, which were the sports they would like to start and what were their attitudes toward sport, physical recreation and exercise. The survey was conducted for the Fitness and Amateur Sport Branch of Health and Welfare Canada. Presumably, the major interest of this department is not in how Canadians spend their spare time, as such, but whether they are using their spare time to keep fit. Again, presumably, the department would argue that subsidies to leisure activities should include grants for facilities and recreational personnel who would help Canadians to keep fit. The same department would, still presumably, not approve of government subsidies to those who like to spend their leisure puffing quietly on cigarettes.

The survey provided an interesting picture of Canadian participation in sport and exercise. Although 93% of Canadians 14 and over were physically capable of participation, only 59% did some exercise in the month before the survey. And only 50% took part in a sport or physical recreation activity in the year preceding the survey.

Metropolitan areas tended to have slightly higher rates of activity, "reflecting perhaps better access to facilities". Participation declined with age (only 10% over 65 participated in sport or recreation activity and only 37% in exercise).

and there was a shift from swimming to golf as the favourite sport for the over-65s. This raises the question as to whether we should be subsidizing today the preparation of golf courses to meet the likely demand from the steadily increasing percentage of Canadians over 65.

The survey also showed clearly that participation was heaviest for those with the highest incomes and the most education. Again, this raises a social question of whether subsidies to amateur sport and recreation are, in effect, subsidies to those who can best afford to pay their own way (and, it should be remembered, frequently do, through private clubs — thus increasing their participation rate). Similar arguments about the use of tax money can be made in regard to subsidies for "high-class" cultural activities such as ballet and theatre.

The age of leisure: the leisure of age

One activity not included in the Statistics Canada survey, although it is mentioned in Paré's list, is love — perhaps the biggest leisure activity of them all. This is one aspect of leisure which is very difficult to measure, not only for reasons of privacy but also because a lot of what is essentially the mating game appears under other headings. The high rate of movie attendance by teenagers is probably due as much to an interest in the person in the next seat as to what is on the screen. Swimming and dancing are two other pastimes which may include a high love factor.

Young love often leads into marriage and a new family and renewed contact with friends and with their families. Visiting friends, frequently just for conversation, shows as a major leisure activity in Russia (although the impact of television has begun to be felt). Sitting and chatting is more of a European than a North American pastime, although the history of québécois and other settlers shows a strong urge to seek human society even (or especially) in the depths of winter. It may be that, with the aging of Canadian society, there will be an increase in this kind of activity, although the close-knit family of the past may never return. In old age, leisure and life become perhaps synonymous. Time itself becomes the supreme preoccupation, judging from the last words of Queen Elizabeth I: "All my possessions for a moment of time".

Leisure planners, assuming that governments and private industry will continue to plan leisure offerings, will have a difficult time forecasting the effect of an aging of the population on demands for leisure facilities and materials. As shown in the tables and charts in this chapter, leisure activities vary with age and education. We know that, barring a huge increase in birthrate and huge decrease in education participation rates, both the average age and level of education of the Canadian population will increase through the 1980s and 1990s. This should allow planners to make reasonable guesses as to demand for certain types of leisure. But what we don't know is whether the post-war generation will take on the leisure characteristics of the previous generation as it ages, or whether we have crossed a leisure watershed. Television is seen by McLuhanites as having a major effect on the lifestyles of the post-war generation. Is this a passing phase — the coincidence of new technology with a major demographic fluctuation — or a permanent change? And will further new technology, particularly in the home entertainment and home recreation fields, effect even greater changes in leisure choices?

Even if we manage to mix age and education factors correctly for each activity, we still have to consider the

possible effects of major anticipated outside pressures, such as the likelihood of gasoline shortages during the remainder of the century. This presumably would force people to seek leisure activities closer to home. This last possibility raises an interesting definitional question: Is someone who cannot go for a drive because he has no gas, but goes to a film instead, expressing a free leisure choice?

What leisure futurists have to try to anticipate is the "unanticipated" major change, one with the impact of the Pill in the 1960s or the energy crisis in the 1970s.

Conclusion

This article began with the claim that leisure could become society's major preoccupation by the year 2000. Does this mean that governments must establish a leisure policy in the near future, so that we do not go into the next century with the conflicting policies which seem to bedevil our working life — for example, the conflict between economic growth and the protection of the environment? Or is this an area where government should be kept out at all costs, leaving the private citizen the freedom to dispose of free time as he or she wishes, and leaving to private industry the job of supplying facilities and leisure materials? Is there a logical compromise, something along the lines of the construction industry, where government tackles public works, where private industry builds for industrial, commercial and residential use, and where government subsidizes housing for the poor? Is there a useful distinction to be drawn between "big leisure" and "little leisure"? And a final question: Whatever policies develop, will we be able to pay for the variety of leisure activities we have come to take for granted in the past 20 years? Will we demand an even greater variety of activities to stop us from becoming bored, or will the simple pleasures (cards, the walk by a river) regain their appeal?

For those who doubt our ability to meet our leisure needs on earth, there is consolation:

"In Heaven," the vicar reflects,
As he searches St. Paul for new texts,
"Will be ball games and ballets
And racing car rallies
And Cantonese cooking and sex."

Footnotes

¹Guy, Ray, in *Battles of Wind and Tide, Second Edition*, C. Rose, ed., *Breakwater Books, Portugal Cove, Newfoundland, 1974*.

²Dumazedier, J., *Toward a Society of Leisure*, New York, Free Press, 1967.

³Quill and Quire, *Toronto, May 1979*.

⁴Colombo, J.R., ed., *Canadian Quotations*, Edmonton, Hurtig Publications, 1974.

⁵Culture Statistics Service Bulletin, *Catalogue 87-001, 1978*.

⁶Ostry, B., *The Cultural Connection*, Toronto, McClelland and Stewart, 1978.

⁷Kidd, Bruce, in *Canadian Quotations*, Colombo, J.R., ed., Edmonton, Hurtig Publications, 1974.

⁸Actualité, Vol. 3, No. 7, July 1978.

TABLE 8.1
Percentage of Canadians who read at least one book in 1977¹, by province

	Male	Female	Total
Newfoundland	63.8	71.8	67.9
Prince Edward Island	59.0	78.6	69.2
Nova Scotia	66.4	77.5	72.3
New Brunswick	59.2	73.0	66.5
Quebec	57.6	73.7	65.9
Ontario	68.9	78.2	73.7
Manitoba	64.8	76.0	70.5
Saskatchewan	61.2	75.6	68.6
Alberta	71.1	82.1	76.7
British Columbia	74.6	85.6	80.1
Canada	65.8	77.6	71.9

¹ The data in this and other tables are for February 1977 to February 1978.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

TABLE 8.2
Percentage of Canadians who visited a library or went into a bookstore, and the average number of minutes per day Canadians spent reading books, by province

	Percentage visiting ¹		Average number of minutes per day spent reading books ²
	Library	Bookstore	
Newfoundland	29	49	18
Prince Edward Island	36	59	27
Nova Scotia	36	61	25
New Brunswick	34	57	22
Quebec	26	46	17
Ontario	54	72	24
Manitoba	41	60	22
Saskatchewan	43	63	21
Alberta	48	71	27
British Columbia	58	75	32
Canada	44	63	23

¹ Data are for 1977.

² Data are for the third week of February, 1978.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

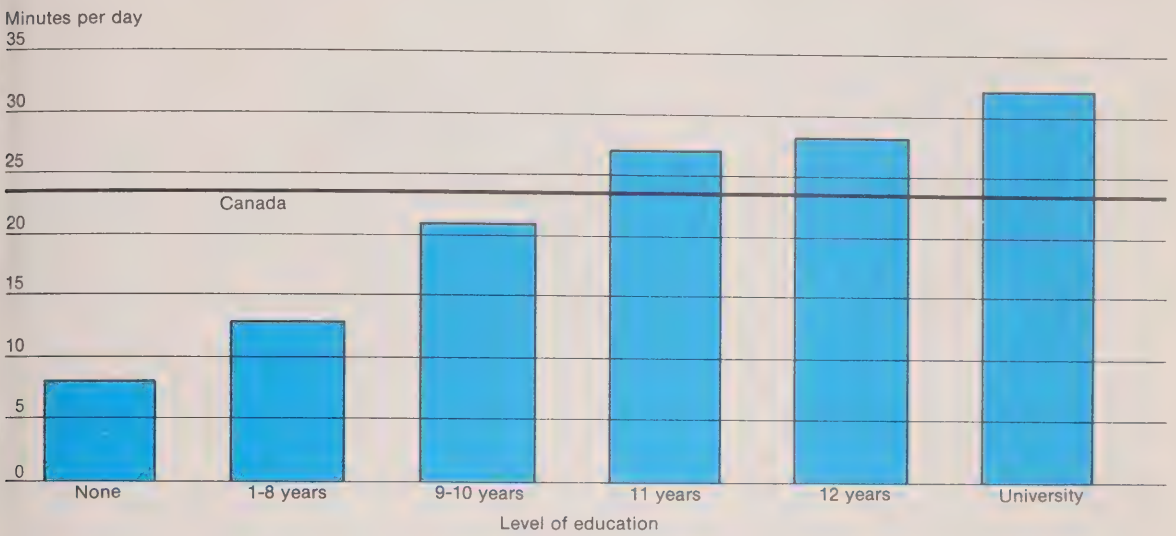
TABLE 8.3
Selected statistics on public libraries, by province, 1977

	Circulation per person	Current expenses per person		Number of printed materials per person		Number of distribution centres per 100,000 persons	Number of professional librarians per 100,000 persons	Number of other employees per 100,000 persons
		For printed materials	Total	Acquired in 1977	Total			
		<i>dollars</i>						
British Columbia ¹	7.5	1.4	10.0	0.16	1.7	10.4	9.0	25.4
Ontario	6.4	1.6	13.0	0.24	2.4	11.2	11.5	34.9
Saskatchewan	6.2	1.6	9.9	0.19	2.0	31.8	8.8	32.8
Alberta	5.2	1.1	7.6	0.14	1.7	13.6	4.2	22.7
New Brunswick	3.3	0.6	4.3	0.11	1.2	7.1	5.4	22.6
Manitoba	4.3	0.8	4.8	0.11	1.4	6.4	3.9	15.8
Nova Scotia	4.0	0.6	4.7	0.08	1.1	9.0	6.1	16.3
Prince Edward Island	4.4	0.8	6.1	0.13	1.4	18.3	7.5	20.8
Newfoundland	3.6	1.0	4.3	0.12	1.3	19.3	2.0	15.4
Quebec	2.2	0.4	2.7	..	1.0	7.1	3.0	9.2
Canada	4.9	1.1	8.2	0.14	1.7	11.2	7.3	23.4

¹ Provinces ranked according to total circulation.

Source: *Public Libraries in Canada*, Catalogue 87-001, 1977.

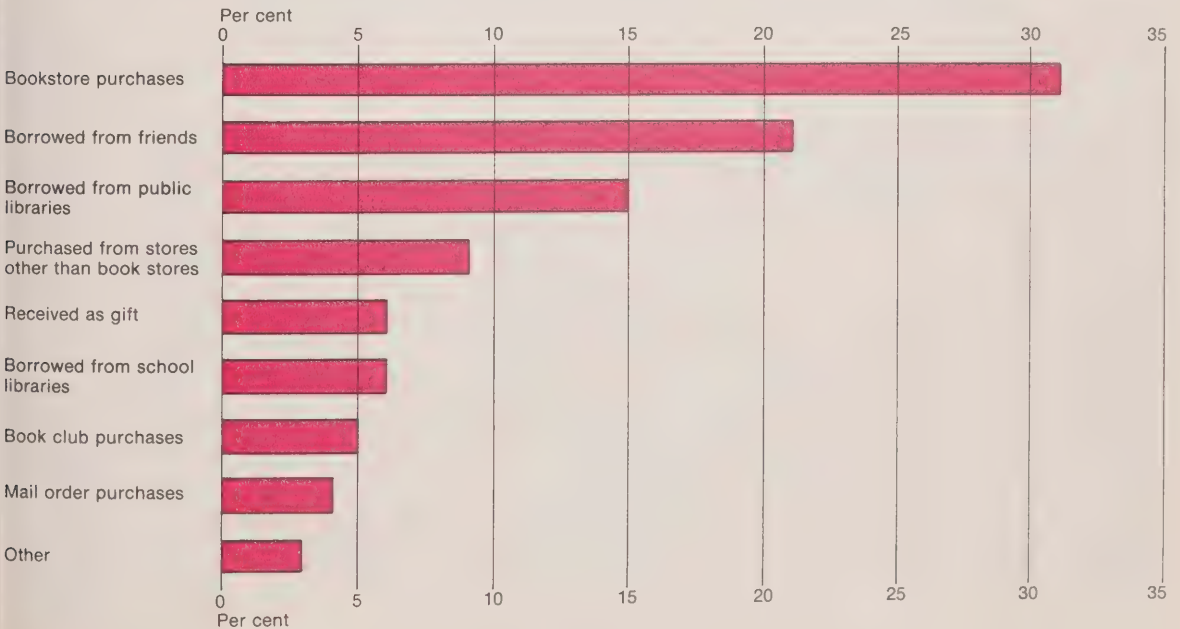
CHART 8.4
Average number of minutes per day Canadians spent reading books, by level of education¹



¹Data are for the third week of February 1978.

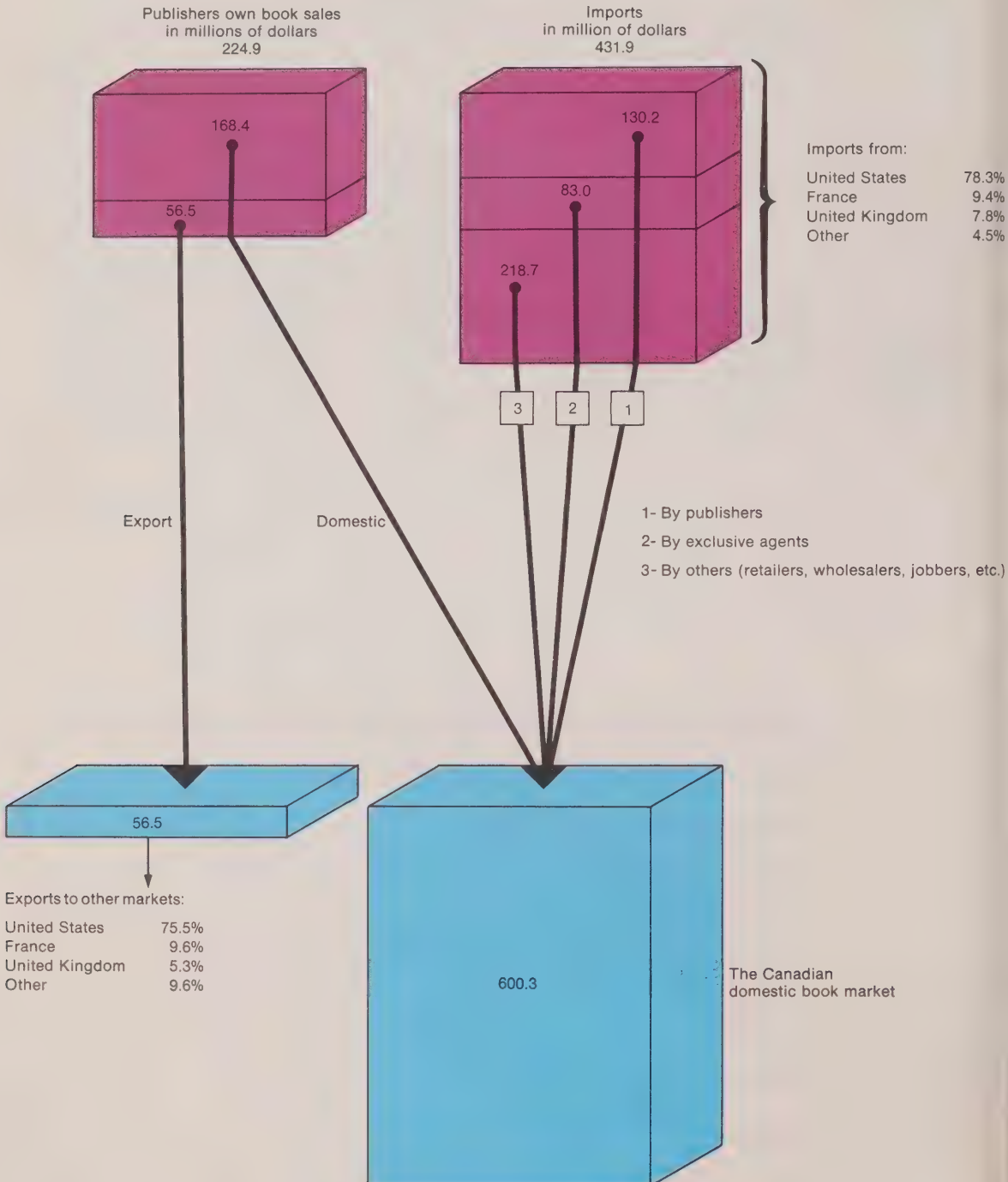
Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.5
Where Canadians got the books they read, 1977



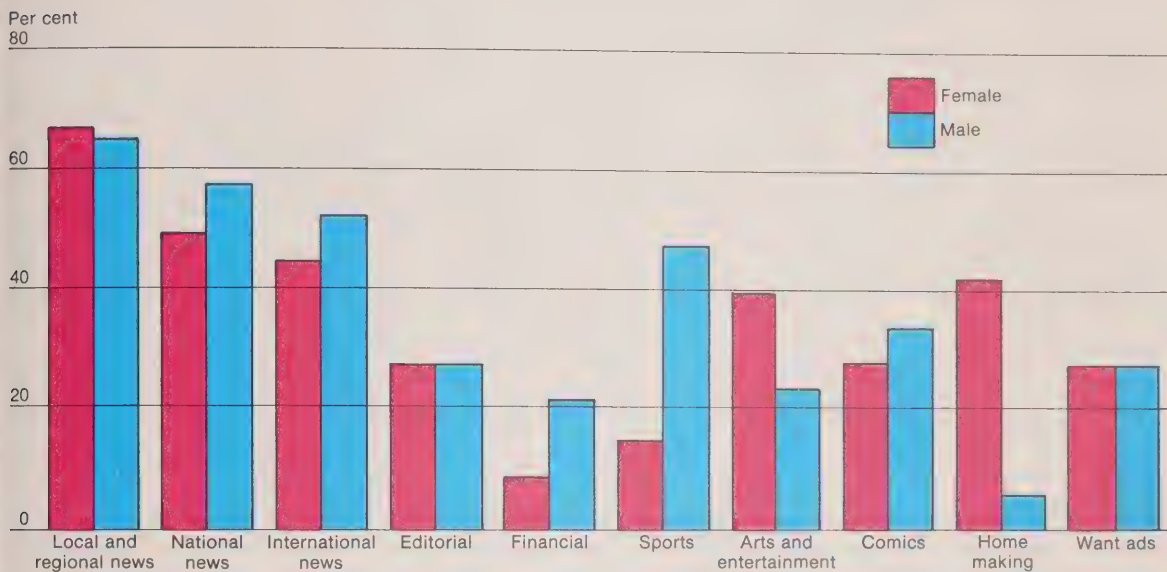
Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.6
Estimates of the Canadian book publishing situation, 1977



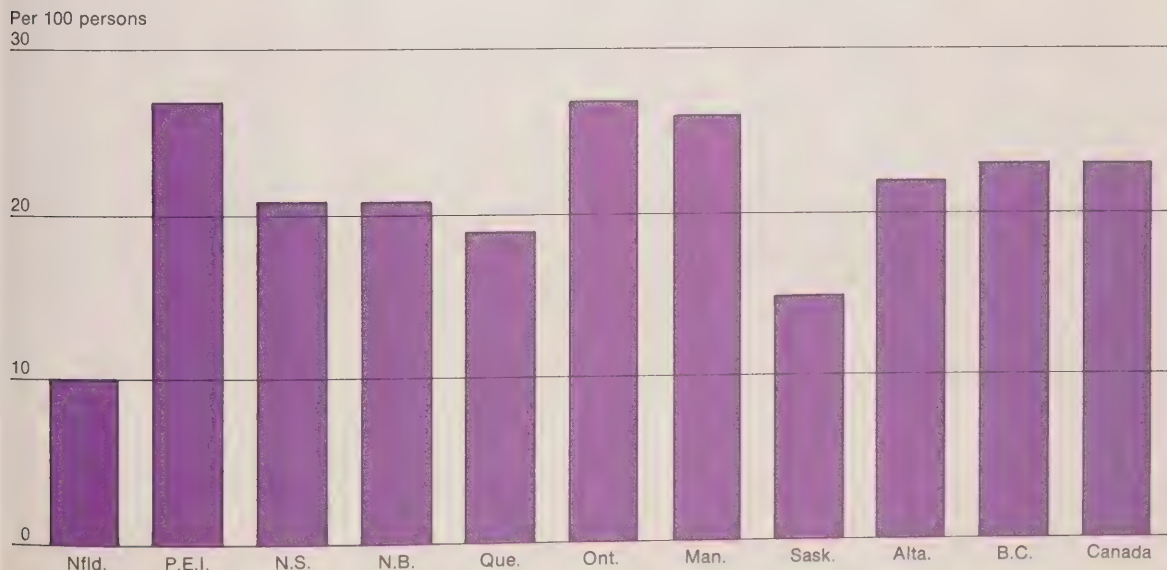
Source: *Culture Statistics: Book Publishing — An Industry Analysis*, Catalogue 87-601, 1977

CHART 8.7
Percentage of Canadians who regularly read certain sections of newspapers, by sex, February 1978



Source: *Canadian Statistical Review*, Catalogue 11-003, July 1979.

CHART 8.8
Number of daily papers distributed per 100 persons, by province, 1977



Source: *Culture Statistics, Newspapers and Periodicals*, Catalogue 87-625, 1977.

TABLE 8.9
Percentage of Canadians who engaged in visual arts or
visited an art gallery or art museum in 1977, by province

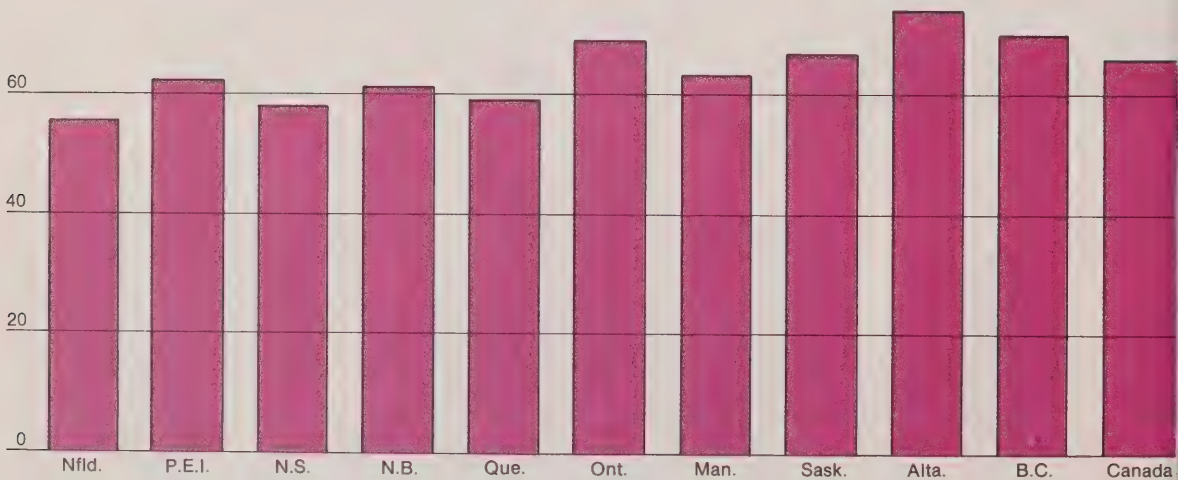
	Participation in visual arts ¹	Attendance at an art gallery or art museum
Newfoundland	21	13
Prince Edward Island	27	20
Nova Scotia	29	19
New Brunswick	32	17
Quebec	32	19
Ontario	40	29
Manitoba	35	29
Saskatchewan	34	29
Alberta	41	33
British Columbia	45	32
Canada	37	26

¹ Includes painting and drawing, sculpture, film photography, and related artistic pursuits. Data are for February 1978.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

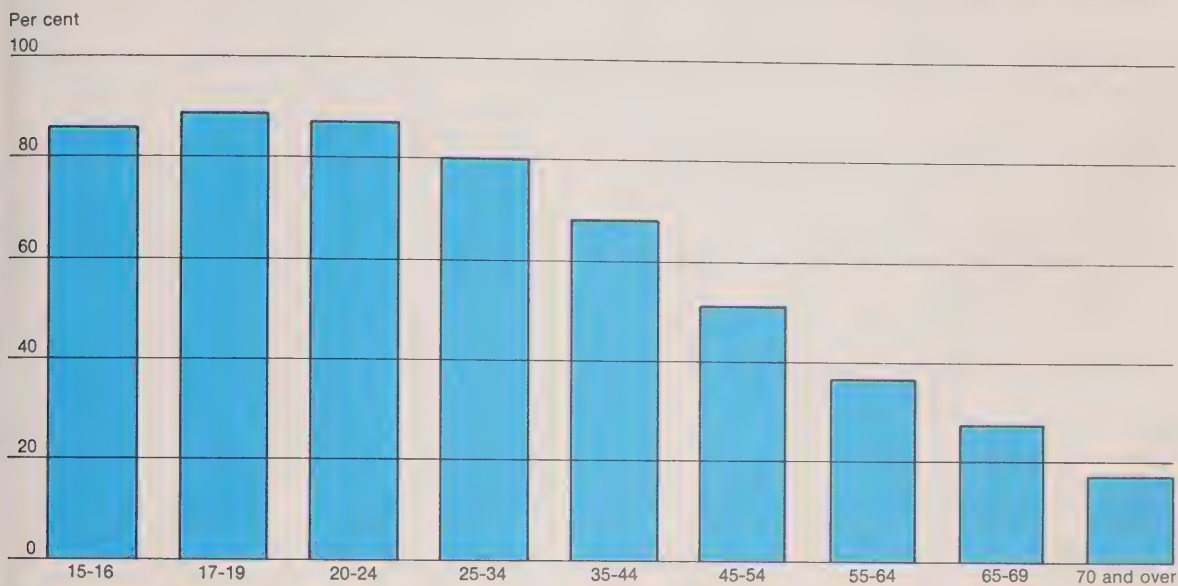
CHART 8.10
Percentage of Canadians who saw a movie (at a theatre) in 1977, by province

Per cent
80



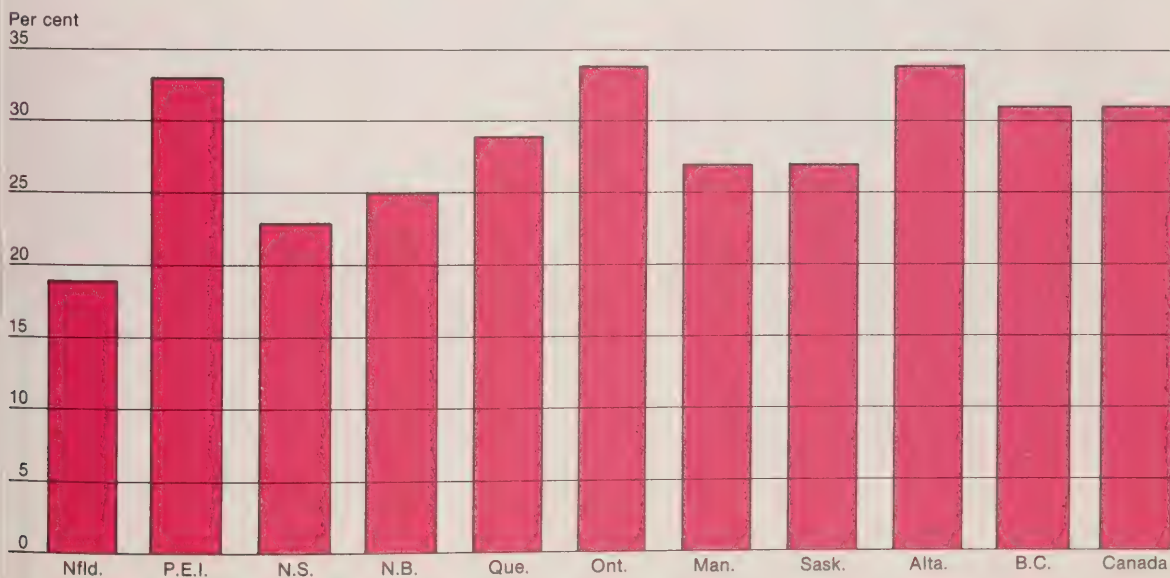
Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.11
 Percentage of Canadians who saw a movie (at a theatre), by age groups, 1977



Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.12
 Percentage of Canadians who attended a live theatre performance, by province, 1977



Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

TABLE 8.13
Number of performances and total attendance for 78 major theatre companies in Canada, 1977

	Number of companies	Number of performances	Attendance ¹ '000s
Maritime Provinces	5	1,052	272
Quebec	19	3,272	1,295
Ontario	32	3,548	1,408
Manitoba and Saskatchewan	4	731	253
Alberta	9	2,301	422
British Columbia	9	1,814	362
Canada	78	12,718	4,012

¹ This is a duplicated count, that is, an individual was counted each time he or she attended a performance.

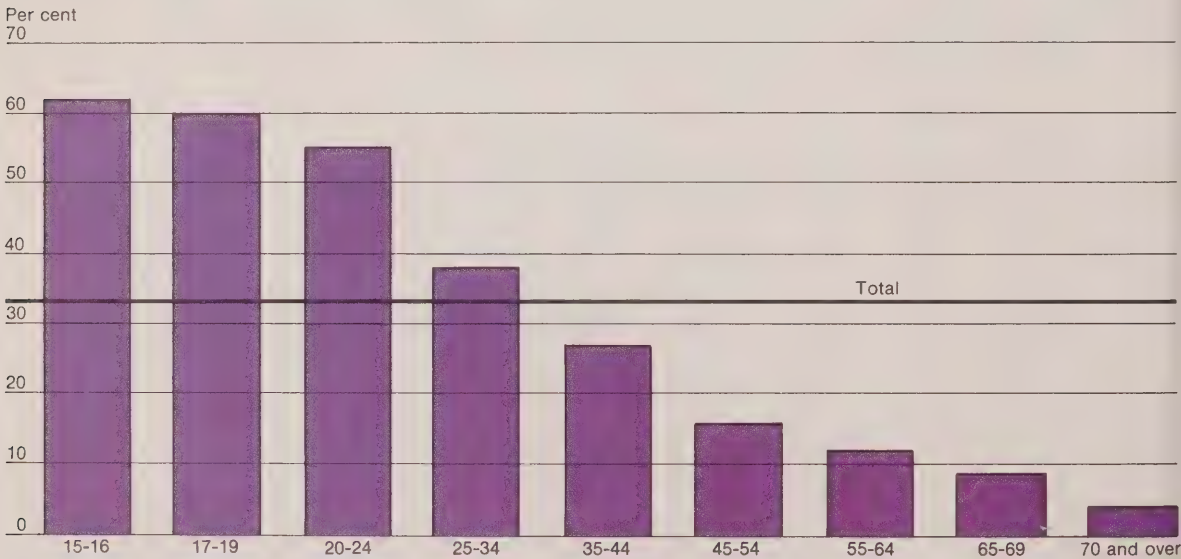
Source: *Culture Statistics, Performing Arts*, Catalogue 87-610, 1977.

TABLE 8.14
Percentage of Canadians who played a musical instrument or practised voice, or who listened to records, tapes or cassettes, by province, 1977

	Percentage playing a musical instrument or practising voice	Percentage listening to records, tapes or cassettes
Newfoundland	22	77
Prince Edward Island	22	77
Nova Scotia	21	76
New Brunswick	20	82
Quebec	18	76
Ontario	25	86
Manitoba	25	83
Saskatchewan	28	83
Alberta	28	87
British Columbia	30	88
Canada	24	83

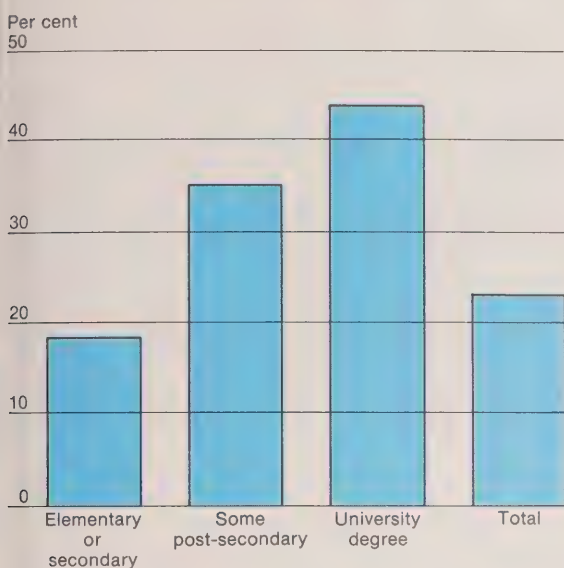
Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.15
Percentage of Canadians who attended a live folk, rock, jazz or pop music performance or recital in 1977, by age



Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.16
Percentage of Canadians who attended a classical music or dance performance or recital in 1977, by level of education



Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.18
Percentage of Canadians who attended a classical music or dance performance or recital in 1977, by age



Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

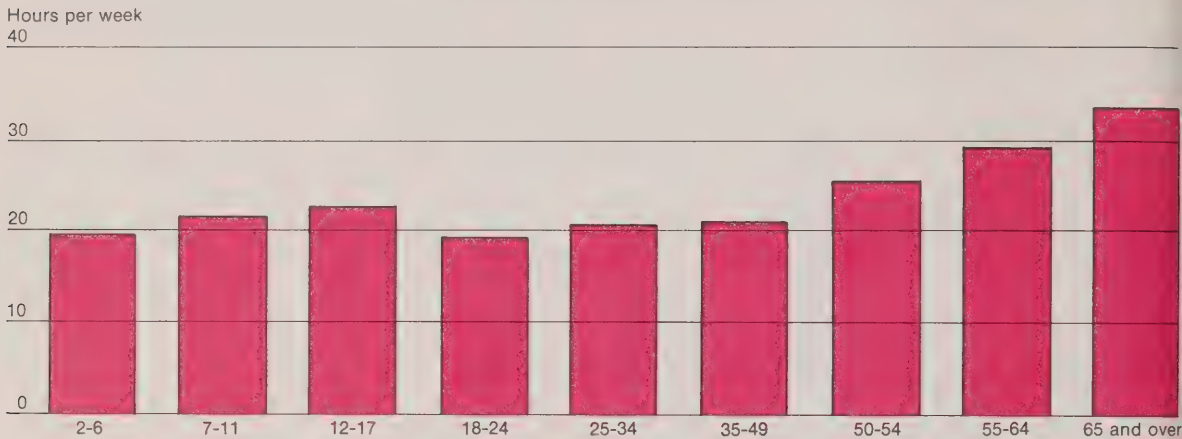
TABLE 8.17
Number of organizations, performances and total attendance for music, dance and opera organizations in Canada in 1977

	Number of organizations	Number of performances	Attendance ¹ '000s
Music:			
Atlantic provinces	3	125	63
Quebec	4	374	382
Ontario	17	1,165	802
Manitoba and Saskatchewan	4	225	266
Alberta	3	112	189
British Columbia	6	265	380
Canada	37	2,266	2,082
Dance:			
Quebec	4	269	179
Ontario	9	603	410
Manitoba and Saskatchewan	3	430	262
Alberta	3	459	36
British Columbia	3	98	23
Canada	22	1,859	910
Opera:			
Canada	6	305	385

¹ This is a duplicated count, that is, an individual is counted each time he or she attended a performance.

Source: *Culture Statistics, Performing Arts*, Catalogue 87-610, 1977.

CHART 8.19
Average number of hours per week Canadians spent watching television, by age, 1977



Source: *Culture Statistics, Radio and Television, Catalogue 87-630, 1977.*

TABLE 8.20
Average number of hours per week Canadians spent watching television, by language, sex and source of program, 1978

	Hours watching Canadian English stations	Hours watching Canadian French stations	Hours watching U.S. stations	Total hours
English:				
Male	14.8	0.1	6.1	21.0
Female	16.1	0.1	6.8	23.0
Total	15.5	0.1	6.4	22.0
French:				
Male	2.9	19.3	1.1	23.3
Female	3.2	23.4	1.2	27.8
Total	3.0	21.4	1.2	25.6
Other:				
Male	13.3	1.2	6.0	20.5
Female	14.9	1.0	7.0	22.9
Total	14.0	1.1	6.5	21.6
Total for all languages	12.4	5.4	5.1	22.9

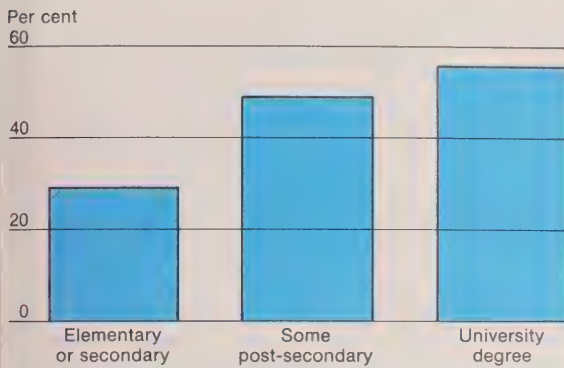
Source: *Culture Statistics, Radio and Television, Catalogue 87-630, 1978.*

TABLE 8.21
Percentage of Canadians who participated in hobby or craft activities, or who attended an arts or crafts fair or festival, by province, 1977

	Participation in hobby or craft activities	Attendance at an arts or crafts fair or festival
Newfoundland	47	18
Prince Edward Island	54	30
Nova Scotia	52	28
New Brunswick	56	28
Quebec	51	36
Ontario	62	38
Manitoba	58	36
Saskatchewan	63	30
Alberta	67	38
British Columbia	71	41
Canada	60	36

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.22
Percentage of Canadians who attended an arts or crafts fair or festival in 1977, by level of education



Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

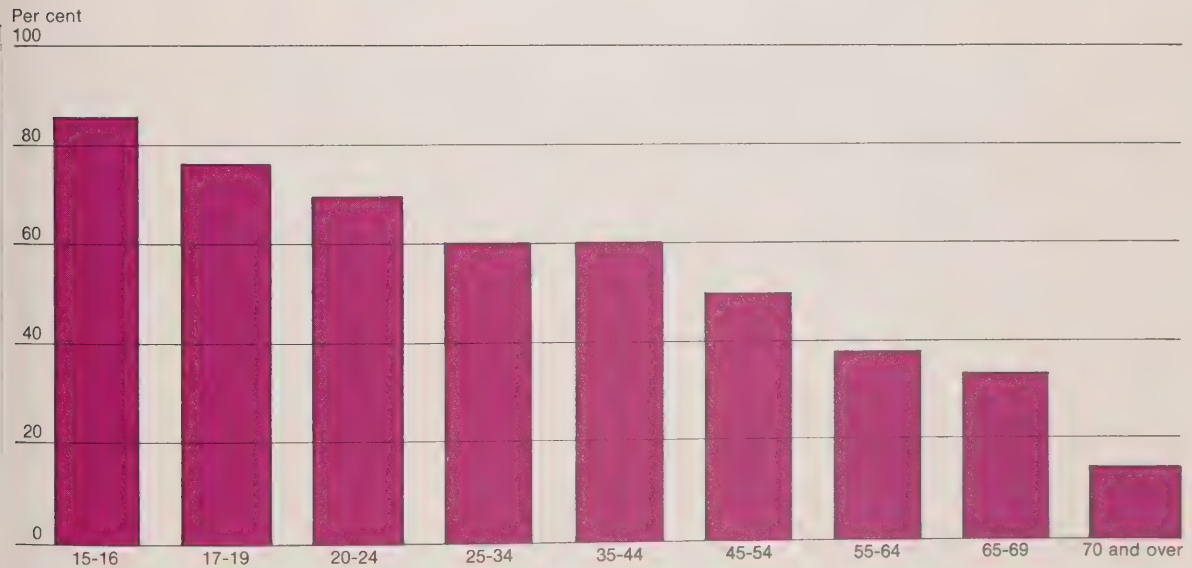
TABLE 8.23
Percentage of Canadians involved in sporting activities either as participants or spectators, by province, 1977

	Participation in individual or team sports or physical exercise	Attendance at a sports event as a spectator ¹
Newfoundland	57	49
Prince Edward Island	65	66
Nova Scotia	58	48
New Brunswick	54	54
Quebec	67	51
Ontario	70	58
Manitoba	70	61
Saskatchewan	71	67
Alberta	75	63
British Columbia	75	61
Canada	69	56

¹ Includes amateur and professional events.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

CHART 8.24
Percentage of Canadians who attended a sports event¹ as a spectator in 1977, by age



¹ Includes amateur and professional events.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

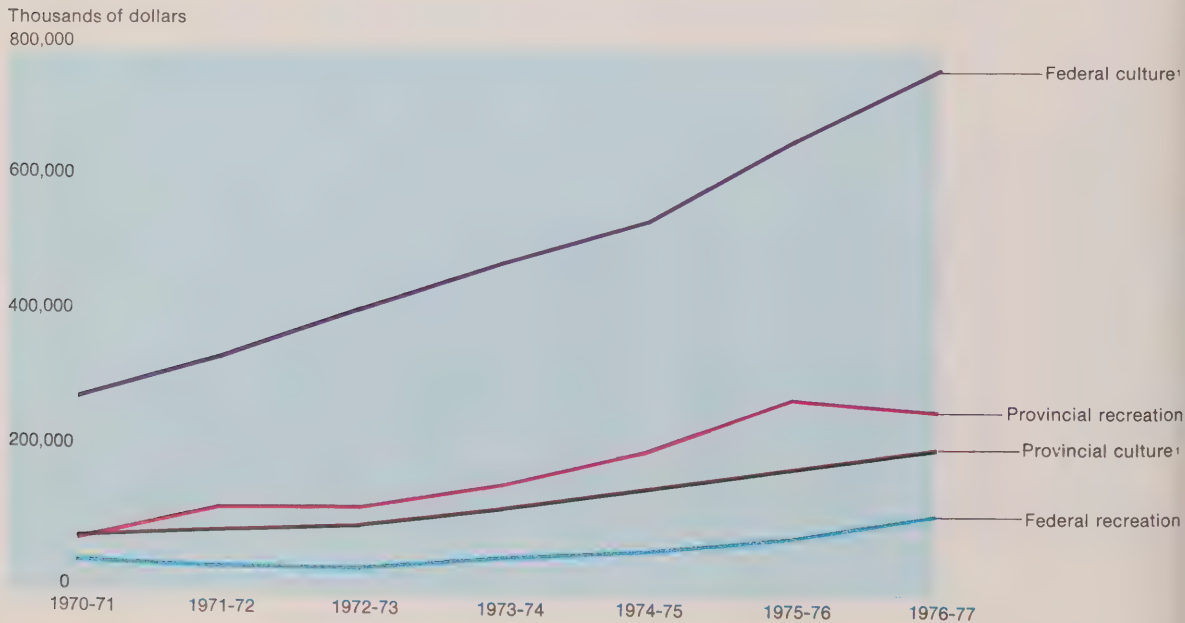
TABLE 8.25
Households owning selected recreational equipment,
1971 and 1978

	1971	1978	Percentage change 1971-78
	<i>per cent</i>		
Downhill skis	--	14.2	--
Cross-country skis	--	16.9	--
Snowmobiles	7.3	9.7	33
Adult-sized bicycles	27.9 ¹	42.0	51
Vacational homes	6.7	6.5	-3
Tents	11.5	17.0	48
Tent trailers	3.8	4.2	11
Travel trailers	2.1	4.5	114
Truck campers	1.2	2.8	133
Canoes	2.1	5.0	138
Rowboats	3.1	3.4	10
Sail boats	0.9	1.3	44
Outboard motor boats	8.0	7.9	-1

¹ Figure is for 1972.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.

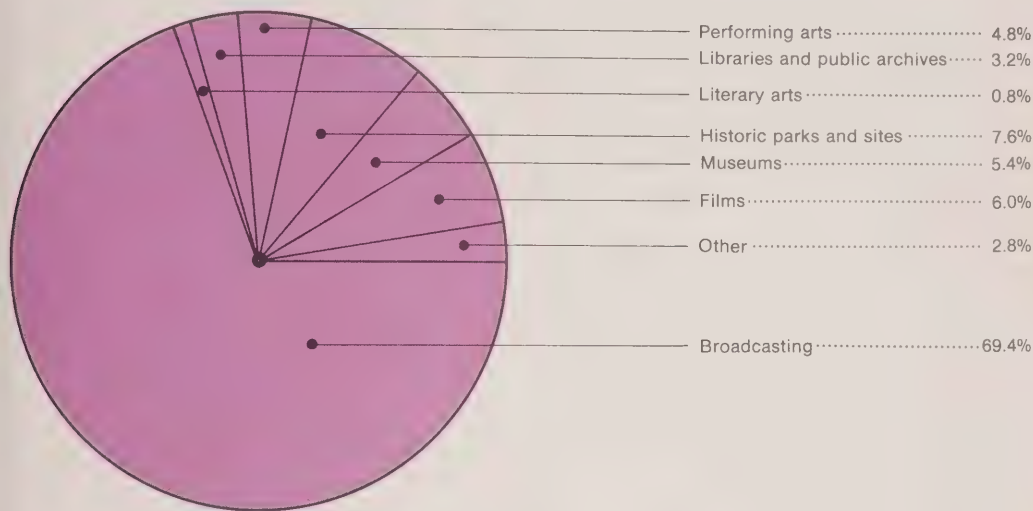
CHART 8.26
Federal and provincial expenditures on culture and recreation, 1970-71 to 1976-77



¹Data for the federal and provincial expenditures on culture are preliminary.

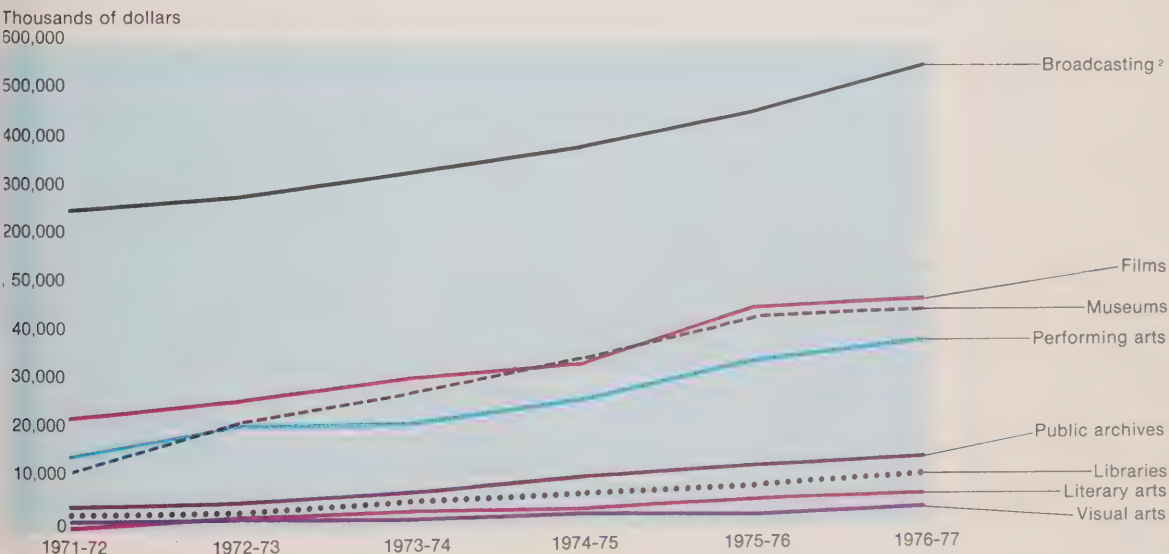
Source: Unpublished data, Education, Science and Culture Division, Statistics Canada; *Federal Government Finance*, Catalogue 68-211, 1977; *Provincial Government Finance*, Catalogue 68-207, 1977.

CHART 8.27
Distribution of federal government expenditures on culture, 1976-77



Source: *Government Expenditures on Culture in Canada, 1976-77*, Catalogue 87-680.

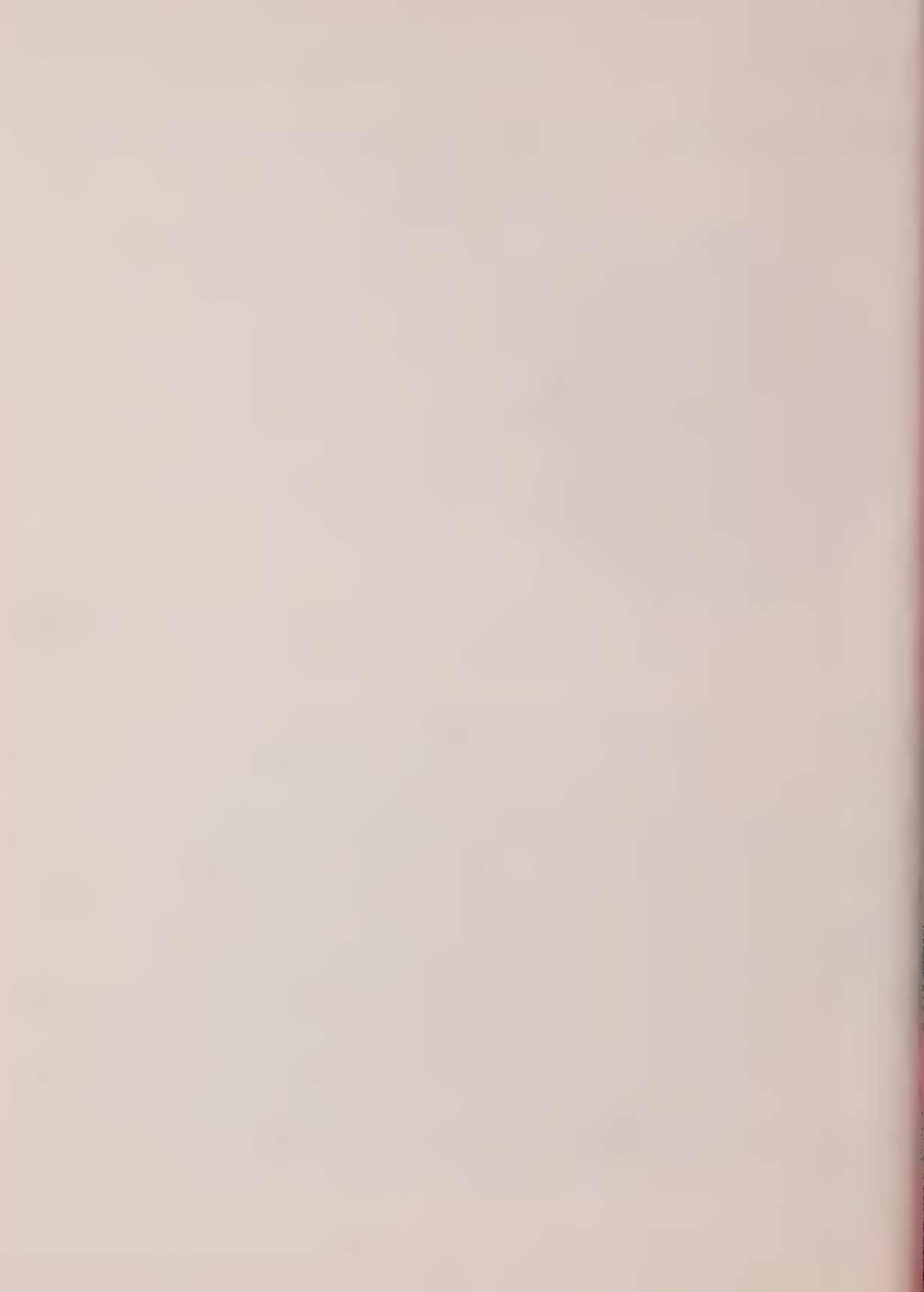
CHART 8.28
Federal government expenditures on selected cultural activities, 1971-72 to 1976-77¹



¹Data used are preliminary.

²Includes expenditures on the CBC.

Source: Unpublished data, Education, Science and Culture Division, Statistics Canada.



Crime and Justice



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Crime and Justice

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*The section entitled "Policing Trends and Prospects"
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Department of Sociology, University of Victoria,
Victoria, B.C.*

Crime—its prevalence and prevention—is of major interest to a large number of Canadians. However, anecdotal reporting of particularly spectacular or gruesome offences provides an inadequate picture of the nature and amount of crime, and how effectively the various elements of the justice system can and do deal with illegal activity.

Such elementary questions as how much crime is there, how just are Canadian courts, and how effective are different kinds of punishments have neither simple nor easy answers. Many crimes go undetected and unreported and therefore cannot be counted. The quality of justice is an abstract concept not easily defined or measured, and the long-term effects of imprisonment and other penalties are difficult to assess with much precision. Nonetheless, enough information exists to provide partial answers to these questions, and to permit an embryonic understanding of the workings of the Canadian justice system.

For purposes of statistics, crimes and offences¹ are simply those acts which violate provisions of prohibitive legislation at any point in time, and are interpreted by the police and courts as violating the law.

Crime Rates: Facts or Fancies

Statistics on the various aspects of crime and crime control are generally regarded as being among the least reliable and least adequate of social statistics. Black, for example, commented in 1970 that "it has long been taken for granted that official statistics are not an accurate measure of all legally defined crime in the community."² The Law Reform Commission of Canada put the argument in even stronger terms in 1976:

It cannot be said strongly enough that the basic accounting of what we do in the criminal justice process is clearly irresponsible and would not be tolerated in any other area.³

Data on crime in Canada are generated almost exclusively through the Uniform Crime Reports submitted to Statistics Canada by virtually every police force in Canada. Unfortunately, a large proportion of criminal activity is never reported to police authorities, and a substantial segment of what is reported is, for reasons outlined below, not officially recorded by the police.

In societies like Canada, the bulk of responsibility for crime detection lies with the general population; the police are organized primarily to respond to complaints or reports of criminal activity from victims or witnesses. Crimes such as possession or trafficking of prohibited drugs, gambling and prostitution have no victims in the traditional sense, and the police are unlikely to receive information about such activity unless the participants are caught in the act.

It is also true, however, that many victims and witnesses of other crimes do not report these events to the police. There is a wide variety of reasons for this phenomenon, including:

- the activity may not be recognized by participants or witnesses as being criminal, or it may be an accepted part of some sub-cultural activity, for example, assaults during hockey games or street fights;
- a victim may not agree with the law, may feel that potential sanctions are too harsh (especially if the offender is a relative or acquaintance), or may view an offence as an essentially private act of no public concern or consequence;
- many offences (especially acts of physical violence) are committed by friends or relatives of the victim and the disputes are settled (in whatever fashion) without recourse to calling in outside agents;
- reporting of offences may be potentially embarrassing or painful to the victim;
- reporting of offences may appear too costly to a victim in terms of either the time or effort needed to pursue the charge;
- a victim may be intimidated or fear reprisals if an offence is reported;
- a victim may feel that there is little chance that the offender will be caught.

Even when a crime is reported to the police there is no certainty that it will be recorded. The police exercise considerable discretion in deciding which crimes will be officially recognized. Depending on the seriousness of the offence, the relationship between the offender and the victim, the intensity of the victim's response, and the age, demeanor and socio-economic status of both the victim and the offender, police officers may attempt to handle many situations informally, judging that each will simply cool itself off, or that few benefits would result if the case were pursued further. In other situations, the police may not record an incident because they doubt that there is enough evidence for conviction (and/or to justify additional paperwork or court appearances).

While it is not known precisely how much reported criminal activity is not recorded by the police, one source has estimated "that fully 35% of all crimes reported to the police went unrecorded".⁴ The proportion of crimes that are not reported to the police may be even greater. M.C. Courtis conducted a survey of victimization⁵ in Toronto in 1970 and found that on average only about 20% of crimes were reported, ranging from over 40% for thefts to less than 2% for "being cheated or overcharged".⁶ The survey also revealed that only about 10% of assaults were reported. A similar American source estimated that fewer than 28% of major offences were reported to police authorities.⁷

The apparent low reporting of assaults compared to thefts is interesting. Logic suggests that the highest rates of reporting should be for the most serious offences, yet this is not the case. One reason why thefts are reported more often is that the victim may have more to gain by reporting the offence—for example, lost articles may be insured, or there is the possibility that stolen property will be returned.

For all the above reasons, official crime rates do not describe the totality of criminal activity in Canada. These

"Errors in our knowledge of the volume and distribution of criminal incidents may considerably disguise human misery and limit our ability to understand even the most basic facts about society".⁸

In addition, official crime rates can affect the allocation of police resources, the incidence of insurance premiums, and the compensation of victims of crime. What official crime rates do describe is an approximate rate of socially recognized criminal behaviour. They are "facts about the amount of business that officially comes to the attention of the police and how it is disposed of".⁹

One of the paradoxes of social statistics is that most discussions of criminal statistics (including this one) start with a discussion of inadequacies of official data, and then use them to portray the real world. Unfortunately, these are the only data that systematically describe crime, and they must be used if we are to know anything about crime in Canada. The reader and analyst must remember at all times that it is not the actual incidence of crime that is being discussed, but only the amount of crime that is reported and officially recorded.

Trends in Official Crime Rates

In the period 1970-78, the number of actual, reported¹⁰ offences for all crimes and for property offences increased by 33% (Table 9.1), while the number of violent offences increased by a little over 23%. The explanation of these increases may be sought among a number of factors, such as:

- demographic shifts: persons between the ages of 15-30 generally tend to commit more crimes than other age groups, and the increase in crime in the 1970s may simply reflect the greater proportion of the population in this age range in the 1970s;
- increases in size of police forces (see also the section on "Policing Trends and Prospects" below);
- increased professionalization of police officers: better trained police officers tend to take a more formal approach to reported crimes—they are more likely to record crimes and charge reported felons whereas their predecessors with their own beats would settle many disputes informally;
- increased affluence: stated simply, more goods are available to be stolen;
- changes in attitude toward particular types of behaviour: for example, rape and sexual assaults; segments of the population may be less tolerant of criminal acts and more likely to report or record them;
- changes in public attitudes toward the police.

In addition, it is possible that apparent increases in the incidence of crime may actually reflect longer-term fluctuations. In describing the increase in the murder and manslaughter rates since 1962, J. Blanchard and G. Cassidy cautioned that the increase "... may really be due to the exceptionally high variance of these crime types over time rather than a new and significant increase in them recently".¹¹

Comparing crime rates in different jurisdictions entails many of the problems encountered in comparing rates for one area over time. Law enforcement policy and reporting and recording practices may vary, and areas may be characterized by different population distributions, density, mobility patterns, economic and social conditions, attitudes toward the police, and particular behaviour patterns. Because of this, interprovincial comparisons of crime rates should be made only with caution. The data in Table 9.1 do, however, indicate an increase in the rates of reported

offences as one moves across Canada in a westerly direction.

The figures on crime rates by size of municipality (Table 9.4) offer some rather surprising trends. Percentage increases in rates of reported crime in the period 1970-77 were smallest in the largest communities (the opposite of what conventional wisdom might suggest). In addition, while the rate of reported violent and property offences generally varied in proportion to the size of the community, the rate for all other offences generally increased as the size of the community declined. This latter phenomenon reflects the greater propensity for smaller communities to process more formally persons who commit less serious offences, such as those involving liquor statutes.

Clearance Rates

Clearance rates—the percentage of reported offences for which the police are able to lay a charge against at least one person or solve otherwise¹²—are often considered to be measures of police efficiency; that is, they are rough indicators of how many reported crimes have been solved.

It has been suggested that, like crime rates, clearance rates are not particularly reliable.¹³ First, who is charged is subject to considerable discretion on the part of law enforcement officials. Second, different offences have quite different probabilities of being cleared. Victimless offences and shoplifting are examples of offences which generally become known to the authorities only when an offender is apprehended, and, as such, the clearance rate can approach 100%. For offences such as petty theft, on the other hand, the probability of ever laying a charge is considerably less (Table 9.6).

In addition, clearance rates are susceptible to manipulation by police departments which can, for example, enhance their image or support requests for more manpower resources by devoting more resources to offences with high probabilities of clearance, or by systematically not recording low-probability offences. In this context, J. Hagan commented that "... one latent function of processing skid-row alcoholics in a 'revolving-door' fashion is that it makes the criminal justice system look both busy and efficient".¹⁴

The data in Table 9.5 indicate, however, that in the 1970s clearance rates in Canada have been remarkably stable.¹⁵ Just over 50% of all offences on average have been cleared with 35% being cleared by charge. Non-criminal-code offences have by far the highest clearance rates—over 90% cleared and 70% cleared by charge—while property offences are characterized by the lowest clearance rates.

The high number of violent offences cleared otherwise (36% compared to 34% for offences cleared by charge in 1978) is explained primarily by the fact that many victims, often friends or relatives of the offender, refuse to press charges following the incident.

The figures describing the population charged with criminal offences show an interesting trend (Chart 9.8). Between 1970 and 1978, the proportion of male juveniles charged with violent, property and all offences actually declined, while the proportion of females, both adult and juvenile, of all persons charged increased in all categories. It is important to note that it is not possible to tell whether this reflects increased criminality on the part of females or whether police are simply more inclined to charge female suspects. It may also be significant that in some provinces, Quebec and British Columbia, for example, the police no longer charge juveniles directly; rather, the cases are

referred to social service agencies which decide whether charges will be laid.

Court and Prison Statistics

In the period 1962-73¹⁶ there was a shift in the sentencing practices of Canadian courts. The proportion of persons convicted of an indictable offence who received suspended sentences without probation or were sent to an institution declined (from 48% to 36% in the latter case) while a greater

percentage were either fined or given suspended sentences with probation (*Table 9.9*).

Preliminary data are now available in *1978 Criminal Court Statistics*, on sentencing in Quebec, British Columbia, and the Yukon and Northwest Territories for 1978. The data, however, are not comparable with those in *Table 9.9* because the classes of sentences are different and because all offences (as opposed to just indictable offences) are included in the 1978 report. The data for Quebec and British Columbia are summarized below.

	Absolute or conditional discharge	Fine	Probation	Institution				Total
				Less than 2 years	2-5 years	More than 5 years	Other ¹	
				<i>per cent</i>				
Quebec	1.8	59.9	13.1	17.4	2.1	0.3	5.6	100.0
British Columbia	6.4	55.7	19.2	15.2	0.7	0.3	1.4	100.0

¹Includes court orders re confiscation, compensation, restitution or prohibitions against driving or navigating, etc., invalid sentences or no sentence was reported.

Source: *1978 Criminal Court Statistics*, Justice Division, Statistics Canada, August 1979.

The apparent reduction in the severity of sentences and particularly the decline in the percentage of persons sent to jail or penitentiary partly reflects the recognition by a number of criminologists that institutionalization may not be as potent a deterrent to criminal activity as popular wisdom sometimes suggests primarily because of the following factors.

First, many offences, and especially many serious violent offences are committed when the actor is not rational, either because of the influence of drugs or alcohol, or because of anger, passion or related emotional stress. Second, the time lag between the actual offences and when punishment will be experienced may function to defuse the impact or fear of sanctions. In this context: "... the informal evidence suggest that certainty of punishment is a more important deterrent than severity and that the act of getting caught, without any punishment added, may be sufficient deterrent".¹⁷ Third, potential sanctions may have varying impacts on different segments of society. Teevan, for example, hypothesized that: "... Perhaps lower-class males, who generally have higher crime rates, do not perceive the crowded, tough, confined world of prison in which one loses almost all status to be very different from their day-to-day environment."¹⁸

Finally, the experience of prison may have certain negative effects on a large number of inmates. Persons sentenced to institutions are still largely cut off from counter-criminal models and exposed to pro-criminal influences and as a result they often assimilate the techniques, language, attitudes, and rationalizations of criminals.

Unfortunately, there is little national data available to either prove or disprove these arguments. The figures in *Chart 9.13* show that almost 50% of males admitted to federal penitentiaries in 1976 had experienced at least one previous penitentiary committal and that over 30% had been confined for more than two years. These data, however, do not show how many persons released from institutions are not returned.

POLICING TRENDS AND PROSPECTS¹⁹

There were approximately 64,000 public police employees in Canada in 1976. The provision of public police services

consumed close to 1% of the Gross National Product, or about \$1.3 billion. In constant 1971 dollars, per capita expenditures for public policing increased by more than 40% between 1971 and 1976.

There has been a steady growth between 1962 and 1977 in the number of public police employees per 1,000 population in Canada, the United States and the United Kingdom (*Table 9.14*), that is, the number of police has been increasing more rapidly than the population, although there is some indication that this growth rate is levelling off. Within Canada the increase in the rate of police per 1,000 population has been most dramatic in Saskatchewan, almost tripling during the 15-year period (*Table 9.17*). Aside from the Territories, which have high rates of police per 1,000 population (presumably because of their relatively small and widely scattered population) Quebec and Ontario have the highest rates, while the Maritimes generally have the lowest rates. Except for Saskatchewan, the trends are similar from one province to another.

The rapid growth in the number of police per 1,000 population is largely a reflection of a general expansion of government during the early 1970s. Despite the increase in the rate of police per capita (and an even larger percentage increase in their number), public expenditures for policing remained fairly constant as a proportion of all government expenditures during the 1970s (*Table 9.16*). However, American and British data are available for a longer time frame than is the case for Canada, and these data suggest that there has been a long-term increase in the proportion of government expenditures allocated to the police, at least since 1946. The proportion of American government expenditures allocated to the police does appear to have dropped during the first half of the century. Why this was the case is not clear.

Although the expansion of the police in all three countries has been a reflection of increased public sector involvement and expenditures, the proportion of the GNP expended on policing services has been increasing steadily for all three countries (*Table 9.18*). There has been a similar steady increase in the per capita expenditures on policing services, even after controlling for inflation (*Table 9.19*).

Within Canada, Quebec and Ontario have the highest per capita expenditures on policing; the Maritimes have the

lowest, though in this comparison Nova Scotia more closely resembles the Western provinces than it does the other Maritime provinces. It is noteworthy, however, that Nova Scotia is third, behind Quebec and Ontario, for the proportion expended on policing both of provincial-local consolidated government expenditures and of personal income per capita (*Table 9.20*).

Concerning the use of civilians in policing, the United Kingdom appears most likely, and the United States least likely, to rely upon the services of non-sworn, that is, civilian, personnel. However, the fastest rate of increase of sworn personnel has been occurring within Canada (*Table 9.22*).

In all three countries, policing has been largely a man's world. Canada has been the least likely to hire women as regular sworn police officers, while the United Kingdom has been most likely to do so. While remaining well under 10% of the regular sworn personnel in all three countries, the percentage of sworn personnel who are women has been increasing in each. There appears to be no reluctance to hire women as civilians. Throughout the 1970s, the majority of civilian employees have been women in both Canada and the United States. Almost one out of five females employed by police agencies in the United States is a regular sworn police officer; in Canada the figure is about one in 10. For each country the proportion of female employees who are regular sworn police officers has been increasing (*Tables 9.23-9.25*).

Probable Future Developments

Several factors are likely to impact upon policing throughout the remainder of this century and into the 21st century. These include fiscal austerity, national economic malaise, sophisticated technological innovations, and changing definitions of crime.

Clearly, there is a finite limit as to how much of the GNP can be consumed by the public sector. When this limit is reached, public spending will be curtailed and the resulting curbs are apt to affect policing the same as other public services. It is probable that the finite limit will never be reached because of public intolerance toward a constantly increasing tax burden. While the level of public tolerance, short of the absolute limit, can be expected to vary from one country to another, it appears that Canadians are already nearing the limit of tolerance. The question is not one of if, but only one of when that limit will be reached.

One result of reaching that limit will be a restriction of growth in the public sector employment and expenditures, which will include the police. This need not be viewed as a disaster scenario. Notwithstanding facile assumptions, it has never been established that merely increasing police expenditures or the number of police will lead to a reduction in crime.

It is also interesting to note that Kelling et al found that citizens' attitudes toward police services, satisfaction with police response time, and fear of crime, as well as actual police response time were not significantly affected over a year either by a withdrawal of preventive patrols or by a doubling and a tripling in the number of routine preventive patrols.²⁰ This conclusion may merely suggest that routine motorized patrols constitute an inefficient deployment of personnel, but it may also suggest that increases in the number of personnel reach a point of diminishing returns.

Brenner, in a study concerned with the effects of the economy on crime in the United States, Canada, England and Wales, and Scotland from 1900 to 1970,²¹ found that most categories of reported crimes increased during periods of

economic growth, though they increased even more sharply during periods of economic downturn. The major cause of variability in criminal statistics was attributed to economic instability (boom as well as bust periods) and to economic inequality. He also claims that trends in crime can be forecast with greater than 90% accuracy based only upon three national economic indicators (unemployment, inflation and per capita personal income), the size of the population under 30 years of age, and the extent of urbanization. If his analysis is correct, it follows that the level of crime will be relatively unaffected by changes in the volume of police expenditures or in the number of police personnel.

In addition to fiscal restraint and general economic malaise, another factor which will affect policing is technological innovation. Increasingly, police will have at their disposal more and more sophisticated security and surveillance systems including voice detection; odour detection (for the identification of either persons or contraband); the use of space satellites for surveillance of people, space, goods, and conversations; and increased patrol, criminal investigation, and management informational use of new generations of communications and computer technology.

Other advantages for the police will be the existence of special sensors for the detection of shoplifting or other unauthorized appropriation of materials; new burglar alarms and monitoring technologies to make unauthorized entry to premises more difficult; and, as is noted by the Science Council of Canada,²² a constant trend toward electronic mail, cashless banking and bill paying through the use of interactive computer systems, computerized shopping by telephone or cable hook-up, and computer-controlled manufacturing operations. Cumulatively, these can all be expected to reduce traditional patterns of larceny, breaking and entering, and even events such as purse-snatching if the potential thief has reason to believe that there would be nothing in the purse which could easily be converted toward his or her own use.

However, such technological innovations will be a two-edged sword for policing. While potentially minimizing the incidence of the most common traditional forms of street crime, technological innovations may also prove to be a breeding ground for a wide variety of crimes which currently are either rare or unknown, and with which the police may be ill-prepared to cope. As the computerized society becomes more and more commonplace, so also will the proportion of the population familiar with computer programming be higher and, all else being equal, the number of persons who will be tempted to turn their programming skills to illegal activity will increase.

Civil Justice

Unfortunately, until recently little national statistical information has been available on the civil justice system. Statistics Canada, however, recently published a study of civil litigation, covering cases begun in 1971.²³ Although there are a number of problems with this survey: Ontario was not included; civil laws vary from province to province in Canada; and much data are still not available because some court recording practices are inadequate for statistical purposes, it does provide a glimpse of this aspect of justice in Canada.

The majority of civil cases (over 70%) are related to contract and property problems (*Chart 9.26*) and are heavily made up of cases resting on default on repayment of a loan. This study also indicates that in most instances (40%), civil cases involve a single organization suing an individual

(**Chart 9.28**). The reverse, where an individual sues an organization, makes up only 5% of all cases, although the latter form is the one that usually makes headlines.

The data indicate that most cases are settled over relatively short periods of time (**Table 9.27**). In all major types of cases, most cases were resolved in less than three months, although it is apparent that cases are resolved more quickly when an organization is the plaintiff than when it is the defendant. It is also apparent that the duration of cases is directly related to the presence of legal representation. Ninety per cent of cases were resolved within three months when neither party was represented but only 16% of cases were settled when both parties were represented²⁴. In these contexts, the authors commented: "... cases in which an individual sues an organization tend to take much longer than do the reverse cases. This offers the intriguing possibility that there is a purposeful delay in some kinds of cases." This is particularly the case when organizations, which generally have the resources to make heavy use of legal services, are the defendant. Whatever the cases, the success of defendants generally seems to increase as the length of the trial increases and when they are represented by counsel (**Table 9.27**).

Notes

Violent offences: Comprise murder, attempted murder, manslaughter, rape, other sexual offences, wounding, assault and robbery.

Property offences: Comprise breaking and entering, theft of a motor vehicle, and all other thefts.

Clearance rates:

(A) Cleared by Charge: An offence is cleared by charge when an arrest is made, a summons to appear is issued, or a warrant to apprehend is laid against at least one person. If an offence is committed by several persons and only one is arrested and charged, the offence is still cleared by charge.

(B) Cleared Otherwise: An offence is cleared otherwise when the offender has been identified and enough is known to issue a warrant, yet, there is a reason outside of police control that prevents the laying of this information and prosecution; for example, the offender has died, is in a foreign country, the complainant refuses to prosecute, the offender has diplomatic immunity, etc.

Juvenile Delinquents: A juvenile delinquent, as defined in the Juvenile Delinquents Act, is any child who violates any provision of the Criminal Code or any federal provincial statute or any bylaw or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute.

Whomsoever counts as a juvenile is specified in terms of age. The minimum age is seven years, and the upper age limit of juveniles varies from province to province. The limits are: under the age of 16 in Prince Edward Island, Nova Scotia, New Brunswick, Ontario, and Saskatchewan; under 17 in Newfoundland; under 18 in Quebec, Manitoba and British Columbia; and in Alberta, under 16 for boys and under 18 for girls.

Indictable and Summary Offences:

An indictable offence is one regarded as an offence not only against a person but against the whole state. These offences are designated by statute, which also defines maximum punishment in each case; they demand a more formal

hearing than ordinary (summary) offences.

Many offences can lead to either a summary or an indictable charge. The choice is up to the Crown prosecutor.

Ordinary (summary) offences are those not expressly made indictable; they are, as a rule, minor. All provincial statutes and municipal bylaws are in this category (such as offences against traffic and liquor laws, and breaches of the peace). Maximum sentence for a summary offence is a \$500 fine and/or six months' imprisonment.

Indictable offences are usually classified for statistical purposes as:

- (1) Criminal Code offences, such as
 - (i) against the person (abduction, kidnapping, assaults, criminal negligence, incest, rape, libel, murder)
 - (ii) against property, with violence (breaking and entering, robbery, extortion)
 - (iii) against property, without violence (fraud, embezzlement, theft, receiving stolen goods)
 - (iv) malicious offences against property (arson, other malicious damages to property)
 - (v) forgery and offences against currency.
- (2) Federal statutes, such as offences against the Customs Act, Excise Act, Food and Drug Act, Narcotic Control Act, Post Office Act.

Summary offences are classified as:

- (a) Criminal Code (e.g. common assault, drunk and disorderly conduct, impaired driving, vagrancy)
- (b) Federal statutes (Customs Act, Juvenile Delinquents Act, Unemployment Insurance Act, Lord's Day Act)
- (c) Provincial statutes (game and fisheries offences, traffic offences, liquor control offences)
- (d) Municipal bylaws (intoxication, traffic offences).

Footnotes

¹In Canada criminal law is under federal jurisdiction and technically only acts in contravention of federal law are called "crimes". Acts against provincial statutes are referred to as "offences". In this chapter however, the terms crimes and offences are used interchangeably except where specified.

²Black, D.J., "Production of Crime Rates", American Sociological Review, Vol. 35, 1970.

³Studies on Imprisonment, Law Reform Commission of Canada, Ottawa, 1976.

⁴Black, D.J., and Russ, A.J., "Police Control of Juveniles", American Sociological Review, Vol. 35, 1970.

⁵Victimization surveys ask population samples if they have been victims of a crime (whether it was reported or not) within a given period of time. See also Data Sources for Social Indicators of Victimization Suffered by Individuals, OECD Social Indicator Development Programme, Special Studies No. 3, OECD, Paris, 1976; and Ennis, P.H., Criminal Victimization in the United States; A Report of a National Survey, President's Commissions on Law Enforcement and the Administration of Justice, Washington, D.C., 1967.

⁶Courtis, M.C., Attitudes to Crime and the Police in Toronto, Centre of Criminology, University of Toronto, Toronto, 1970.

⁷Skogan, W.G., "Dimensions of the Dark Figure of Unreported Crime", Crime and Delinquency, Vol. 23, No. 1, 1977.

⁸Ibid.

⁹Giffen, P.J., "Official Rates of Crime and Delinquency", in McGrath, W.T., ed., Crime and Its Treatment in Canada, Second Edition, Macmillan of Canada, Toronto, 1976.

¹⁰Actual offences represent the number of reported and recorded offences that were not unfounded. Unfounded offences are reported offences which the police calculate did not in fact occur.

¹¹Blanchard, J., and Cassidy, R.G., Crime and the Criminal Process in Canada: 1880-1970, CANJUS Project Report No. 21, Ministry of the Solicitor General, Ottawa, 1975.

¹³Walker, N., *Crimes, Courts and Figures: An Introduction to Criminal Statistics*, Penguin Books, Middlesex, England, 1971.

¹⁴Hagan, J., *The Disreputable Pleasures*, McGraw-Hill-Ryerson, Toronto, 1977.

¹⁵The change in clearance rates between 1966-70 is explained primarily by improvements in police reporting practices.

¹⁶1973 was the last year that Statistics Canada published these data. *Statistics of Criminal and Other Offences Catalogue 85-201, 1962-73*.

¹⁷Teevan, J.J., "Deterrent Effects of Punishment for Break, Enter and Theft", in *Fear of Punishment; Deterrence*, Law Reform Commission of Canada, Ottawa, 1976.

¹⁸Teevan, J.J., "Deterrent Effects of Punishment: The Canadian Case", in Boydell, C.L., Grindstaff, C.F., and Whitehead, P.C., ed, *Deviant Behaviour and Societal Reaction*, Holt, Rinehart and Winston of Canada Ltd., Toronto, 1972.

¹⁹This section was prepared by Daniel J. Koenig, Department of Sociology, University of Victoria. The author stresses that the analyses, views and implications discussed within this section are those of the author. Professor Koenig is also grateful to the Social Sciences and Humanities Research Council of Canada which supported him, in part, while this paper was being prepared.

²⁰Kelling, G.L., Pate, T., Dieckman, D., and Brown, C.E., *Kansas City Preventive Patrol Experiment: A Summary Report*, Police Foundation, Washington, D.C., 1974.

²¹Brenner, M.H., "Effects of the Economy on Criminal Behaviour", in *Economic Crises and Crime*, United Nations Social Defense Research Institute, Rome, 1976.

²²Is Canada Ready for the Wired City, *Science Council of Canada*, Ottawa, November 1978.

²³Civil Justice in Canada, Part I: A Statistical Study, *Research Study No. 8*, by McKie, C., and Reed, P., *Justice Statistics Division*, Statistics Canada, Ottawa.

²⁴It is important to note that the more difficult the case the more likely that lawyers will be involved.

TABLE 9.1
Crime rates, by province, 1978

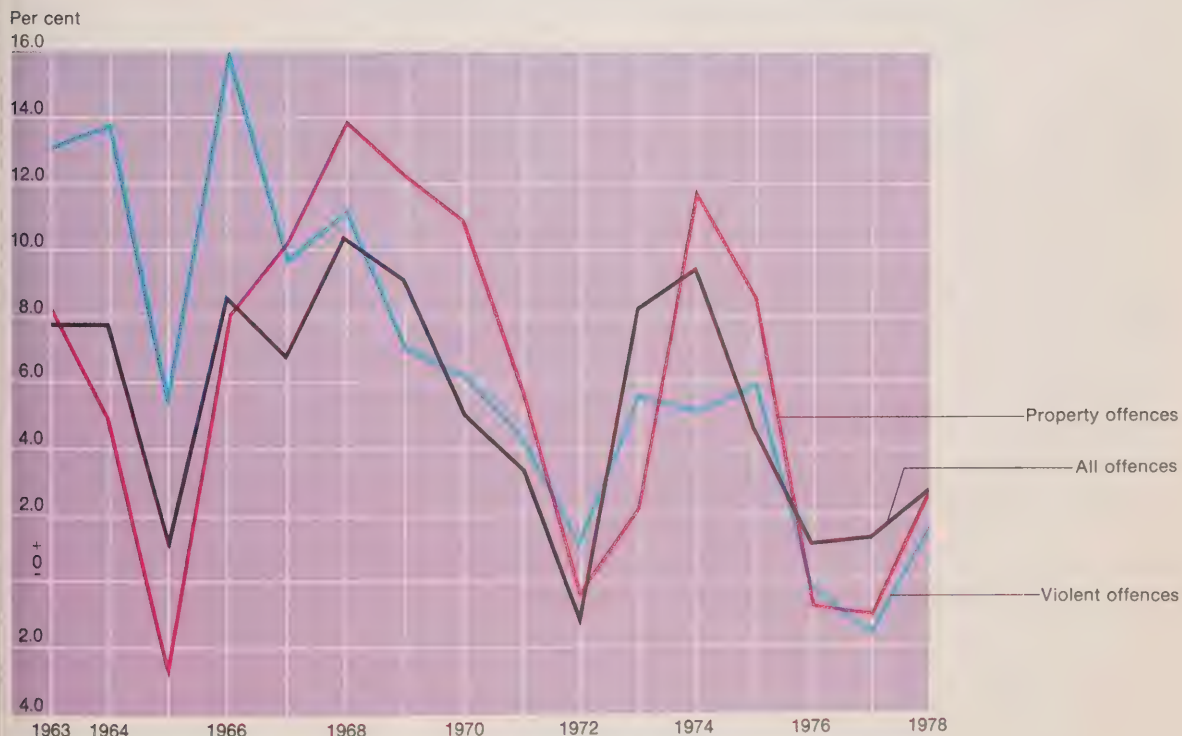
	All offences		Violent offences		Property offences		All other offences	
	Rate ¹	% change 1970-78	Rate ¹	% change 1970-78	Rate ¹	% change 1970-78	Rate ¹	% change 1970-78
Newfoundland	6,402.1	22.8	458.6	27.5	2,676.7	10.3	3,266.8	34.8
Prince Edward Island	9,309.8	39.3	344.2	32.8	2,513.1	43.2	6,452.5	32.2
Nova Scotia	10,207.4	60.0	523.1	20.7	3,285.9	58.6	6,398.4	65.2
New Brunswick	7,217.1	39.3	433.6	35.6	2,712.3	39.9	4,071.2	39.2
Quebec	6,087.2	30.5	400.9	31.9	3,648.0	41.7	2,038.3	14.0
Ontario	10,262.0	31.0	621.1	16.6	4,912.7	31.6	4,728.2	32.5
Manitoba	10,339.2	26.9	567.4	33.3	5,155.3	33.6	4,616.5	19.5
Saskatchewan	13,962.2	60.2	593.1	23.7	4,735.5	33.0	8,633.6	84.6
Alberta	13,784.2	28.2	778.4	14.7	5,486.4	17.7	7,519.4	39.0
British Columbia	13,324.2	18.7	871.0	22.0	7,000.1	24.5	5,453.1	11.3
Canada ²	9,820.5	33.1	591.8	23.6	4,672.8	33.4	4,555.9	34.6

¹ Rate per 100,000 persons.

² Includes Yukon and Northwest Territories.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1970 and 1978.

CHART 9.2
Annual changes in crime rates, 1963-78¹



¹ Figures represent the percentage increase or decrease in the crime rate from the preceding year.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1962-78.

TABLE 9.3
Crime rates for selected offences, 1962-78

	1962	1966	1970	1974	1976	1977	1978
	<i>rate per 100,000 population¹</i>						
Murder	1.2	1.1	2.0	2.4	2.7	2.7	2.8
Attempted murder	0.4	0.7	1.2	2.3	3.0	2.9	3.0
Manslaughter	0.3	0.1	0.2	0.2	0.2	0.3	0.2
Rape	3.1	3.3	5.1	8.1	7.9	8.0	8.5
Other sexual offences	32.7	40.7	46.7	41.4	38.0	38.9	40.8
Wounding	6.8	4.9	7.7	9.4	8.6	8.8	9.2
Assault (not indecent)	149.7	267.5	363.1	422.1	445.4	437.4	443.5
Robbery	26.6	28.5	54.6	75.5	86.8	83.6	83.3
Breaking and entering	441.8	510.3	834.4	1,039.7	1,161.1	1,162.0	1,185.5
Theft of motor vehicle	180.2	198.1	294.9	371.2	379.2	361.7	354.0
Theft	1,082.9	1,330.6	2,013.3	2,401.0	2,609.4	2,579.5	2,671.7
Possession of stolen goods	24.9	30.3	56.1	68.2	76.5	79.7	83.3
Fraud	161.6	188.9	315.9	338.0	373.3	367.7	377.7
Prostitution	8.2	10.8	8.9	14.5	12.3	12.2	7.6
Gaming and betting	13.0	11.4	8.6	14.5	16.2	14.9	11.8
Offensive weapons	14.0	18.2	30.2	48.2	58.5	57.6	68.8
Other Criminal Code offences	623.9	866.1	1,157.0	1,633.8	1,807.5	1,884.0	1,947.8
Drug offences	5.4	7.1	88.2	261.0	272.2	282.7	258.8
Other federal statutes ²	162.2	172.7	171.4	197.8	218.5	282.4	312.0
Provincial statutes ²	1,053.9	1,449.4	1,576.6	1,642.7	1,590.1	1,629.7	1,696.6
Municipal bylaws ²	294.3	329.7	343.2	362.2	277.7	263.0	252.0
All offences	4,287.1	5,470.4	7,379.2	8,954.2	9,445.2	9,559.8	9,820.0

¹ Population for intercensal years based on Statistics Canada estimates as of June 1.

² Excludes traffic offences.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1962-78.

TABLE 9.4
Crime rates by size of municipality, 1977

Population	Violent offences		Property offences		Other offences		All offences	
	Rate ¹	% change 1970-77	Rate ¹	% change 1970-77	Rate ¹	% change 1970-77	Rate ¹	% change 1970-77
250,000 and over	677.5	+3.4	5,428.8	+3.7	3,189.5	-0.4	9,295.8	+2.1
100,000-250,000	655.9	+5.4	5,409.6	+21.1	5,388.1	+89.0	10,141.8	+26.2
50,000-100,000	477.6	+18.4	5,366.5	+43.0	3,699.7	+28.0	9,543.8	+35.1
25,000- 50,000	560.9	+55.5	5,042.1	+46.8	4,235.7	+82.5	9,838.7	+60.1
10,000- 25,000	508.0	+42.9	4,600.8	+54.3	4,254.3	+47.3	9,363.1	+50.0
5,000- 10,000	440.5	+38.7	3,727.0	+46.4	4,119.2	+29.4	8,286.7	+37.1
2,500- 5,000	514.4	+39.0	3,364.2	+41.7	7,140.3	+60.2	11,018.9	+53.3
750- 2,500	537.2	-9.9	3,405.0	+57.3	7,655.5	+67.2	11,597.5	+58.8

¹ Rate per 100,000 persons.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1977.

TABLE 9.5
Clearance rates, 1966-78

	1966	1970	1974	1976	1977	1978
	<i>per cent</i>					
Violent offences:						
Cleared by charge ¹	38.8	34.5	33.1	32.6	34.2	34.4
Cleared otherwise ²	33.3	38.0	38.3	36.8	36.7	36.2
Offences against property:						
Cleared by charge	20.6	19.1	18.2	18.9	18.9	19.6
Cleared otherwise	7.7	8.9	8.9	9.2	8.9	8.7
All Criminal Code offences:						
Cleared by charge	27.7	22.0	21.1	21.7	22.1	22.4
Cleared otherwise	14.1	13.9	13.6	13.5	13.2	13.1
Non-Criminal Code offences:						
Cleared by charge	86.5	69.9	67.5	66.7	69.9	70.9
Cleared otherwise	6.5	23.3	24.3	25.6	23.3	23.0
All offences:						
Cleared by charge	47.0	36.1	33.9	32.9	34.3	34.8
Cleared otherwise	10.5	16.7	16.6	16.5	15.8	15.6

¹An offence is cleared by charge when an information is laid against at least one person.

²An offence is cleared otherwise when the police are able to identify an offender but are not able to lay an information or prosecute the offender because of reasons beyond police control; for example, the offender may have died or have diplomatic immunity, the complainant may refuse to prosecute, or an essential witness may not be available.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1966-78.

TABLE 9.6
Clearance rates for selected offences, 1978

	Offences cleared by charge	Offences cleared otherwise	Total
	<i>per cent</i>		
Murder ¹	76.7	9.8	86.5
Attempted murder	79.9	3.5	83.4
Assault (not indecent)	34.2	44.4	78.6
Rape	44.7	17.0	61.7
Robbery	29.2	3.5	32.7
Breaking and entering	17.3	7.1	24.4
Theft — over \$200	8.1	4.7	12.8
under \$200	15.5	9.3	24.8
Theft of motor vehicle	18.5	8.4	26.9
Fraud	51.9	16.9	68.8
Prostitution	93.4	0.8	94.2
Gaming and betting	91.3	2.5	93.8
Drug offences	78.7	11.2	89.9
Liquor offences	75.5	23.0	98.5
Municipal bylaws	45.0	33.2	78.2

¹Includes manslaughter and infanticide.

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1977.

TABLE 9.7
Disposition of persons convicted of indictable offences,
1973¹

	All offences	Violent offences	Property offences
Persons charged	53,964	5,691	38,458
Persons convicted	40,761	4,089	29,378
Persons convicted as a % of persons charged	75.5	71.9	76.4
	<i>per cent</i>		
Suspended sentence without probation	5.8	4.1	6.5
Suspended sentence with probation	23.5	17.5	26.2
Fine	34.3	26.1	34.5
Jail ²	32.1	37.9	30.5
Penitentiary:			
Less than 5 years	3.1	7.7	2.2
5 years and over	1.0	5.6	0.1
Life	0.1	0.9	—
Penitentiary total	4.2	14.1	2.3
Institution total	36.4	49.7	32.8
Total	100.0	100.0	100.0

¹Does not include Quebec or Alberta.

²Includes persons sentenced to reformatories, training schools and industrial farms.

Source: *Statistics of Criminal and Other Offences*, Catalogue 85-201, 1973.

CHART 9.8
Adults and juveniles charged, by sex, 1970 and 1978



Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1970 and 1978.

TABLE 9.9
Disposition for persons convicted of indictable offences, 1962-73

	Suspended without probation	Suspended with probation	Fine	Jail ¹	Penitentiary		Total
					2-5 years	More than 5 years	
1962	12.1	17.6	22.0	39.7	7.3	1.3	100.0
1964	11.6	18.6	24.0	37.8	6.5	1.3	100.0
1966	12.5	18.7	28.0	34.4	5.3	1.0	100.0
1968	12.6	17.7	27.3	36.1	5.2	1.0	100.0
1970	7.8	24.6	31.6	31.4	3.8	0.8	100.0
1971	7.0	24.6	32.7	31.5	3.3	0.9	100.0
1972	7.6	24.5	33.2	30.8	2.9	1.1	100.0
1973	5.8	23.5	34.3	32.1	3.1	1.1	100.0

¹Includes reformatories and training schools.

Source: *Statistics of Criminal and Other Offences*, Catalogue 85-201, 1962-73.

TABLE 9.10
Homicide statistics: relationship of victim to suspect, method of commission, and age and sex of victims, 1961-77

	1961-67	1968-74	1975-77
	<i>per cent</i>		
Relationship of suspect to victim:			
Domestic	43.3	37.3	32.9
Social or business	31.0	29.6	30.3
No known relationship	6.8	7.3	8.2
During commission of another crime	10.9	10.6	9.3
Unsolved	8.0	15.1	19.4
Total	100.0	100.0	100.0
Method of commission:			
Shooting	43.2	44.0	38.9
Beating	23.7	21.7	22.3
Stabbing	17.5	18.8	19.7
Strangling	7.0	6.7	6.9
Other and not known	8.6	8.9	12.2
Total	100.0	100.0	100.0
Age and sex of victims (as percentage of all victims):			
15 years and under — Male	6.8	5.3	5.3
— Female	6.7	5.2	4.5
16-19 years — Male	2.5	4.5	4.8
— Female	3.2	4.1	3.6
20-29 years — Male	11.3	14.9	18.7
— Female	9.5	9.6	8.6
30-39 years — Male	12.2	11.9	12.3
— Female	7.5	6.6	6.4
40-49 years — Male	9.0	10.9	10.3
— Female	7.5	5.0	4.2
50 years and over — Male	15.7	14.5	14.7
— Female	8.0	7.5	6.3
All ages — Male	57.5	62.0	66.2
— Female	42.4	38.0	33.7
Total	100.0	100.0	100.0

Source: *Homicide Statistics*, Catalogue 85-205, 1977; *Homicide in Canada: A Statistical Synopsis*, Catalogue 85-505, 1976.

TABLE 9.11
Releases from penitentiaries, 1970-76

	1970	1972	1974	1976
	<i>per cent</i>			
Expiration of sentence	36.6	19.8	5.7	2.7
Parole	60.2	51.1	31.8	26.7
Mandatory supervision ¹	..	23.7	56.7	66.1
Other ²	3.1	5.5	5.8	4.6
Total	100.0	100.0	100.0	100.0
Total number of releases	4,440	3,412	4,098	3,792

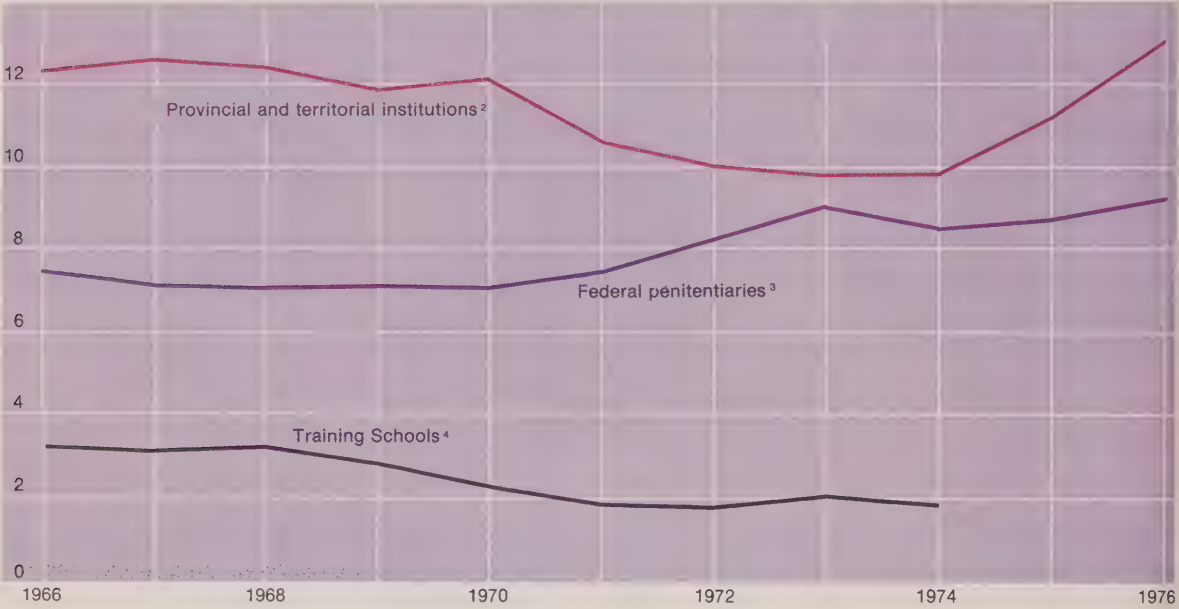
¹Mandatory supervision was introduced in 1970. An inmate released before expiry date because of earned and statutory remission is subject to mandatory supervision until the end of sentence when the term of remission exceeds 60 days.

²Includes court-ordered releases, deaths, transfers to provincial institutions and deportations.

Source: *Correctional Institution Statistics*, Catalogue 85-207, 1970.

CHART 9.12
Population in federal penitentiaries, provincial and territorial correctional institutions and training schools,¹ 1966-76

Population in 000's
 14



¹Data are as of December 31 except where indicated.

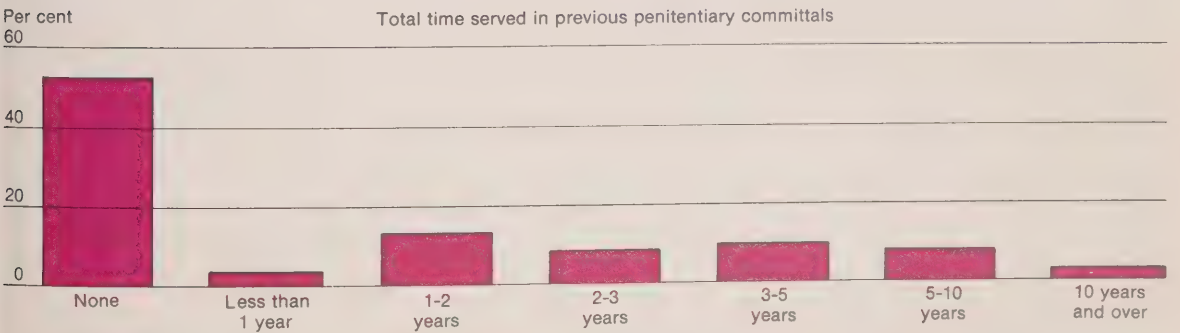
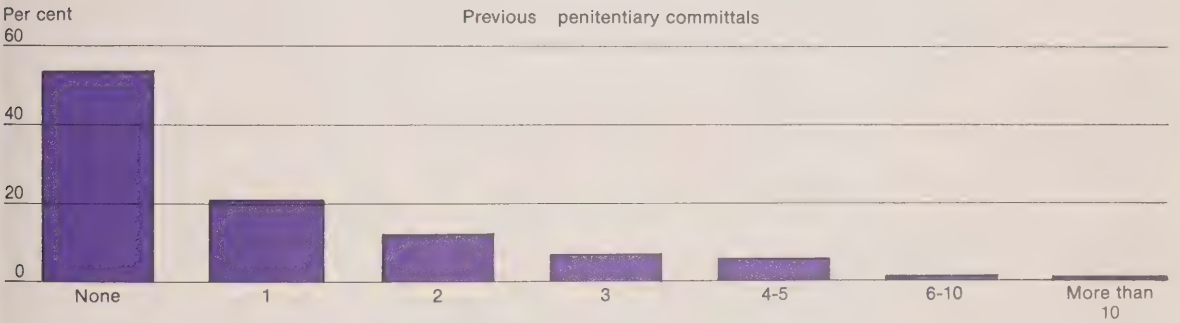
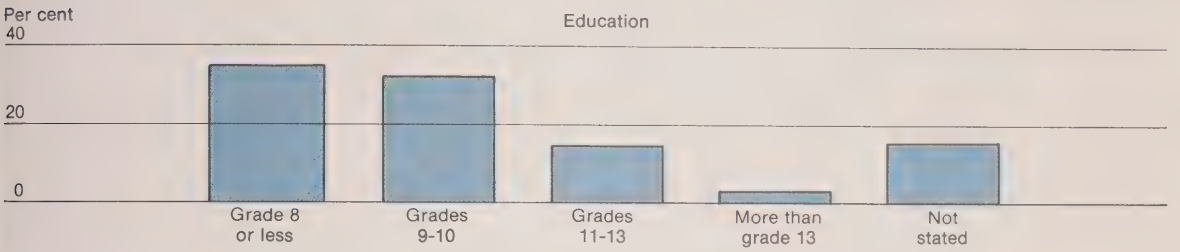
²For 1966-71, data are as of March 31 in all provinces except Quebec. Data for Quebec are as of December 31.

³For 1966-68, data are as of March 31.

⁴British Columbia discontinued training schools in 1969, followed by Alberta in 1970 and Saskatchewan in 1973.

Source: *Correctional Institution Statistics*, Catalogue 85-207, 1966-76.

CHART 9.13
Characteristics of males admitted to federal penitentiaries, 1976



Source: *Correctional Institution Statistics*, Catalogue 85-207, 1976.

TABLE 9.14
Full-time public police employees per 1,000 population,
Canada, the United States and the United Kingdom,
1962-77

	Canada	United States ¹	United Kingdom ²
1962	1.7	1.9 (1.8)	2.0 ³
1966	2.0	2.0 (2.2)	2.3
1970	2.3	2.3 (2.7)	2.6
1971	2.3	2.4 (2.8)	2.8
1972	2.4	2.4 (2.9)	2.8
1973	2.5	2.4 (3.0)	2.9
1974	2.6	2.5 (3.1)	3.0
1975	2.7	2.5 (3.2)	3.2
1976	2.8	2.5	3.2
1977	2.8	2.5	3.2

¹ United States rates are restricted to cities reporting and understate the actual number of public police employees. U.S. parenthetical rates constitute a more comprehensive estimate, including rural, state and federal police.

² From 1971 onwards, part-time employees are counted on a two for one basis. Special constables have been excluded from calculations of these rates. Regular police, civilians, cadets, traffic wardens and civilian search unit have been included in calculating rates for total mid-year U.K. population. Data for 1970, 1972, 1973 and 1977 were provided by Kevin Heal of the Home Office.

³ Figure is for 1961.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77; *Social Trends*, Central Statistical Office, London; *Annual Abstract of Statistics*, Central Statistical Office, London; *Uniform Crime Reports*, U.S. Department of Justice, Washington, *Statistical Abstract of the United States*, U.S. Department of Commerce, Washington, D.C.

TABLE 9.15
Make-up of police forces, 1965-77

	1965	1970	1975	1976	1977
	<i>per cent</i>				
Full-time employees					
Police agents	84.4	83.0	81.6	81.1	80.4
Cadets		1.1	0.9	0.9	0.8
Other full-time employees	15.6	15.9	17.5	18.1	18.7
Total	100.0	100.0	100.0	100.0	100.0
Total, police personnel	37,935	48,548	62,125	63,675	65,037

Source: *Police Administration Statistics*, Catalogue 85-204, 1965-77.

TABLE 9.17
Full-time public police employees per 1,000 population, by province, 1962-77

	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	North-west Territories	Yukon	Canada ¹
1962	1.1	1.0	1.2	1.0	1.6	1.7	1.4	1.2	1.5	1.7	5.5	3.9	1.7
1966	1.2	1.1	1.3	1.1	2.0	1.9	1.5	1.5	1.7	1.7	4.6	4.2	2.0
1970	1.3	1.4	1.6	1.5	2.4	2.1	1.8	1.9	1.9	1.9	4.0	3.9	2.3
1971	1.3	1.4	1.5	1.5	2.5	2.2	2.1	1.8	2.0	2.0	3.6	4.2	2.3
1972	1.4	1.5	1.6	1.6	2.6	2.3	1.9	2.8	2.0	2.1	3.6	4.2	2.4
1973	1.4	1.6	1.6	1.7	2.8	2.8	2.0	3.1	2.2	2.2	4.2	3.8	2.5
1974	1.5	1.7	1.7	1.8	2.8	2.8	2.2	3.2	2.2	2.2	5.1	4.5	2.6
1975	1.5	1.9	1.7	1.9	2.9	3.0	2.4	3.3	2.3	2.4	5.9	4.6	2.7
1976	1.7	1.8	1.8	1.9	3.0	3.1	2.5	3.5	2.7	2.1	5.9	5.0	2.8
1977	1.7	1.9	1.9	2.0	3.0	2.9	2.5	3.4	2.7	2.5	5.3	5.5	2.8

¹ Figures for Canada include CNR and CPR police, as well as certain administrative and training divisions of the R.C.M.P. These are excluded in calculating provincial rates, the rates for Canada are approximately fifteen-hundredths (.15) higher than the overall weighted rate of the provinces.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77.

TABLE 9.16
Public police expenditures as a proportion of
consolidated government expenditures, 1971-77¹

	Canada	United States	United Kingdom
1971	.0181	.0164	.018
1972	.0178	.0172	.0189
1973	.0180	.0176	.0182
1974	.0200	.0174	.0183
1975	.0177	.0171	.0177
1976	.0185	..	.0177
1977	..	..	.0194

¹ United Kingdom data are reported as occurring in the calendar year after their actual occurrence. This has been done to make them more comparable with the Canadian and United States data. Canadian data are for the fiscal year closing (usually March 31) in the years reported, while United States data are for the fiscal years closed during the 12 months ending June 30th of the year for which they are reported.

Source: *Consolidated Government Finance*, Catalogue 68-202, 1971-76; *Annual Abstract of Statistics*, U.K. Central Statistical Office, London; *Statistical Abstract of the United States*, U.S. Department of Commerce, Washington, D.C., 1971-75.

TABLE 9.18
Consolidated government expenditures on public police services as a proportion of Gross National Product, 1971-77¹

	Canada	United States	United Kingdom
1971	.0066	.0062	.0085
1972	.0068	.0065	.0088
1973	.0075	.0066	.0086
1974	.0076	.0064	.0086
1975	.0072	.0067	.0093
1976	.0080	..	.0097
1977	..	..	.0103

¹For Canada, the proportion was calculated by dividing expenditures for the fiscal year closing in the calendar year, by the GNP for the preceding calendar year (which included the first nine months of the fiscal year). The same procedure was followed for the United States, although the fiscal year varies somewhat from that of Canada (see footnote Table 9.16). U.K. data for both expenditures and GNP were derived from calendar year data. In order to make them comparable with Canadian and U.S. data, they are reported as occurring in the calendar year after their actual occurrence.

Source: *Economic Review*, Catalogue F1-21, Department of Finance, Ottawa, April 1978; *Consolidated Government Finance*, Catalogue 68-202, 1971-76; *Annual Abstract of Statistics*, U.K. Central Statistical Office, London; *Statistical Abstract of the United States*, U.S. Department of Commerce, Washington, D.C.

TABLE 9.19
Per capita expenditures on public police service, in constant units of domestic currency (1971 = 100)¹

	Canada	United States ²	United Kingdom
	<i>dollars</i>		<i>pounds</i>
1971	28	31	7.4
1972	30	33	7.9
1973	34	36	8.0
1974	37	36	8.5
1975	35	37	9.1
1976	40	..	9.6
1977	..	..	10.3

¹Implicit prices indexes — Gross National Expenditures for Canada and U.S., retail price index for U.K. Data on expenditures are reported for Canada and the U.S. for the calendar year in which the fiscal year ended, but these expenditures are deflated by and divided by the total population for the preceding calendar year (which included at least one half of the fiscal year). U.K. expenditures are for the calendar year, and calculations used deflators and total population figures for the same year. However, to make the data more comparable to Canadian and U.S. data, U.K. data are reported for the calendar year after their actual occurrence. See footnote 1, Table 9.16 for more detail.

²U.S. calculations were made at 1958=100, which were subsequently inflated by 1.414 to reflect the fact that the 1971 dollar was equivalent to slightly less than 71 cents in 1958.

Source: *Economic Review*, Catalogue F1-21, Department of Finance, Ottawa, April 1978; *Consolidated Government Finance*, Catalogue 68-202, 1971-76; *Annual Abstract of Statistics*, U.K. Central Statistical Office, London; *Social Trends*, U.K. Central Statistical Office, London; *Statistical Abstract of the United States*, U.S. Department of Commerce, Washington, D.C.

TABLE 9.20
Per capita expenditures,¹ proportion of provincial-local consolidated government expenditures, and proportion of personal income per capita expended on public police services, by province, 1975-76

	Per capita expenditures	Proportion of consolidated government expenditures	Proportion of personal per capita income
	<i>dollars</i>		
Newfoundland	17	.0089	.0036
Prince Edward Island	20	.0110	.0044
Nova Scotia	31	.0189	.0058
New Brunswick	23	.0140	.0046
Quebec	56	.0297	.0089
Ontario	47	.0260	.0064
Manitoba	32	.0178	.0051
Saskatchewan	33	.0182	.0049
Alberta	38	.0176	.0054
British Columbia	35	.0177	.0048

¹Population figures are from the 1976 *Census of Canada*.

Source: *Economic Review*, Catalogue F1-21, Department of Finance, Ottawa, April 1978; *Consolidated Government Finance*, Catalogue 68-202, 1975.

TABLE 9.21
Full-time, regular, sworn public police per 1,000 population, 1962-77

	Canada	United States ¹	United Kingdom ²
1962	1.5	1.7	1.7
1966	1.7	1.7	1.8
1970	1.9	2.0	1.9
1971	1.9	2.1	2.0
1972	2.0	2.0	2.0
1973	2.1	2.1	2.1
1974	2.2	2.1	2.1
1975	2.2	2.1	2.2
1976	2.2	2.0	2.2
1977	2.3	2.1	2.3

¹U.S. rates are restricted to cities reporting and actual strength appears to be understated. See footnote 1, Table 9.14 for an estimate of under-reporting.

²Full-time regular police only (strength for ordinary duty). Special constables, cadets, traffic wardens and civilians are excluded. The 1977 figure was provided by Kevin Heal of the Home Office.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77; *Social Trends*, U.K. Central Statistical Office, London; *Annual Abstract of Statistics*, U.K. Central Statistical Office, London; *Uniform Crime Reports*, U.S. Department of Justice, Washington, D.C.

TABLE 9.22
Percentage of full-time public police personnel who were regular sworn police, 1962-77

	Canada	United States ¹	United Kingdom ²
1962	85.4	90.1	84.1 ³
1966	84.4	89.0	78.8
1970	83.0	86.8	74.2
1971	82.9	86.6	71.9
1972	81.7	86.7	71.9
1973	81.8	85.4	71.0
1974	82.7	84.7	68.0
1975	81.6	83.4	68.6
1976	81.1	83.5	69.6
1977	80.4	82.5	70.9

¹U.S. rates are restricted to cities reporting and actual strength appears to be understated. See footnote 1, Table 9.14 for an estimate of under-reporting.

²Full-time regular police only (strength for ordinary duty). Special constables, cadets, traffic wardens and civilians are excluded. Figures for 1970, 1972, 1973 and 1977 were provided by Kevin Heal of the Home Office.

³The figure for the United Kingdom is taken from 1961 data.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77; *Social Trends*, U.K. Central Statistical Office, London; *Uniform Crime Reports*, U.S. Department of Justice, Washington, D.C.

TABLE 9.23
Females as percentage of regular sworn public police, 1962-77

	Canada	United States ¹	United Kingdom ²
1962	0.6	..	3.0
1966	0.6	..	3.7
1970	0.5	..	3.8
1971	0.5	1.4	4.0
1972	0.4	1.5	4.2
1973	0.5	1.7	4.2
1974	0.7	2.0	4.7
1975	1.2	2.1	5.5
1976	1.4	2.4	6.5
1977	1.7	2.7	7.3

¹U.S. rates are restricted to cities reporting and actual strength appears to be understated. See footnote 1, Table 9.14 for an estimate of under-reporting.

²Full-time regular police only (strength for ordinary duty). Special constables, cadets, traffic wardens and civilians are excluded. The 1977 figure was provided by Kevin Heal of the Home Office.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77; *Annual Abstract of Statistics*, U.K. Central Statistical Office, London; *Uniform Crime Reports*, U.S. Department of Justice, Washington, D.C.

TABLE 9.24
Females as percentage of non-sworn full-time public police personnel, 1962-77

	Canada	United States ¹
		<i>per cent</i>
1962	44.6	..
1966	46.7	..
1970	50.4	..
1971	50.3	53.6
1972	51.4	54.8
1973	58.9	54.0
1974	60.8	61.3
1975	62.2	55.2
1976	62.4	60.5
1977	59.3	58.3

¹U.S. rates are restricted to cities reporting and actual strength appears to be understated. See footnote 1, Table 9.14 for an estimate of under-reporting.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77; *Uniform Crime Reports*, U.S. Department of Justice, Washington, D.C.

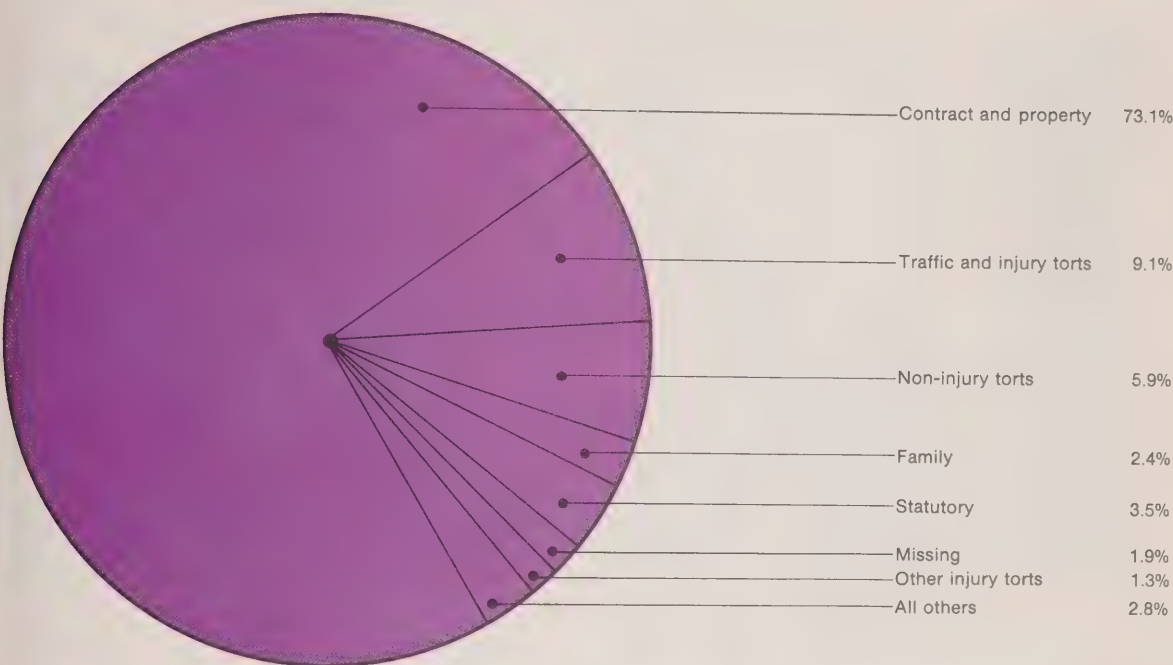
TABLE 9.25
Females as percentage of full-time public police personnel employees who were regular sworn police, 1962-77

	Canada	United States ¹
		<i>per cent</i>
1962	7.8	..
1966	6.3	..
1970	4.5	..
1971	4.4	14.4
1972	4.2	15.2
1973	3.4	15.6
1974	5.5	15.3
1975	7.7	16.1
1976	8.6	16.8
1977	10.6	17.9

¹U.S. rates are restricted to cities reporting and actual strength appears to be understated. See footnote 1, Table 9.14 for an estimate of under-reporting.

Source: *Police Administration Statistics*, Catalogue 85-204, 1962-77; *Uniform Crime Reports*, U.S. Department of Justice, Washington, D.C.

Chart 9.26
Distribution of civil cases by cause of action¹



¹Does not include adoptions, divorces, bankruptcies (when filed separately), reciprocal enforcements, child custody cases, and probates.

Source: *Civil Justice in Canada*, by C. McKie and P. Reed, Research Paper No. 8, Justice Statistics Division, Statistics Canada, Ottawa, 1979

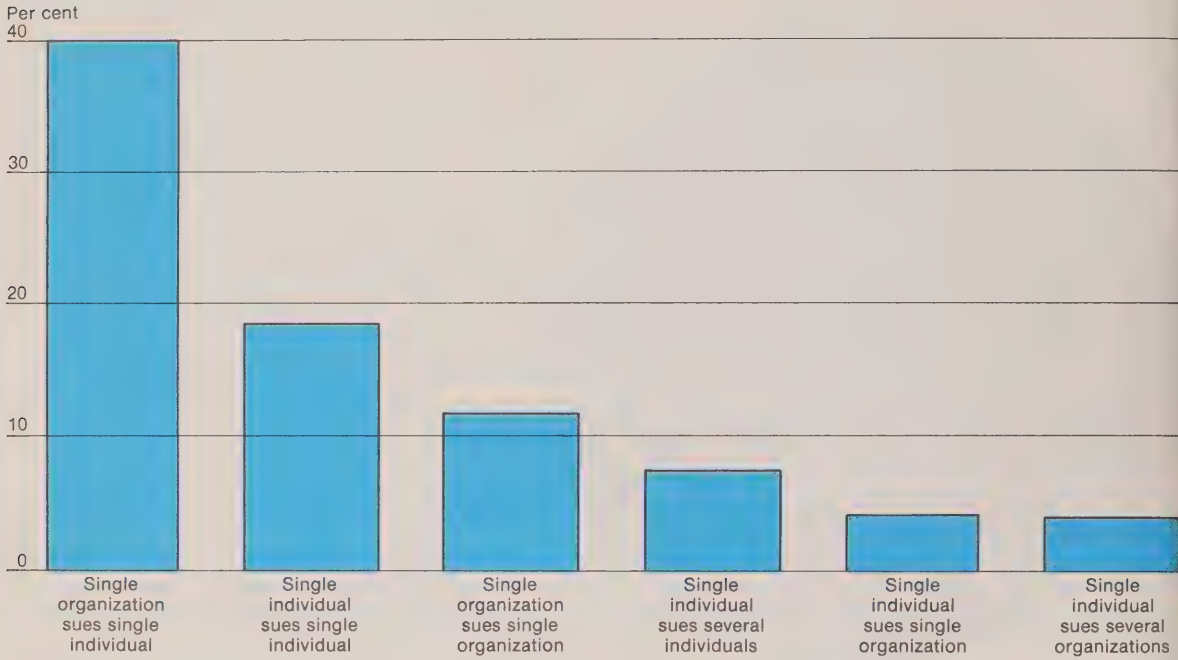
TABLE 9.27
Duration of civil cases by selected factors

	Less than 3 months	3 months to less than 6 months	6 months to less than 1 year	1 year to less than 2 years	2 years or more	Total
	<i>per cent</i>					
Type of case: ¹						
Organization sues individual	73.2	13.7	8.4	3.2	1.5	100.0
Organization sues organization	64.1	14.6	9.4	7.0	4.8	100.0
Individual sues individual	46.2	15.4	16.5	15.3	6.6	100.0
Individual sues organization	32.3	11.2	18.9	20.0	17.6	100.0
Legal representation:						
Neither party represented	90.6	7.5	1.3	0.4	0.3	100.0
Plaintiff only represented	72.5	15.0	8.4	3.3	0.9	100.0
Defendant only represented	54.5	31.8	4.5	—	9.1	100.0
Both parties represented	16.1	14.9	24.6	27.3	17.1	100.0
Judgment awarded:						
Decision for plaintiff	66.6	13.7	9.8	6.9	3.0	100.0
Decision for defendant	27.4	9.4	18.0	20.6	24.6	100.0
Decision for both	—	13.3	40.0	40.0	6.7	100.0
Settled out of court	25.7	13.1	19.6	25.6	16.2	100.0
Discontinued or withdrawn	38.4	19.3	20.8	15.2	6.3	100.0
Not taken — available	9.5	7.7	16.6	29.6	36.7	100.0

¹These four types represent just over 85% of all cases.

Source: *Civil Justice in Canada*, Research Paper No. 8, by C. McKie and P. Reed, Justice Statistics Division, Statistics Canada, Ottawa, 1979.

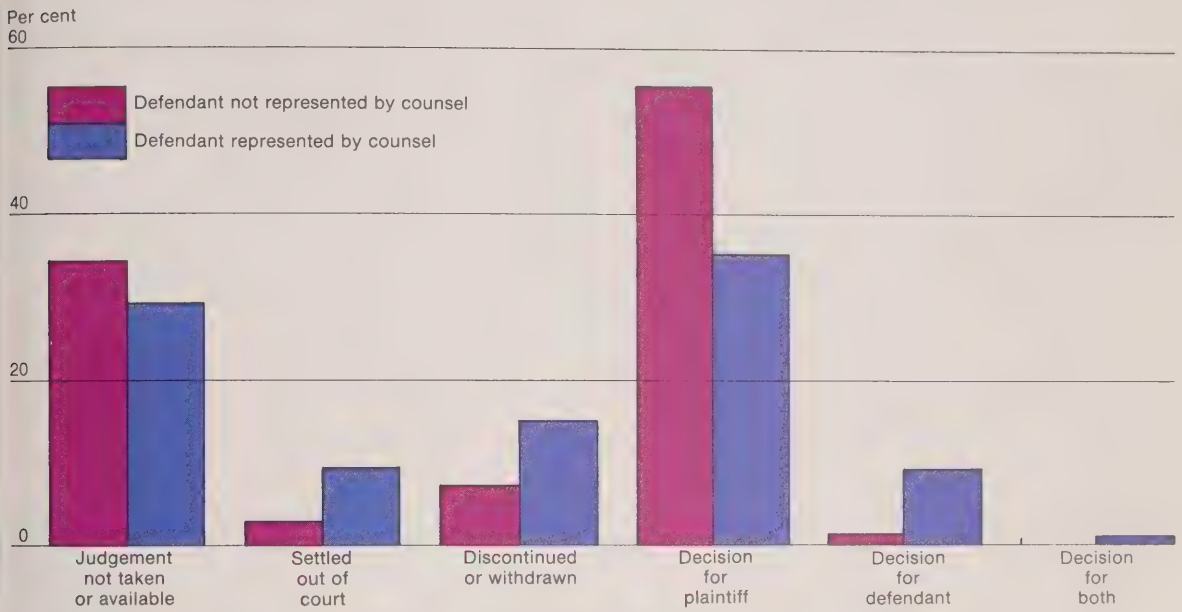
CHART 9.28
Civil cases by type of action¹



¹The actions listed account for 85% of all actions. No other combination of parties accounted for more than 3% of all actions.

Source: *Civil Justice in Canada*, by C. McKie and P. Reed, Research Paper No. 8, Justice Statistics Division, Statistics Canada, Ottawa, 1979.

CHART 9.29
Disposition of civil cases in which the defendant is/is not represented by counsel



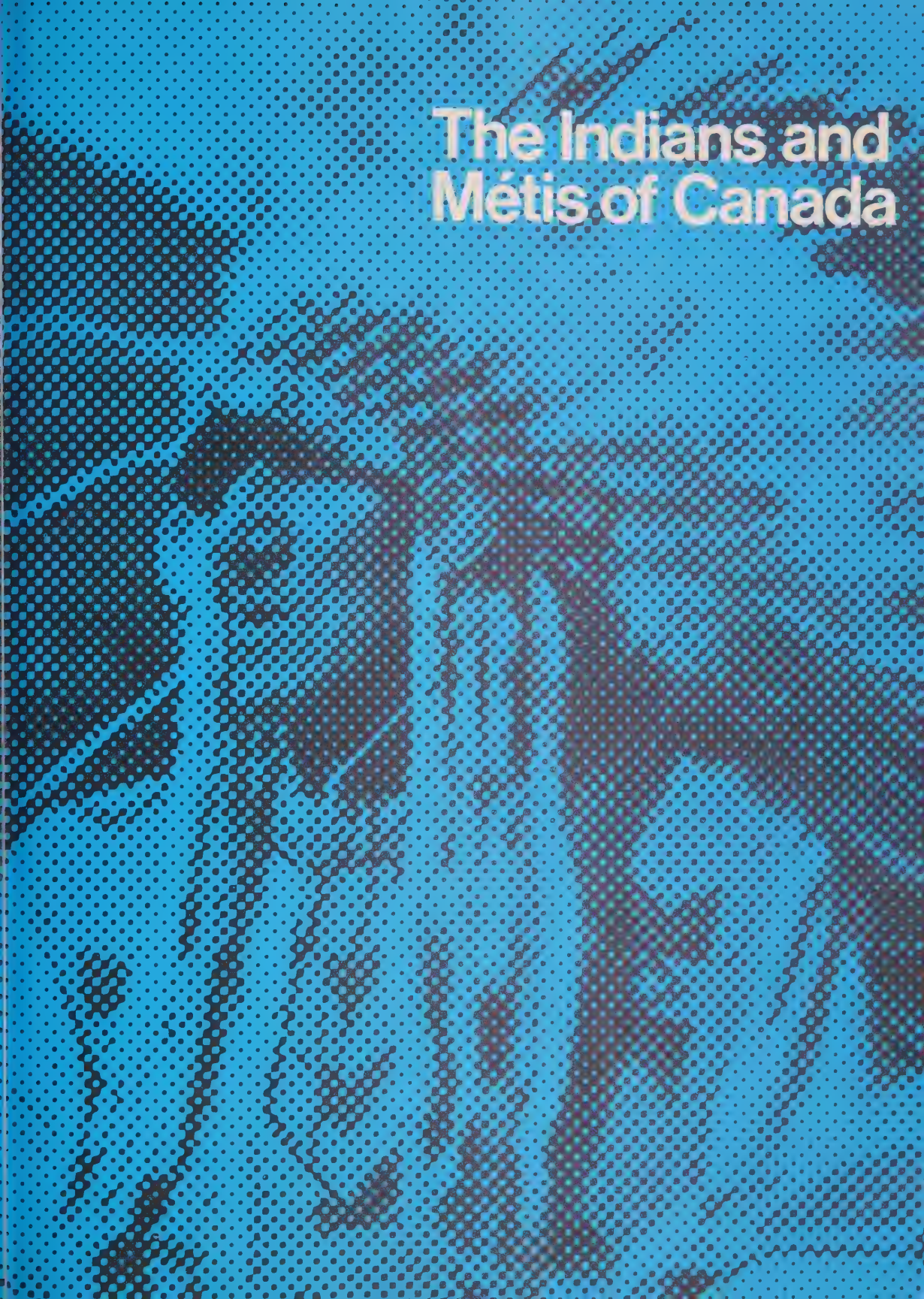
Source: *Civil Justice in Canada*, by C. McKie and P. Reed, Research Paper No. 8, Justice Statistics Division, Statistics Canada, Ottawa, 1979.

TABLE 9.30
Presence of counsel related to selected factors

	Counsel present for either party	Neither party represented by counsel
	per cent	
Type of case:		
Contract and property	72.5	79.7
Traffic injury torts	10.3	0.7
Other injury torts	1.4	—
Non-injury torts	5.9	6.5
Family	2.8	0.2
Statutory	2.6	10.1
All other	4.6	2.9
Total	100.0	100.0
Court level:		
Small Claims or Debts	9.0	93.8
County or District	46.4	4.2
High, Supreme or Queen's Bench	38.4	1.7
Appeal Court	6.2	0.2
Total	100.0	100.0
Award (if any) to plaintiff:		
\$ 1-\$ 49.99	5.1	26.6
\$ 50-\$ 199.99	21.0	51.0
\$ 200-\$ 499.99	20.7	16.1
\$ 500-\$ 999.99	17.1	2.3
\$ 1,000-\$2,999.99	19.1	1.5
\$ 3,000-\$9,999.99	11.3	1.7
\$10,000 and over	5.8	0.8
Total	100.0	100.0

Source: *Civil Justice in Canada*, by C. McKie and P. Reed, Research Paper No. 8, Justice Statistics Division, Statistics Canada, Ottawa, 1979.

The Indians and Métis of Canada



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The Indians and Métis of Canada

This article contributed by Colin Lindsay, Office of the Senior Advisor on Integration, Statistics Canada, Ottawa.

Previous editions of Perspective Canada have included the Inuit in the Native Peoples chapter. However, because there is no new data describing these people, they have not been included in this volume.

The 1970s were turbulent years for Canada's Indians and Métis as they emerged from decades of isolation to become one of Canada's most visible and articulate minority groups.

The gulf between the economic and social conditions of these groups and the rest of the population, however, closed very little during the 1970s, and the prospects for significant improvement in the near future are not particularly bright, primarily because of population trends which will put additional pressure on the already limited housing and employment capacities of many native communities. Furthermore, neither native nor non-native society has yet been able to clearly come to grips with what role Canadian natives will occupy in the Canadian mosaic. How this latter question is resolved will greatly influence what measures might be employed to alleviate tensions and imbalances between native and non-native societies.

The Native Population

When the first European set foot in Canada there were an estimated 200,000 Indians, but by 1901 war and disease had reduced the native population to fewer than 100,000, and there were fears that Indian society would gradually die out.

In the twentieth century, however, the Canadian Indian made a remarkable comeback. Largely because of reductions in infant mortality combined with continued high rates of fertility, the registered Indian population grew to 287,000 by 1976. In addition, there are an estimated 300,000 Métis and non-status Indians in Canada.¹

The 1960-76 period was characterized by particularly rapid growth of the native population, with Indian population growth rates almost double those of the rest of Canada. As a direct result of this native "baby boom", 54% of the registered Indian population in 1976 was under 20 years of age, compared with only 36% for the rest of Canada. It is these young people who will swell the ranks of young adults in the 1980s and put great pressure on the employment and housing capacity of many Indian communities.

One result of this phenomenon may be that more natives will be forced to leave reserves and native communities in search of opportunities in non-native communities. The data in Table 10.6 suggest that there is considerable net out-migration from reserves. Between 1966 and 1976, for example, the number of registered Indians living off reserves increased by 81% while the on-reserve population grew by only 15%. In addition, between 1961 and 1976 the proportion of persons living in urban areas who reported a native mother tongue (including Inuit) increased from 0.7% to 1.5%.²

Social and Economic Conditions

Exhibits 10.6-10.13 highlight some of the major social and economic characteristics of Canada's Indians and Métis.

Unfortunately, a comprehensive set of national statistics

accurately describing the social and economic conditions of Canadian natives is not available, and the value of much of the information that is available is compromised because it often relates only to segments of the native community or is not comparable with similar measures for Canada as a whole.³

Nonetheless, from a close study of available data, a picture of the socio-economic character of Canada's Indians begins to take shape and certain trends become apparent. The most significant of these is that while social conditions within the native community are gradually improving, they are still inferior to conditions in non-native society.

It is important to note, though, that while the comparison of socio-economic conditions in native society with those of all Canada provides a framework for the description of social conditions experienced by Canadian Indians, caution should be exercised in making normative judgments about the quality of life in native society. Standards in native communities may seem to be below those in non-native Canada; however, the goals and demands of Canadian natives in many areas of social concern may be somewhat different from those characteristic of non-natives, and many Indians simply do not aspire to live like non-natives.

Education

The data on native education in Tables 10.6-10.9 show that the educational attainment of Canadian natives is far below that of other Canadians. There are some indications of improvement; for example, both the percentage of all registered Indian students going to school who are enrolled in high school, and the number of registered Indians attending university have increased markedly. On the other hand, the proportion of registered Indians aged 14-18 going to school declined by 12% between 1972 and 1975, and the number of mid-year dropouts tripled between 1974 and 1977, suggesting that the needs of many native students are not being met.

The problems of native education may be closely related to the differences between the values central to contemporary liberal, urban-oriented education and the cultural experiences, traditions, interests, and aspirations of native children. This factor, combined with the discontinuity of socialization and discrimination often associated with the education of native children, has resulted in diminished motivation, increased negativism, poor self-images, and low levels of aspiration, in addition to limited achievement for this group. The result is that many native children have been alienated from their own way of life, without having been prepared in any significant fashion for a different society.⁴

Native Involvement with the Law

The cultural differences between native and non-native societies have ramifications in other realms of social concern. Mark Nagler argued in 1970 that:

"Like many other immigrant groups, Indians recently arrived in the city are so confused by the conflict between the teachings of their elders and those of the white man that they tend to set aside the whole problem of morality as meaningless or insolvable. This absence of generally accepted values among Indians leads to chaos."⁵

In many cases this chaos is manifested in criminal activity, often involving violence, by Indians and Métis. Other

minority groups have been characterized by high levels of contact with the law, but none to the degree experienced by Canadian natives. In 1976, while natives constituted 2.5% of the Canadian population, they made up more than 8.5% of persons incarcerated in federal penitentiaries.⁶ The situation is even more pronounced in the western provinces: natives made up almost 20% of federal inmates in Alberta and one quarter of those in Manitoba and Saskatchewan. In addition, over one third of all persons serving sentences in Alberta correctional institutions were of native descent.⁷

The results of the *Métis and Non-status Indian Crime and Justice Commission Report* provide a further description of native criminal activity and the native offender.⁸

A high proportion of offences committed by natives are violent crimes against the person, and this, combined with the fact that most offences by natives were associated with the consumption of alcohol (90% of penitentiary inmates questioned reported committing their offences while under the influence of alcohol or drugs), suggests that much native crime takes the form of impulsive, lashing-out behaviour by the offender.

Most native offenders in federal penitentiaries committed their offences in urban areas (less than 16% of the offences occurred on reserves), yet most native urban offenders (68%) were migrants from reserves or rural native communities, and in most cases (70%), the native offender had left home by the age of 16.

Native offenders also experienced high levels of unemployment; 57% of those inmates surveyed by the *Métis and Non-status Indian Crime and Justice Commission* reported they were unemployed when they committed their offences. In addition, native offenders tended to be slightly older and considerably less educated than non-native offenders.

There are also a number of major differences in the experience of natives and non-natives in the criminal justice system. Natives, for example, receive more jail sentences than non-native offenders, possibly because they tend to be less aware of their legal rights, and as a result plead guilty more often than non-natives, and because they are often less able to pay fines. Sentences against natives, however, are generally shorter.

Natives also receive fewer paroles and temporary leaves of absence, largely because these releases normally depend on the inmate having either solid employment prospects or a stable home environment — factors characteristic of few native offenders.

Income and Employment

Income and employment are two areas in which the problem of limited data is particularly acute and two factors are primarily responsible. First, because most native communities are isolated and widely dispersed, comprehensive surveys are extremely expensive and time-consuming to conduct; and, second, the concept and definitions of many indicators which are relevant to the analysis of urban industrial life — such as labour force participation, unemployment rates and family income — are not totally appropriate measures of the lifestyles experienced by a significant part of the native community. Enough data do exist, however, to provide some insight into the economic fortunes of Canadian natives.

The *Survey of Métis and Non-status Indians* conducted jointly in 1976 by the Native Council of Canada and the Canada Employment and Immigration Commission⁹ provides some information on the employment of Métis and non-status Indians. The participation rate for these groups

(especially for males) is almost as high as that for non-natives, but their unemployment rate is more than four times that of non-natives. In addition, the actual number of employed non-natives as a proportion of the total working-age Canadian population is 40% higher than the figure for Métis and non-status Indians.

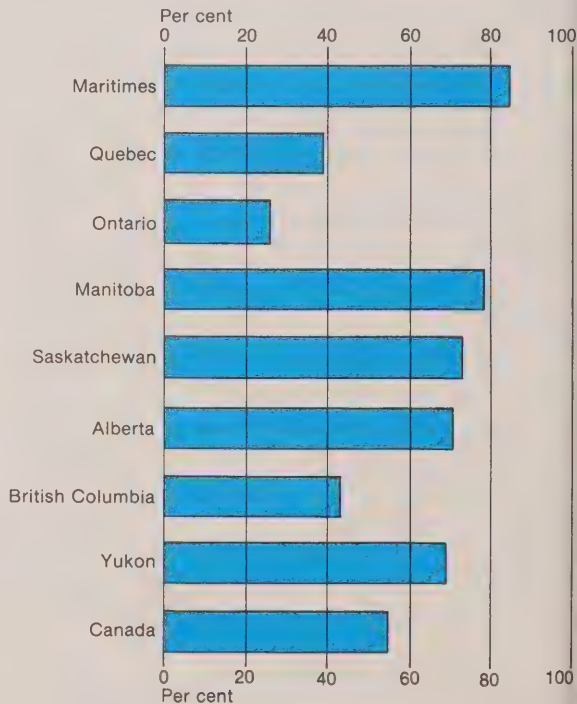
This survey also reported that only 48.5% of this native working-age population worked at some time during the year, and that only 15.5% were employed for the full year.

The extensive unemployment among natives results from a number of factors. Most native communities are characterized by weak economies resulting from inadequate resources and technology, isolation from markets, lack of capital and credit, and limited business and related training and experience. At the same time, most natives, largely because of their lack of education, are locked into the unskilled and semi-skilled sectors of the Canadian economy.

The survey reported, for example that the largest occupational categories of Métis and non-status Indians were: service occupations, 16%; construction, 13%; clerical, 10%; forestry and logging, 6%; product fabricating, 6%; and transportation and transport mechanics, 5%. In addition to being at the lower end of both the pay and prestige scales, these occupations are characterized by declining labour demand.

Unfortunately, even less data exist concerning native incomes. A.A. Borovy contended in 1966 that "the poverty of the Indian staggers the imagination of the white man"¹⁰ a

Estimated proportion of registered Indians receiving social assistance, by province, 1973-74



Source: *Social Security: National Programs*, Catalogue 86-201, 1978.

conclusion supported by W.T. Stanbury, who found that 63% (or two and a half times the national average) of Indian families living off reserves in British Columbia in 1970 had incomes below the 1969 Senate Report poverty line.¹¹ The Survey of Métis and Non-status Indians reported in 1977 that the average weekly earned income for employed natives was 84% of the mean income of all Canadian industrial wage earners and it is highly probable, given high-dependency and low-employment/population ratios in the native population that per capita and family incomes of natives are still far below those of the rest of the country.

The economic plight of many Canadian natives is further highlighted by heavy dependence on social assistance. In 1973-74, an estimated 55% of all registered Indians received some form of social assistance.¹² The figure was even higher in the Maritimes, in the Prairie provinces and in the Yukon.

A number of other reports,¹³ however, have cautioned about overstating the degree of native poverty, particularly in the north where traditional activities still provide a major contribution to the standard of living. John Palmer, for example, calculated that income from the traditional sector (fishing, hunting and trapping) constituted almost 20% of all native income in 1970 (wages and salaries made up 53% and government transfers the remaining 27%), while estimates arising from the Mackenzie Valley Pipeline Inquiry indicate that family incomes in some parts of the Northwest Territories were from \$4,000 to \$8,000.

Housing

Another set of statistics that emphasizes the continuing disparity between native and non-native in Canada is that which describes native housing on reserves (**Table 10.10**). These data show that native housing has improved in terms of availability, size, and household amenities. These statistics, however, compare unfavourably with those for all of Canada, where almost 100% of homes have running water and indoor toilets.

Health

The available data suggest that the native population has shared in the improved health standards experienced by all Canadians. For example, between 1960 and 1975, infant mortality among registered Indians declined by 50% compared with 48% for all Canada. The infant mortality rate of registered Indians, however, was still two and a half times the Canadian rate in 1975, while the number of native admissions to hospital (per 100,000 persons) in 1976 was also two and a half times that for Canada, and the number of hospital days (per 100,000 persons) of natives was double the Canadian rate (**Chart 10.14**).

The data in Chart 10.14 also indicate that natives have particularly high rates of hospitalization for infectious and parasitic diseases (including intestinal infections and tuberculosis), and diseases of the respiratory system (pneumonia, influenza, bronchitis, emphysema, asthma, etc.), but rates for cancer and diseases of the circulatory system that are below the Canadian rates. Note also that the rate at which natives are admitted to hospital for injuries resulting from accidents or violence is almost four times greater than that for all Canada.

The Future of the Indians in Canada

In all probability, a long-term solution to the problems encountered by Canadian Indians cannot be achieved until both native and non-native communities agree on what role the native is to play in Canadian society.

It is clear that the native question in Canada is much more than an economic problem to be ameliorated simply by applying the proper stimulative measures — improving education, facilitating occupational mobility, increasing the flow of productive factors, etc. Canadian natives constitute a distinct social group whose values and patterns of social organization are quite different from those of the rest of Canada, and, quite possibly, as the Mackenzie Valley Pipeline Inquiry Commission cautioned, solutions based solely on an economic development model may easily become problems when applied to societies such as that of Canadian natives.

Major social changes which fail to take into account both aspects of the Indian question in Canada — cultural survival and socio-economic development — can only doom the Canadian native to either cultural extinction or continued dependence. Dismantling the reserve system, for example, which the federal government proposed in 1969¹⁴ would possibly only transfer the dependency of reserves to urban welfare living and take from the native those elements of independence, identity and dignity that native communities do provide.

Notes and Definitions

Registered Indians: Registered or status Indians are the only persons recognized by the Department of Indian and Northern Affairs as Indians, and only they are eligible for the benefits accorded to Indians as described in the Indian Act. Persons entitled to be registered are those who were considered Indians or were members of an Indian band on May 26, 1874; are descendants through the male line of the above; or are the wife or widow of a registered Indian. A person is no longer considered registered when he or she becomes enfranchised, that is, voluntarily gives up his or her rights under the Indian Act.

Non-status Indians: Non-status Indians are persons of Indian ancestry who do not have the legal status of Indian, either because they were never registered or are enfranchised. Non-status Indians are not eligible for benefits available through the Indian Act.

The Data: Much of the data in this chapter were culled from surveys that covered specific sub-groups of the native population. For example, the data from the Department of Indian and Northern Affairs (DINA) include only registered Indians while only non-status Indians and Métis are covered in the *Survey of Métis and Non-status Indians*, and the *Métis and Non-status Indian Crime and Justice Commission Report*. The reader should, therefore, not ascribe conclusions as to the social conditions in the whole native population to these data.

Footnotes

¹The Development of an Employment Policy for Indian, Inuit and Métis People, *Employment and Immigration Canada, Ottawa, 1977*.

²1961 Census of Canada, *Catalogue 99-556*; 1976 Census of Canada, *Catalogue 92-821*.

³See especially the discussion on income and employment data below.

⁴A Survey of the Contemporary Indians of Canada: Volume II, *H.B. Hawthorne, ed., Ottawa, 1967*; Northern Frontier, Northern Homeland, The Report of the Mackenzie Valley Pipeline Inquiry: Volume I, *Ottawa, 1977*.

⁵*Nagler, Mark*; Indians in the City: A Study of the Urbanization of Indians in Toronto, *Canadian Research Centre for Anthropology, St. Paul University, Ottawa, 1970*.

⁶*Canadian Penitentiary System; Inmates Record System.*

⁷*Shanes, Mary*; Sentenced Native Population in Alberta Correctional Institutions on March 31, 1977, *Ministry of the Alberta Solicitor General, Edmonton, 1977.*

⁸Métis and Non-status Indian Crime and Justice Commission Report, *Ottawa, 1977.*

⁹Survey of Métis and Non-status Indians: National Demographic and Labour Force Report; *Native Council of Canada and Native Employment Division, Canada Employment and Immigration Commission, Ottawa, 1977.*

¹⁰*Borovy, A.A.*, Indian Poverty in Canada in *Poverty in Canada*, *Harp, J. and Holey, J.R., eds., Prentice-Hall of Canada Ltd., Scarborough, Ont., 1971.*

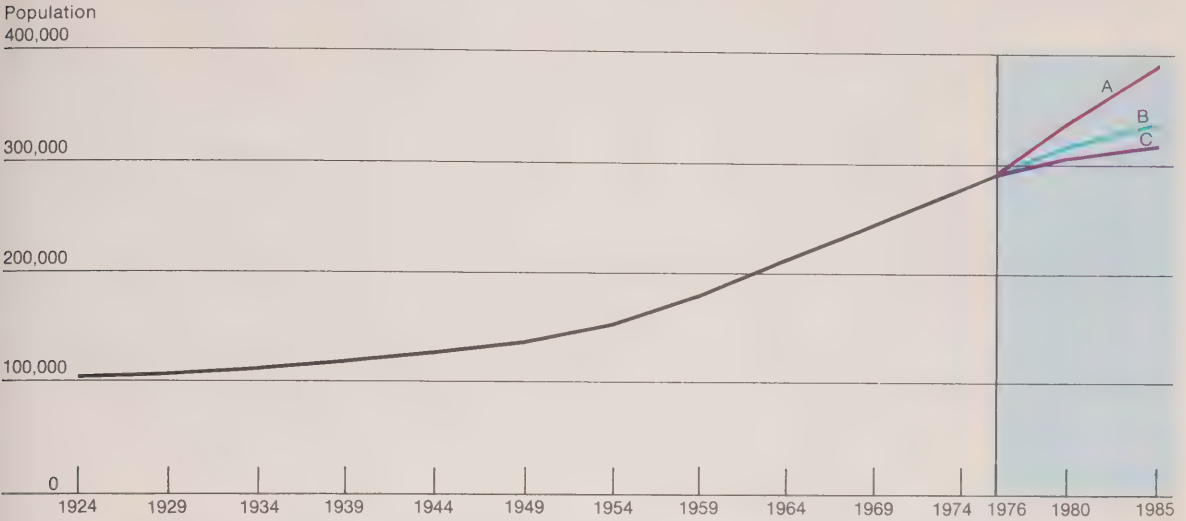
¹¹*Stanbury, W.T.*, Success and Failure: Indians in Urban Society, *University of British Columbia Press, Vancouver, 1975.*

¹²Social Security: National Programs, *Catalogue 86-201, 1978.*

¹³*Palmer, John*; Social Accounts for the North: The Measurement of Incomes in the Yukon and Northwest Territories, *Interim Paper No. 3, Department of Indian and Northern Affairs, Ottawa, 1973*; Northern Frontier, Northern Homeland, The Report of the Mackenzie Valley Pipeline Inquiry: Volume I, *Ottawa, 1977.*

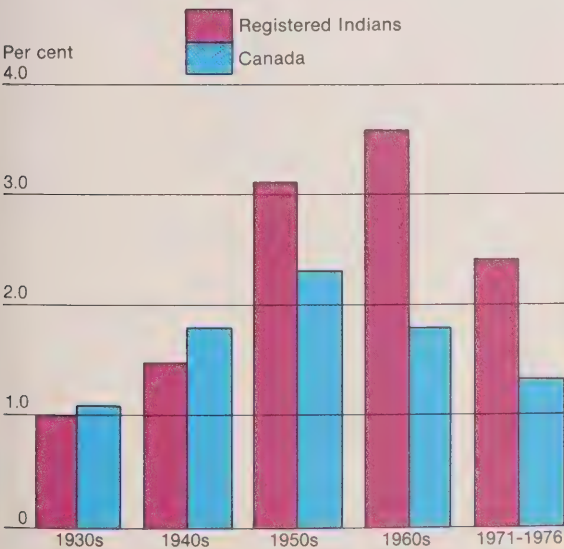
¹⁴*Largely because of opposition from native groups the proposals were never translated into legislation.*

CHART 10.1
Registered Indian population, 1924-1976 and projections¹ for 1980 and 1985



¹The projections involve three different assumptions of fertility among registered Indians: (A) high fertility, (B) medium fertility and (C) low fertility. Source: Program Statistics Division, Department of Indian and Northern Affairs (DINA).

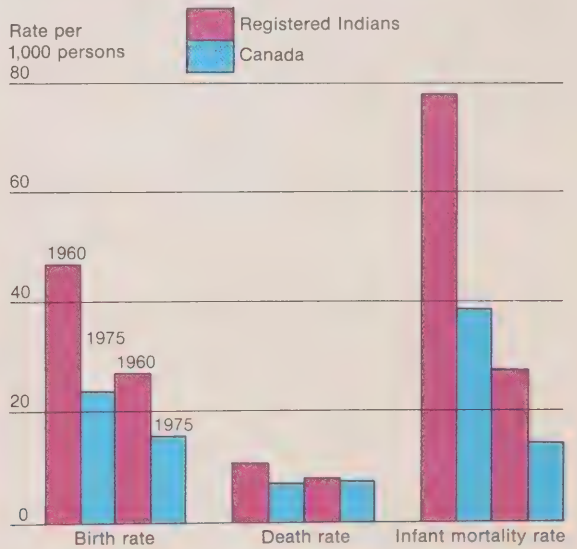
CHART 10.2
Average annual population growth rates for registered Indians and Canada, 1930-76¹



¹The figures for registered Indians represent the coverage periods 1929-39, 1939-49 and so on while the figures for Canada are intercensal (i.e. 1931-41).

Source: Program Statistics Division, DINA; 1971 Census of Canada, Catalogue 92-702; 1976 Census of Canada, Catalogue 92-801.

CHART 10.3
Comparison of crude birth and death rates and infant mortality among the Canadian and registered Indian populations, 1960-75



Source: Program Statistics Division, DINA; Vital Statistics: Births, Catalogue 84-204, 1975; Vital Statistics: Deaths, Catalogue 84-206, 1975.

TABLE 10.4
Age distribution of the registered Indian and Canadian populations, 1976

	Registered Indians			Canada
	On reserve	Off reserve	All registered Indians ¹	
			<i>per cent</i>	
0-4	12.7	10.4	12.2	7.5
5-9	14.5	14.6	14.6	8.2
10-14	14.6	14.4	14.5	9.9
15-19	13.3	11.4	12.6	10.2
20-24	9.9	9.5	9.6	9.3
25-34	12.3	16.5	13.5	15.7
35-64	18.0	19.7	18.6	30.4
65 and over	4.7	3.5	4.4	8.7
Total	100.0	100.0	100.0	100.0
Total population	181,869	79,301	288,938	22,992,605

¹ Includes persons residing on Crown lands.

Source: Program Statistics Division, DINA; 1976 *Census of Canada*, Catalogue 92-823.

TABLE 10.5
Registered Indians living on reserves, on Crown land and off reserves, 1959-76

	On reserve	On Crown lands	Off reserve	Total	On reserve	On Crown lands	Off reserve	Total
	<i>number</i>				<i>per cent</i>			
1959	131,120	17,733	30,272	179,135	73.2	9.9	16.9	100.0
1966	157,587	22,864	43,711	224,162	70.3	10.2	19.5	100.0
1968	161,731	21,612	54,148	237,491	68.1	9.1	22.8	100.0
1970	163,509	23,322	63,949	250,780	65.2	9.3	25.5	100.0
1972	168,601	22,762	73,316	264,679	63.7	8.6	27.7	100.0
1974	176,457	25,442	74,537	276,436	63.8	9.2	27.0	100.0
1976	181,869	27,768	79,301	288,938	62.9	9.6	27.4	100.0

Source: Program Statistics Division, DINA.

TABLE 10.6
Enrolment of registered Indians in kindergarten, high school and university, 1949-77

	Kindergarten enrolment	University enrolment	High school enrolment as a percentage of total school enrolment
1949-50	—	9 ²	3.0
1953-54	—	..	4.6
1957-58	2,562	27	5.9
1961-62	3,560	50	8.1
1965-66	3,583	131	10.2
1969-70	6,807	321	13.3
1973-74	8,666	1,055	16.5
1974-75	9,273	2,047	16.2
1975-76	8,582	2,071	17.1
1976-77	8,668	..	17.3

¹ Students in grades 9-13 as a percentage of all students enrolled in Grades 1-13.

² Figure is for 1948-49.

Source: Departmental Statistics Division, DINA.

TABLE 10.7
Educational attainment of selected working age populations, 1971 and 1976¹

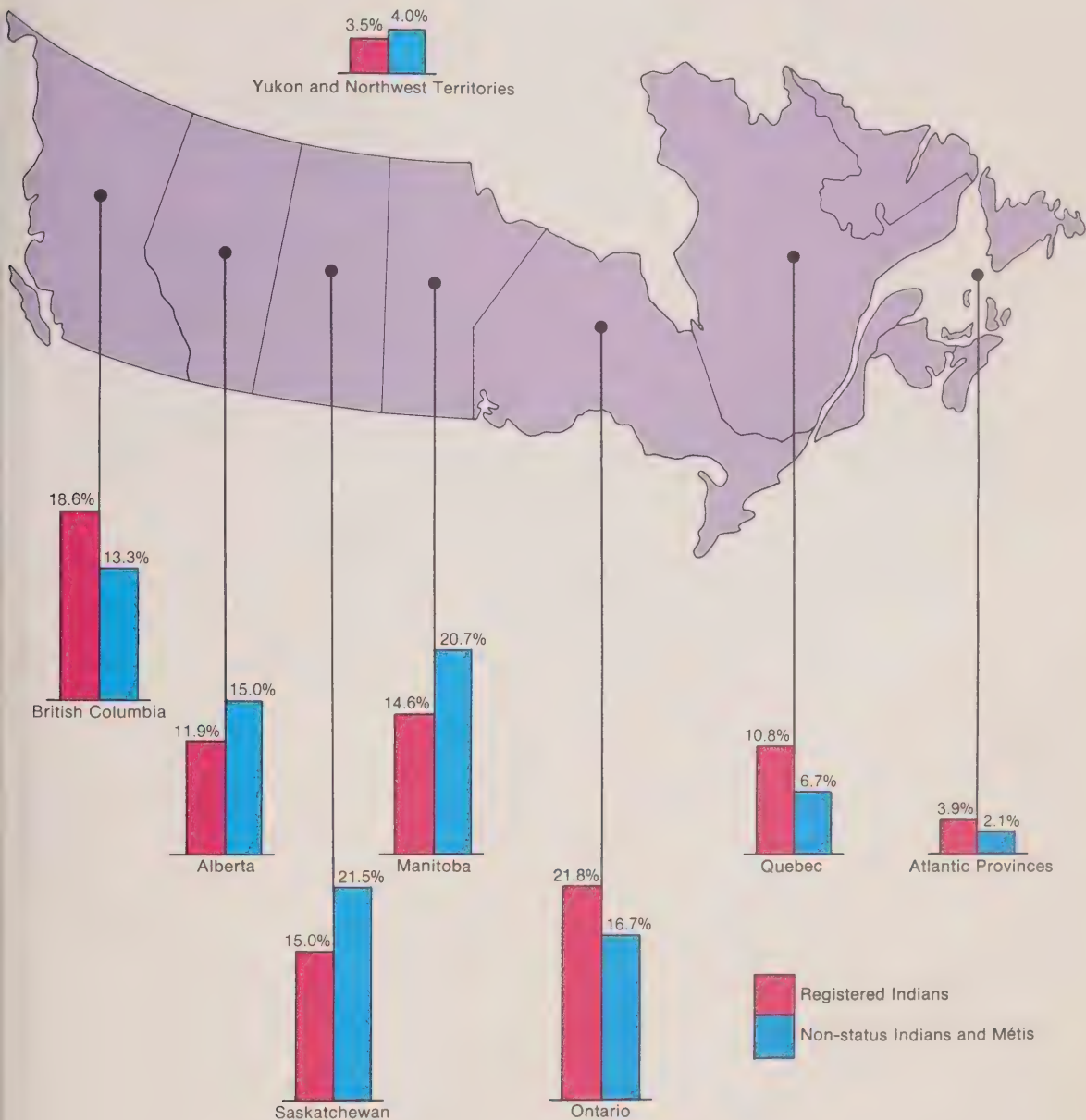
	1971		1976	
	Indians and Inuit ²	Canada	Non-status Indians and Métis	Canada
			<i>per cent</i>	
Grade 8 or less	79.6	36.8	49.8	24.6
Some high school	15.0	36.0	47.7	49.5
Some post-secondary	5.4	27.2	2.5	25.9
Total	100.0	100.0	100.0	100.0

¹ Comparisons between the data for 1971 and 1976 should be made with caution. The figures represent different native population groups and have been collected by different statistical agencies.

² Includes Indians and Inuit who reported a native language as their mother tongue in the 1971 *Census of Canada*.

Source: 1971 *Census of Canada*, unpublished data; *Survey of Métis and Non-Status Indians*, Native Council of Canada and Native Employment Division, Canada Employment and Immigration Commission, Ottawa, 1977.

CHART 10.8
 Proportion of registered Indians and non-status Indians and Métis, by region, 1976



The Inuit are concentrated in the following regions: Northwest Territories (63.8%), Quebec (22.6%), Newfoundland (6.2%) and Ontario (4.5%).

Source: Program Statistics Division, DINA; *The Development of an Employment Policy for Indian, Inuit and Métis People*, Employment and Immigration Canada, Ottawa, 1977.

TABLE 10.9
Enrolment of registered Indian students aged 14-18 and the school drop-out rate, 1969-70 to 1976-77

	Enrolment of Indian students aged 14-18 as a percentage of the registered Indian population aged 14-18	Mid-year school dropouts as a percentage of total enrolment
1969-70	57.7	..
1970-71	68.5	..
1971-72	69.3	..
1972-73	73.4	..
1973-74	67.5	..
1974-75	64.7	3.1
1975-76	..	8.1
1976-77	..	9.6

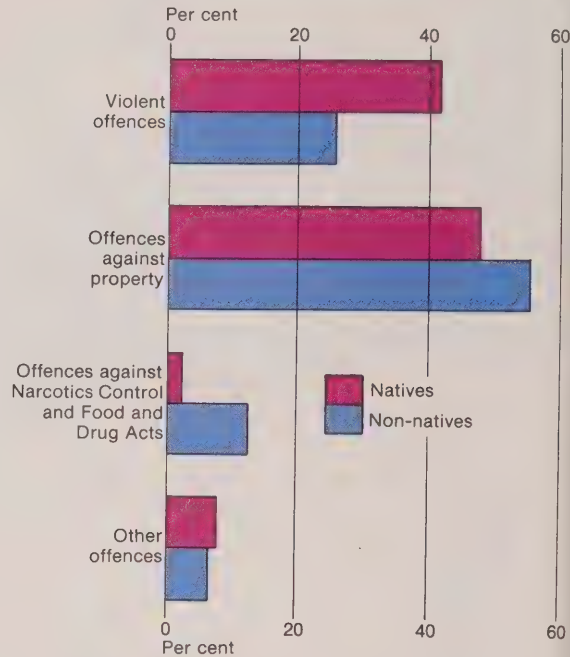
Source: Program Statistics Division, DINA.

TABLE 10.10
Housing conditions on Indian reserves, 1958-75

	1958	1963	1967	1971	1975
			<i>per cent</i>		
Houses per family	87.8	86.3	87.7	89.2	91.5
Houses in good repair	40.4	50.7	49.7	47.4	51.4
Occupied houses requiring major repairs	8.0	7.3	11.1	15.9	28.2
Houses with:					
1-2 rooms	..	34.1	27.0	18.4	11.9
5 or more rooms	..	24.7	31.9	43.4	57.2
Electricity	..	44.8	57.3	79.0	81.2
Running water	..	13.8	19.2	30.2	34.1
Indoor toilet	..	8.5	12.1	23.1	32.7
Indoor bath	..	7.2	10.0	19.3	26.8
Telephone	..	10.2	16.4	25.2	33.1

Source: *Indian Housing Survey*, Program Statistics Division, DINA, 1958-75.

CHART 10.11
Major offences of native and non-native inmates in federal penitentiaries on December 31, 1976



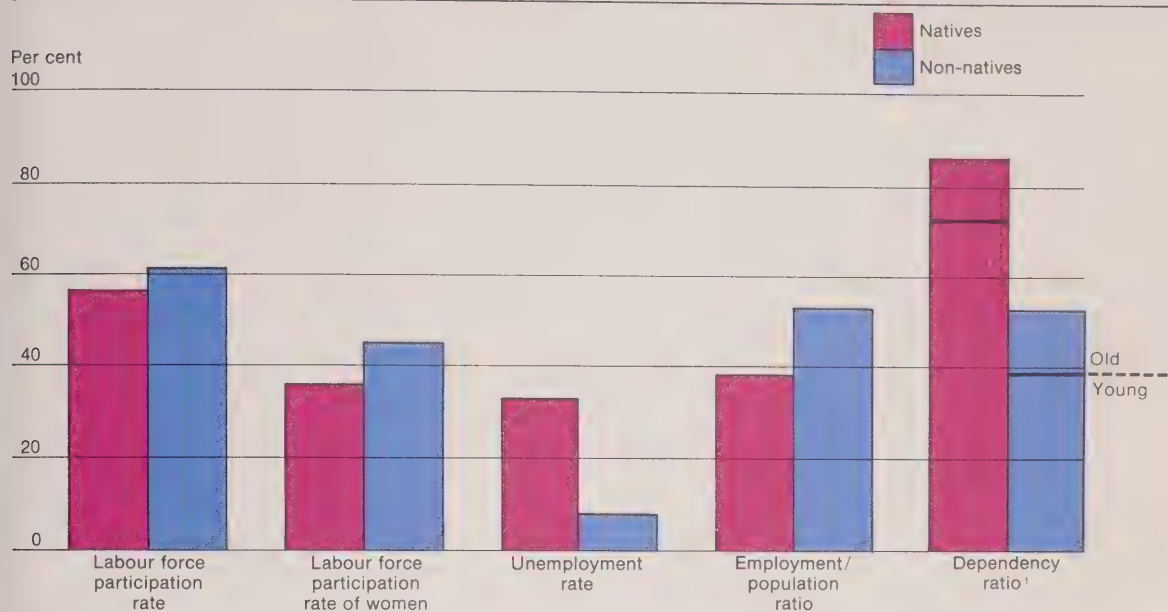
Source: Operational Information Services; Canadian Penitentiary Services.

TABLE 10.12
Sentences and institutional histories of native and non-native inmates in federal penitentiaries on December 31, 1976

	Natives	Non-natives
	<i>per cent</i>	
Length of sentence:		
Less than 2 years	11.5	5.3
2-5 years	55.1	44.3
5-10 years	18.8	25.5
10 to 20 years or more	6.7	14.6
Life	7.2	8.8
Other	0.7	1.6
Total	100.0	100.0
Number of previous incarcerations in federal penitentiaries:		
None	56.1	58.0
1-2	33.3	29.1
3-5	9.4	11.1
More than 5	1.2	1.8
Total	100.0	100.0

Source: Operational Information Services, Canadian Penitentiary Service.

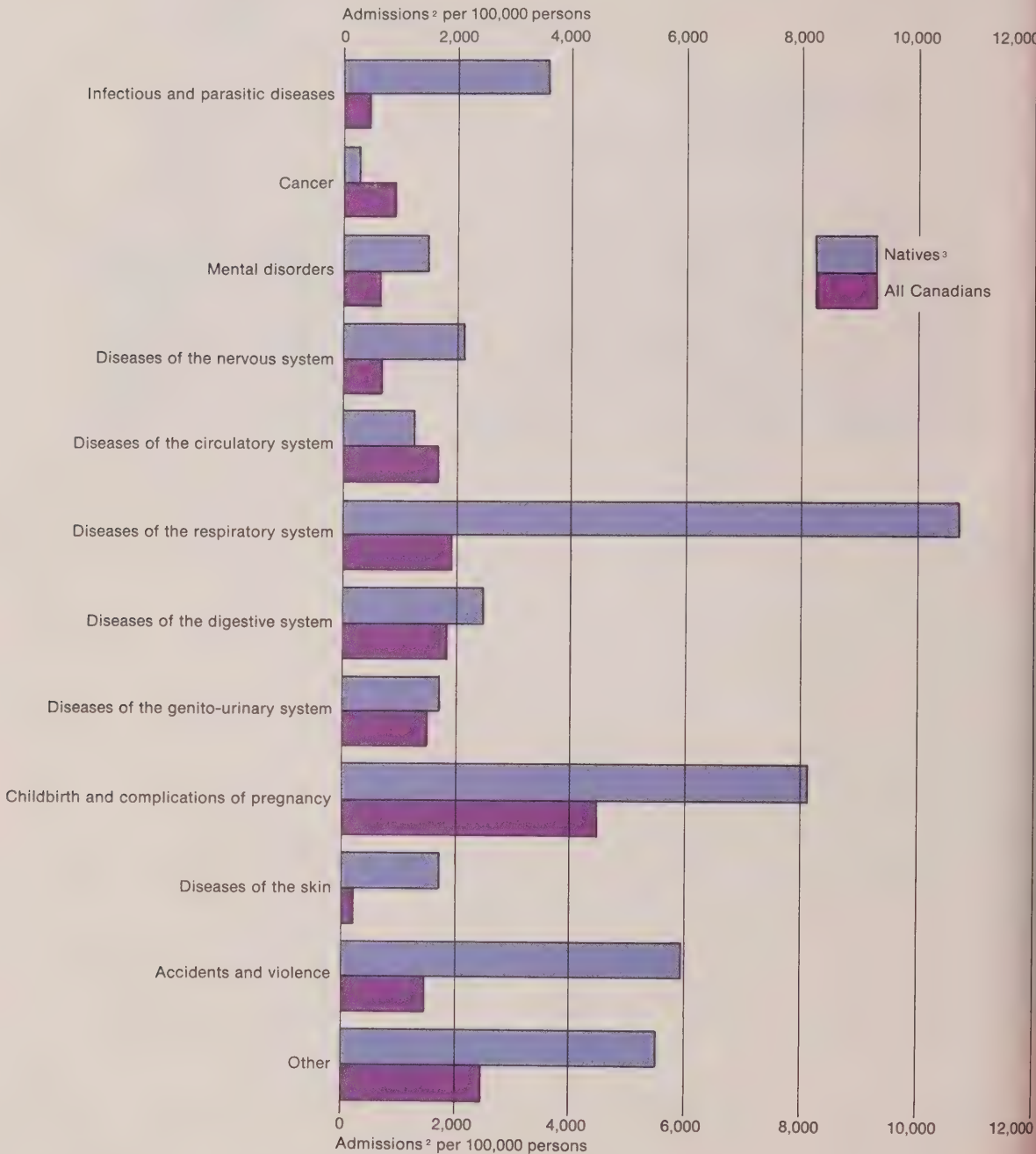
CHART 10.13
Employment indicators for non-status Indians and Métis and non-natives, 1976



¹Represents the number of young persons (less than 15 years of age) and older persons (65 years and over) as a percentage of the working age population.

Source: *Survey of Métis and Non-status Indians*, Native Council of Canada and Native Employment Division, Canada Employment and Immigration Commission, Ottawa, 1977.

CHART 10.14

Hospital admissions per 100,000 persons, by type or cause of illness, 1976¹

¹Figures for all Canadians are for 1975.

²This figure represents the total number of admissions, i.e. an individual is counted each time admitted to hospital.

³The native sample includes registered Indians from Saskatchewan and British Columbia and persons residing on reserves in Alberta.

Source: *Hospital Morbidity*, Catalogue 82-206, 1975; unpublished data, Health Division, Statistics Canada.

Urban Profiles



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Urban Profiles

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Each of Canada's cities is unique, and the characteristics that contribute to this uniqueness are evident even to the casual observer. Our large cities have developed in relative isolation from one another, with different cultural and historical backgrounds, and as a result, strong local identities have developed. Differences in the physical setting, climate, transportation links, economic base, and size of urban areas have also contributed to this diversity.

Within cities, structural and social differences exist and are the products of the age of the various districts, differences in district location and physical accessibility, land and building values, and the cultural makeup of the area.

The purpose of this chapter is to explore some aspects of the multiformity of 23 large urban areas. This diversity can be viewed from three perspectives. The reader can see differences and similarities between any two cities, Hamilton and Edmonton for example,¹ between different areas in the same city, for example, the suburbs and Central Area of Edmonton, or between similar districts of different cities, the suburbs of Edmonton and the suburbs of Hamilton, for example.

To explore differences existing within cities, each urban area has been divided into three parts or zones: the *Central Area*; the *Mature Suburbs*; and the *New Suburbs and Fringe*. Each of these zones is reasonably distinct from the others in terms of urban environmental features, such as the land-use mix, the type and age of housing, and the periods of initial development. The Central Area, as the name suggests, is the core of the metropolitan area—the location of the greatest single concentration of business and retail activity. High density residential development is also often present. The Mature Suburbs are predominantly residential, with scattered retail, industrial and transportation activities. Generally, this area developed during the first half of this century and displays characteristics consistent with the development processes and building methods of the period. The third zone, the New Suburbs and Fringe, encompasses all other urban area census tracts in the built-up area, plus all tracts outside the built-up area. The New Suburbs and Fringe includes both the low-density urban area developed in the past 30 years (largely in response to the accessibility afforded by the widespread use of the motor vehicle) and the extensive area of mixed rural and urban areas beyond. (For a more complete description of the zones, see the Technical Notes at the end of this chapter.)

Information in this chapter is grouped according to the two broad components of an urban system: the urban residents and the urban environment. The first component includes population features and socio-economic conditions while the second includes features that influence and are

influenced by people's daily activity. These are: natural environment components, such as physical site, air, water, climate and natural resources; man-made environment features, such as streets, homes and other buildings, and parks; and social environment factors such as education, health care, police, and shopping services.

A. THE URBAN RESIDENTS

Population Features

Population Change between Cities. Population change is perhaps the most carefully studied urban phenomenon because large increases or decreases in population seriously affect the ability of the community to meet the needs of its residents. Rapid population growth can result in crowded schools, congested roadways, rising house prices, and municipal budget deficits, while unexpected decreases in urban growth rates may lead to over-provision of services and consequent economic problems. Generally, the rapid population growth experienced by most of Canada's major urban areas in the 1960s has slowed since 1970. However, the rates of growth from 1971 to 1976 varied greatly between cities. Calgary and Edmonton grew rapidly — possibly the result of the continued attraction of young adult migrants to a favourable economic climate generated by a strong oil and gas industry. Ottawa-Hull, Victoria, Kitchener and Oshawa also grew substantially in population between 1971 and 1976.

Several cities which grew rapidly during the 50s and 60s, for example, Sudbury, Windsor and Trois-Rivières, experienced very slow growth between 1971 and 1976, and in some cases experienced decreases in population. Of the three largest metropolitan areas, Toronto and Vancouver grew at moderate rates between 1971 and 1976, while the population of Montreal remained relatively stable. This represented a change from the rapid rates at which these centres grew in the 60s.

Households in Different Cities. The proportion of single-person households has been generally on the rise in the urban areas in the 60s and 70s. Numerous factors contribute to this trend: for example, higher incomes for both young people and the elderly, increases in separations and divorces, and increased numbers of widows and widowers.² Single-person households are most evident in Victoria, Vancouver, Winnipeg, Saskatoon and London, while cities with the smallest percentage of these households are Sudbury, St. John's, Trois-Rivières, Saint John, Quebec, Oshawa and Halifax. In contrast, households with five or more persons as a proportion of all households dropped in all cities between 1961 and 1976 probably because of a lower birth rate, a lower rate of family formation, and fewer extended families residing in one dwelling.³ St. John's, Saint John, Sudbury and Quebec have the largest percentages of five-persons-plus households, while Victoria, Vancouver, London and Winnipeg have the lowest.

The Age Structure of Different Cities. The age structure of a city affects the type of services needed, local spending patterns, and it may influence the level of unemployment and labour force participation.

The youth dependency ratio⁴ is a measure of the number of children dependent upon adults in the population and may reflect a city's birth rate, the rate of family formation and intercity migration patterns.⁵ Highest youth dependency ratios are found in St. John's, Saint John, Sudbury, Oshawa and Windsor, cities that also have among the highest percentages of households with five or more persons. Vancouver, Victoria, Trois-Rivières, Kingston and Montreal have the lowest youth dependency ratios.

The old-age-dependency ratio⁶ measures the size of the mostly-retired population as a proportion of the mostly-working population. Between 1971 and 1976, Ottawa, Calgary and Edmonton attracted large numbers of working-age people due to their growing and robust economies.⁷ These centres have low old-age-dependency ratios. The mild climates of Vancouver, Victoria and Windsor make these places retirement centres and, as a result, they have high old-age-dependency ratios.

Immigration Patterns of Different Cities. Immigrants have contributed much to the economies of many Canadian cities and have helped to shape their character. The index of ethnic diversity presented in Table 11.1 is a summary measure of the degree of ethnic heterogeneity of a city. Centres with the greatest degree of ethnic diversity are Winnipeg, Edmonton, Regina, Saskatoon, Sudbury and Windsor. All cities in Quebec and the Atlantic provinces, except Montreal, have populations that are substantially less ethnically heterogeneous.

Population Change within Cities. Within Canadian cities a major contributor to the diversity present has been the continued movement of people away from the Central Area of the city into the New Suburbs, with the result that the majority of residents in each urban area now live in the New Suburbs and Fringe. The percentage of people living in the outer zone of cities in 1976 ranged from 55% in Victoria to 87% in Kitchener, with the average proportion being 72%, up from 51% in 1961 (Table 11.3). In the other two zones of most cities, the Central Area and the Mature Suburbs and Fringe, the population declined, not only proportionally, but also in absolute terms, between 1961 and 1976, despite general urban growth. This redistribution of population within the cities has had the effect of changing work, shopping and leisure patterns.

As recently as the 1940s, cities were tightly knit units in which the activity patterns of most residents focused heavily on the Central Area. Today, Canadian cities have become largely suburbanized. Many urban dwellers do their shopping at suburban malls which have plenty of parking. They may also attend movies in the same locale because parking is free, and because it saves a long drive into the city core. In our largest cities, a trip downtown has become an expedition for many and may be prompted by a special purpose, such as seeing a hockey game, attending a play, or specialty shopping.

Work locations have also become decentralized, although not to the same degree as have shopping areas: for example, in 1974, 51% of Metro Toronto's total jobs were located outside the city of Toronto. Only 21% were actually in the Central Business District of the city.⁸

Households within the Cities. The average size of households is larger in the New Suburbs and Fringe than in the other two zones of all cities, and the size of this difference has increased substantially since 1961 (Table 11.5). In the Central Area, a large proportion of total households are single-person households (in eight cities single-person

households represent 50% or more of all households), and despite slow or negative population growth in the Central Area between 1961 and 1976, the actual number of single-person households here has greatly increased. There are proportionately fewer single-person households in the other zones, but Table 11.5 indicates that, as in the Central Area, in the Mature Suburbs and in the New Suburbs and Fringe the number of single-person households has increased substantially since 1961.

Single-person households do not make up more than 15% of all households in the New Suburbs and Fringe of any of the cities, indicating that this area remains one in which families dominate. Table 11.8 shows that families in the New Suburbs and Fringe are likely to have more children than their counterparts in more central locations of the city, although the difference between 1961 and 1976 figures reflects a general trend, even in this zone, to fewer children per family.⁹

Zonal Age Structure Differences. The age structure of the population by zone (Table 11.7) mirrors many of the patterns of family and household structure. The number and proportion of children declined in the Central Area and Mature Suburbs between 1961 and 1976. Although the actual number of children increased substantially in the New Suburbs and Fringe during this time, their proportion declined, largely due to an increase in the number and proportion of the young adult age group. The elderly make up larger percentages of the populations of the two inner zones than of the New Suburbs and Fringe, and in the Mature Suburbs the proportion of this age group has increased substantially in all centres.

Socio-economic Conditions

Income and Expenditure. The average total family income varies substantially among Census Metropolitan Areas (Table 11.9). Centres in the Atlantic provinces and Quebec have slightly lower than average incomes, while in cities in Southern Ontario incomes are generally higher than average. The majority of large Census Metropolitan Areas (400,000 or more) have average total family incomes in excess of the national average, whereas the opposite is generally true for those in the 100,000 to 400,000 population range.

Income is only one side of the coin; expenditure is the other. Table 11.10 gives some perspective on housing expenditure in various cities in Canada. In all Census Metropolitan Areas, a higher percentage of renters pay more than 30% of their gross income for shelter than do home owners. Victoria, Vancouver and Winnipeg, cities which include a high proportion of single-person households and large elderly populations, had the largest proportions of tenants spending more than 30% of their gross income on housing in 1974.

Education. The highly competitive and specialized urban job markets usually demand a reasonable level of education. Chart 11.11 presents figures on the proportion of young adults in each city who have not gone beyond grade 10. The figures vary considerably between cities, from a low of 14.5% in Calgary to a high of 32.4% in St. John's, and in general, there are fewer young individuals with grade 10 or less education in the Census Metropolitan Areas in the four western provinces than in the urban areas of the East.

It is worth noting that this achievement measure deals with formal schooling only and does not take into account the knowledge and skills gained through part-time schooling, apprenticeship, or on-the-job training. A case in point is Sudbury. Although the Sudbury figure of 31.9% with grade 10

or less is the second highest of all urban areas, many of the people included have probably received specialized training related to the mining industry.

Labour Force Activity Comparisons between Cities. Labour force information from the 1971 and 1976 Censuses of Canada is present in the exhibits in Table 11.12 through Table 11.17. In the four Quebec centres, labour force participation rates¹⁰ increased more than elsewhere between 1971 and 1976. Despite this, the rates of these centres in 1976 remained below the group average for the 23 urban areas. Participation rates were highest in Toronto, Edmonton, Calgary, Kitchener and Regina, cities with growth rates above the average for the 23 urban areas.¹¹

Unemployment rates were generally higher in small urban areas than in large ones in 1976. Exceptions were Regina and Saskatoon, with low rates (3.4 and 5.3%) and Vancouver with a high 8.2% unemployment rate.

Labour Force Activity within Cities. In most of the large Census Metropolitan Areas, for example, Toronto, Montreal, Vancouver, Ottawa and Edmonton, participation rates are higher in the Central Area than in the Mature Suburbs. These rates, however, are usually below those in the New Suburbs and Fringe. The elderly make up a greater proportion of the population in the two inner zones than in the New Suburbs and Fringe, and their presence may affect the participation rate if they form a substantial proportion of the population. For example, in the Central Areas of most cities the elderly make up between 15 and 20% of the total zone population, and the participation rate varies between 55 and 65% (**Table 11.13**). In Saskatoon and Victoria, the percentage of the elderly in the Central Area is 31 and 35% respectively, and the labour force participation rate is also low at 48% in Saskatoon and 45% in Victoria.

In almost all urban areas, the unemployment rate in 1976 was highest in the Central Area of the city, while figures were lowest in the New Suburbs and Fringe. In urban areas with high unemployment rates, all three zones had high rates.

B. THE URBAN ENVIRONMENT

Many actions are influenced by environmental conditions. For example, the choice of location for most Canadian cities was influenced by particular advantages of site. Flat land near protected harbours, for example, was important in the development of Halifax, St. John's and Victoria.

Conversely, we modify our environment to suit our needs. For example, inner city neighbourhoods resettled and adapted by immigrant groups are usually distinctive because they reflect different language and cultural activity preferences.

Economic Activity¹²

Most of the urban areas have broad economic bases since a wide range of activities almost always takes place in large cities. Particular advantages, such as site, access to markets, and size and skills of the labour force usually lead to some activities being more important than others. Table 11.18 presents some indication of the varying industrial structures of cities across Canada.

The index of industrial specialization is a measure of the distribution of a city's labour force among its various economic activities. Sudbury and Ottawa have the two most specialized economies, while those of Winnipeg, Saint John and London are the most diversified.

The total number of employees in industry and value added figures give some indication of industrial structure

and productivity. Hamilton, Kitchener, Windsor, Oshawa and Trois-Rivières have proportionally large numbers of workers in manufacturing activity, while Ottawa, Halifax, Victoria and St. John's have proportionally few.¹³

Natural Environment

Features of the natural environment are often quoted in the characterization of a city because they are tangible, and, especially in the case of the weather, have a great influence on the daily lives of the people.

Climate. Table 11.19 presents selected data on climate.

Freezing precipitation makes driving dangerous, leads to the cancellation of aircraft flights, and brings down electric and telephone lines. St. John's has the most days in which freezing precipitation occurs (36 days). Extreme cold affects outdoor activity, makes cars harder to start, and may lead to service disruptions, such as broken water mains. For this reason, it can be considered a disadvantage. Winnipeg, Saskatoon and Regina each have hundreds of hours every year when temperatures are below -20°C . However, there are relatively few days in which the sun does not shine in these cities.

Eastern Canadian cities generally do not have the extremes of temperature, particularly the long periods of very cold weather to which Prairie communities are subjected. However, they experience fewer hours of sunshine, and usually more days of precipitation.

Pollution. While man has little or no control over climate, he does have some control over the quality of water, air and land in urban areas. High air-borne particulate levels may be the result of industrial processes or the burning of certain high-ash fuels, though in many cases, natural causes such as a combination of climate and blown dust may be blamed. The high levels in Edmonton and Calgary (**Table 11.20**) may be the result of the latter. A high level of suspended particulates, whether from man-made or natural sources, causes eye irritation, may bring on allergies and asthma attacks, and soils laundry, cars and homes.

Generally, eastern industrial cities have shown a marked decrease in particulates over the period 1974 to 1976, while the level of particulates has risen in some Prairie cities, such as Edmonton, Saskatoon and Winnipeg. On the average, the lowest levels of particulates were present in cities in the Atlantic provinces and British Columbia. However, Sudbury tied with Victoria for the lowest particulate levels in 1976.

The sulphur dioxide level in a city is a good indicator of man-made pollution since the compound is largely the product of the burning of high-sulphur-content fossil fuels. Acceptable levels were set in the Clean Air Act to provide adequate protection from the adverse effects of air pollution on vegetation, animals and man.¹⁴ They were exceeded in three major industrial centres in all three years. Highest values were in Windsor (in the direct line of prevailing winds from Detroit), and in Montreal; standards were also exceeded in Hamilton. Sulphur dioxide is an irritant, and when mixed with rainwater forms dilute sulphuric acid and becomes an agent destructive to painted surfaces and other materials. In some of the largest cities the amount by which acceptable standards for sulphur dioxide were exceeded decreased between 1974 and 1976.

Tables 11.21 and 11.22 examine aspects of human activity that potentially may contribute to water and air pollution. Badly polluted water resources deprive urban residents of a valuable source of recreation and increase the costs of supplying a city with water. Water pollution problems exist in a number of our cities because at least

some of the constituent municipalities in some of the urban areas in 1977 (the date of the survey) dumped waste water directly into nearby rivers and oceans, with only a screening to remove solids. The problem was most serious in all the urban areas of the Atlantic provinces and Quebec, where few municipalities had sewage treatment facilities.

Table 11.22 indicates the potential for pollution, rather than actual pollution created in various centres, by listing high-stressor¹⁵ industries such as steel mills, smelters, pulp and paper mills, and chemical manufacturers. The predominance of high-stressor industries in Sudbury and Hamilton, and their high levels of pollution in the past, have given these cities the reputation of having badly polluted environments. However, environmental safeguards on production systems have reduced air pollution levels in these centres to near or below the acceptable limits (*Table 11.20*).

The Man-made Environment

Land Use. An overview of the pattern of a city's built environment is most easily gained by examining the proportions of different types of land use present.

Census Metropolitan Areas and Census Agglomerations in most cases are made up of one or two central cities and a number of smaller adjacent municipalities. Table 11.23 presents generalized land-use patterns for the central cities of the 23 urban areas. Since land use varies greatly between different areas of the city, data were collected on a zonal basis.

In most cities, the Central Area is predominantly occupied by commercial and office land uses, industry, and transportation. Industry and transportation land-use figures in the two inner zones vary widely among cities, depending on the presence or absence of railyards and port facilities—users of large amounts of land. In Ottawa, for example, industrial and transport land use is low in the Central Area because the railroad station and marshalling yards were removed to the suburbs. The former railyard area is now occupied by offices and parkland bordering the Rideau Canal. With removal of the railyards, this part of the downtown has become accessible to the public. Railway relocation has also occurred to some degree in other cities.

Several of the Central Areas, especially in smaller cities, have extensive residential development (including Oshawa, Kingston, Kitchener, London and Windsor). Although the population figures (*Table 11.3*) do not indicate larger than average numbers of people living in the Central Areas of these cities, information on housing type (*Table 11.25*) indicates that they contain a larger proportion of single detached homes, a type of dwelling which takes up more land per unit than apartments, with the result that more land would be occupied by residential use. In most of the other cities, many people continue to live in the Central Area but less land is devoted to residential use because most residents live in apartments. In Vancouver, for example, only 16.5% of the Central Area is occupied by residential land, but the population is relatively large and the proportion of dwellings that are apartments is quite high.

Large Central City parks are found in Montreal, Toronto, Vancouver and Halifax. The park space softens the "sea of concrete" image that the inner areas of major cities tend to have, and provides recreation space for the large populations of the Central Area and Mature Suburbs. Winnipeg, Sudbury, St. John's, Windsor and Calgary have relatively low percentages of park space in the Central Area, but this is often offset by more park space being located in the suburban zones.

The most common use of land in the Mature Suburbs of most cities is residential. Hamilton and Trois-Rivières are exceptions, where the percentage of land devoted to industrial, warehousing and transport uses exceeds that devoted to residential use.

In Ottawa, institutional land-use figures are relatively high in all three zones due to the presence of the federal government (for example, the Central Experimental Farm) and two large universities. The institutional land-use figure is also high in the New Suburbs and Fringe of Saskatoon where much of the University of Saskatchewan is located, and in the Mature Suburbs of Kingston, due to the presence of Queen's University and several correctional institutions. Aside from their main function, some types of institutional land uses such as universities are often in park-like settings and may provide additional recreational land for the urban population.

The spread of development has been spurred on in several centres by the absence of suitable land for building close to the Central Area. In both Sudbury and St. John's, extensive areas of undevelopable rocky outcrops exist in all zones. Development, as a result, has followed transportation routes built in the valleys and has often taken place some distance from the city in areas where flat land was available. **Rural to Urban Land Conversion.** Table 11.24 offers information on the development process from a different perspective. Rates of conversion of rural to urban land between 1966 and 1971 were highest in Toronto, Montreal, Edmonton and Calgary, the figure in each case exceeding 3,000 acres a year. In Toronto, highest with a rate of 5,809 acres a year, most of this growth (97%) took place on high-capability agricultural land. In most Prairie and Southern Ontario centres, almost all building also occurred on good farmland. Since most of these cities are surrounded by a high proportion of good farmland, such conversions raise the issue of the need for rural land conversion guidelines. Good agricultural land near cities, once built on, is probably lost forever for production. If preservation of this resource is given top priority, then other development options can be pursued, including infill housing in existing neighbourhoods, redevelopment of old, underused industrial lands, greater emphasis on high-quality, compact housing design, and outside the city, concentration of new development in satellite centres on poorer quality land.¹⁶

Housing. Table 11.25 indicates the extent of the diversity of housing stock among zones and cities.

The Central Area of most cities is dominated by high-density types of housing, apartments in particular. In 1976, of the seven largest Census Metropolitan Areas, only in Winnipeg did the percentage of single detached homes exceed 10% of the total stock in the Central Area. In many of the smaller centres, the majority of the dwellings in the Central Area are apartments, even where the percentage of single detached homes in this zone is relatively high (London 21.5%, Kitchener 38.8% and Regina 21.5%). In contrast, the New Suburbs and Fringe is predominantly an area of single detached homes. In the seven Census Metropolitan Areas of Western Canada, this pattern is particularly strong, with single detached housing comprising at least 65% of the total dwellings in this zone. In contrast, in the 17 cities east of the Manitoba - Ontario border, this proportion is reached in only three New Suburbs and Fringe zones.

The Mature Suburbs zone of most cities contains a mix of single detached and higher density housing types. In Quebec centres, in each of three zones, apartments make up a larger proportion of total dwelling units than in the same zone of cities of comparable size in other parts of Canada. This trend

is most noticeable in the data for the Mature Suburbs. In Montreal, 93% of dwellings in the Mature Suburbs are apartments, while in Toronto, the figure is 52%. In Trois-Rivières, 81% of the dwellings are apartments in the Mature Suburbs, while in Saskatoon, only 35% of the homes in this zone are apartments.

In most of the cities, moderate growth in the number of dwelling units in the Central Area took place between 1961 and 1976. Much of this growth was due to the conversion of medium- and low-density housing to apartments and to the construction of central city high-rise units. The growth rate of the number of apartments far exceeds the growth rate for all dwellings in the Central Area in all cities, and the proportion of apartments in the total housing stock of this zone has also risen in all cities between 1961 and 1976.

Relative stability existed in the housing sector in the Mature Suburbs in most cities between 1961 and 1976. Growth rates in total stock were generally low, and were usually below the rates for the Central Area. There was also growth in the number of apartments in the Mature Suburbs. Most of this growth was accomplished through infilling rather than massive redevelopment, although slight declines in the number of single detached houses in the Mature Suburbs of many cities also indicate that some conversion of homes to apartments and redevelopment also took place. Large-scale growth of housing in the New Suburbs and Fringe took place between 1961 and 1976, with the result that this area now contains the majority of the housing in all the urban areas studied except Victoria. As in the other zones, the growth in the number of apartment units in the New Suburbs and Fringe far outpaced the growth in the number of other dwelling types, with the result that apartments made up a larger proportion of the total dwellings in 1976 than they did in 1961.

The growth of apartments in some parts of the New Suburbs and Fringe results in increased population densities for these areas.¹⁷ Increased densities mean more traffic and may lead to a demand for improved community services, such as new bus routes. At the same time, however, higher density may mean that services such as public transit could be provided at a lower per-person cost, and services that were previously uneconomic might now be feasible.

Tenure patterns have matched the general increase in apartments, the main form of rented dwelling (*Table 11.27*). The percentage of rented dwellings increased in all zones of nearly every urban area between 1961 and 1976. However, the percentage of rented dwellings did decrease in the New Suburbs and Fringe of urban areas in which the percentage of single detached dwellings in that zone grew, or was relatively stable between 1961 and 1976 (Montreal, Trois-Rivières, Kingston, and Sherbrooke).

For all the urban centres in 1976, the percentage of dwellings rented was higher in the inner zones than in the outer zones, and highest in the Central Area. In each of the four Quebec urban areas, the percentage of dwellings rented was noticeably higher in each zone than in other urban areas of comparable size, and this pattern has persisted for many years; but this gap has generally narrowed since 1961.

Social Environment

Community Services among Cities

Police and Public Safety. Table 11.31 provides information on policing and public safety. Crime rates vary by region¹⁸ for a variety of reasons, the most important of which may be that municipalities use different methods for compiling and reporting incidents. Thus, comparisons of crime rates

between cities are not clearly indicative of true differences in criminal activity.

Police manpower levels vary significantly from a low of 1.4 officers per 1,000 population in London to a high of 2.5 per 1,000 in Saint John. The figures, however, do not reflect the administrative efficiency or technology at the disposal of various forces. The largest number of traffic accidents per 1,000 population took place in Winnipeg, Quebec, Saskatoon, Sherbrooke and Trois-Rivières. Despite the relatively high figures for accidents in the three Quebec centres, the numbers of persons injured or killed per 1,000 population are small, indicating that many of the accidents were probably of a minor nature. Toronto, the largest urban area in the country, had proportionally the fewest traffic accidents.

Public Transit. Tables 11.32 to 11.34 present information on public transit and the journey to work. The size and density of a city's population largely determine the viability and effectiveness of urban public transportation systems. In a large city, transit routes can usually be operated with fewer employees and vehicles per person than in a small city. In the largest, most densely populated cities (Toronto and Montreal), this pattern is clear, as both the number of passengers and the miles travelled by vehicles per population exceed the figure for other centres by a great margin. In smaller centres with lower population density, such as Sudbury and St. John's, there are fewer riders.

Within cities, low density in the New Suburbs and Fringe makes provision of adequate public transit services difficult, with the result that the automobile is used for most trips (*Table 11.33*) and is a necessity for the majority of residents. Table 11.34 indicates that in the New Suburbs and Fringe public-mode journeys are generally more time-consuming than private-mode journeys. High densities of population in the Mature Suburbs and Central Area make more frequent public services possible than in the New Suburbs and Fringe, with the result that there is less of a difference in times between public and private modes.

Medical Services. Map 11.36 shows the number of general practitioners and the person-to-general-practitioner ratio for the urban areas. Many of the smaller cities have fewer persons per general practitioner than the large centres. Kingston, the smallest of the urban areas, has the fewest persons per doctor, while Montreal has the second highest number. Several of the small eastern cities however, such as Saint John, Sudbury and Trois-Rivières, are exceptions to the general pattern and have relatively large numbers of persons per general practitioner.

Community Services within Cities. In general, the provision of community services such as transportation, health care, and education is subject to the effects of population changes within cities, especially the growth of suburban areas and the decline of Central Area populations. Provision of education facilities is used here as an example. Tables 11.7 and 11.8 indicate a decline, between 1961 and 1976, in both average number of children per family and actual number of children under 15 years of age in most Central Areas. As a result, many schools in these areas often have fewer pupils. In these same cities, rapid growth in the number of school-age children in areas of new housing construction can result in overcrowded classrooms. Despite a decline in both average household size and the number of children per family in the New Suburbs and Fringe of all cities studied (*Tables 11.5 and 11.8*), the large increases in total number of children under 15 years of age (*Table 11.7*) in this zone probably means that demand for classroom space will continue.

Technical Notes

The collection of data by urban sub-areas or zones allows differences that exist within cities to be highlighted. In *Perspective Canada II*, the Census Metropolitan Areas of Montreal, Toronto and Vancouver were divided into five zones based on period of development and physical characteristics. Because the present study focuses on 23 urban areas, varying greatly in size, this degree of detail was not possible. The three-zone model used here consolidates the Central Business District with the Inner City to form the Central Area, and joins the New Suburbs with the Fringe. The definition of the Mature Suburbs is essentially unchanged.

The Central Area

The delineation of the Central Area is based on land use and age of development criteria selected in consultation with the planning departments of the respective cities.

This zone includes both the Central Business District of the city and the large area of mixed land uses that surround it. Usually the site of the earliest development of the city, the Central Business District is the economic focus for the urban area. In the largest urban centres, the Central Business District can be clearly identified by its lack of permanent residents, the large numbers of retail and business firms, high rents, and an absence of activities requiring large amounts of land.

In the larger cities the remainder of the Central Area is reasonably distinct from the Central Business District and is characteristically a complex transition area of mixed land uses. Large tracts of land occupied by industries, transportation facilities and warehouses may exist close to some of the city's oldest residential areas. In some places, strong redevelopment pressures are brought on by the attraction of living close to downtown and result in refurbishment of many older homes, or their replacement by high-rise apartments and offices.

In the smaller urban areas the separation between the Central Business District and the Inner City is indistinct. The area with Central Business District functions is often very small, in many cases much less than the size of a census tract, the basic zone building block. In the smaller cities, many people reside within the Central Business District, and railyards, warehouses and service stations often also exist in the immediate downtown area.

The Mature Suburbs

Between about 1900 and 1945, increased demand for land for residential building combined with changes in transportation technology resulted in expansion of cities beyond limits previously set by one's ability to get around on foot to stores and places of work. Unlike the mixed land-use character of the Central Area, this zone, the Mature Suburbs, is predominantly residential. The period in which these residential neighbourhoods were built varies considerably as do the building materials used and the size of building lots. This is reflected in the great variation of housing types, quality, construction design, and site plans that exist. Large areas of land used by commercial or industrial concerns often exist, but these tend to be set apart from residential neighbourhoods rather than interspersed with them, as in the Central Area. Census tracts were deemed to be part of the Mature Suburbs if the percentage of the housing stock in the census tract built before 1946 was greater than the city-wide percentage of housing built before 1946.

New Suburbs and Fringe

Mass ownership of cars combined with mortgage assistance

plans made low-density housing development practical and desirable for home buyers of the 50s and 60s. Homes in the New Suburbs were most often built as part of large-scale developments by one builder who handled all aspects of construction from land purchase to landscaping, and sold the units to buyers as finished products.

The decentralization of city populations was further stimulated by the rapid growth of employment opportunities in suburban areas and the development of retail trade, particularly in shopping malls. Firms sought out the new suburban sites because they were easily accessible by road, and offered land cheaper and with lower taxes than in the Central City.

The portion of this zone beyond the built-up area of the city is rural in appearance but subject to strong urban influences and pressures. It consists of a mix of active and abandoned farms, and establishments occupying large amounts of land, such as golf courses, quarries, auto wreckers, and riding stables. Residential development is scattered, either strung out along highways and country roads or clustered around older towns.

Land-use Data

Data on urban land use is generally not available in a form that allows comparisons among cities. Many cities do not have these statistics available, and among those that collect them, definitions of types of land use often vary widely.

The estimates in Table 11.23 were calculated from the most recent series of Canadian Military City Maps published by the Mapping and Charting Establishment of the Department of National Defence. These are large-scale maps (1:25,000) and indicate residential areas, parkland, schools, churches and other institutions. They also show all transportation routes, power lines, and large buildings, including factories and shopping centres.

The area devoted to each use was calculated using one of the simplest types of planimeter, a dot area grid sheet. The dot area grid is a clear plastic grid of measured one-inch-by-one-inch squares which is placed over the city map. Each one-inch square contains 100 dots, and by counting the dots that fall within each land use on the map, it is possible to accurately determine the total number of square inches on the map devoted to each land use. These figures were multiplied by the map scale to give the actual totals for the city. City directories and such land-use maps as were available were used as supplementary sources to determine the exact size of lots and the land-use type of each parcel in areas of mixed use. They also proved valuable in updating information for some cities and as a general accuracy check.

Census Metropolitan Areas and Census Agglomerations in most cases are made up of one or two central cities and a number of smaller adjacent municipalities. The military city maps cover the central municipalities in most urban areas well, but usually do not present information for outlying municipalities. Therefore, data presented in Table 11.23 are only for the one or two major cities of the many municipalities present in the urban area. These cities are listed in the table. Data for both the Central Area and the Mature Suburbs are complete for all cities; however, information for the entire New Suburbs and Fringe is not available because the maps do not cover the outlying parts of the Census Metropolitan Area. The data presented for the New Suburbs and Fringe, therefore, are only for those parts of the zone that fall within the city boundary of the one or two major municipalities. Figures have not been imputed for the whole zone. In some cases, for example Calgary, no data for this zone were

available because the maps used did not cover the entire municipality.

Definitions

Census Tract (CT): Permanent small census geostatistical area established in large urban communities with the help of local specialists interested in urban and social science research. Census tracts are reviewed and approved by Statistics Canada according to the following criteria: (i) the boundaries must follow permanent and easily recognized lines on the ground; (ii) the population must be between 2,500 and 8,000 except for census tracts in the Central Business District, in industrial areas, or in peripheral rural or urban areas which may have either a lower or a higher population; (iii) the area must be as homogeneous as possible in terms of economic status and social living conditions; and (iv) the shape must be as compact as possible. All Census Metropolitan Areas, all Census Agglomerations with a central city having a population of 50,000 or more, and all other cities of at least 50,000 population are eligible for a Census Tract Programme.

Census Metropolitan Area (CMA): The main labour market area of an urbanized core (or continuous built-up area) having 100,000 or more population. CMAs are created by Statistics Canada and are usually known by the name of their largest city. They contain whole municipalities (census subdivisions). CMAs are comprised of municipalities completely or partly inside the urbanized core, and other municipalities, if at least 40% of the employed labour force living in the municipality works in the urbanized core, or at least 25% of the employed labour force working in the municipality lives in the urbanized core.

Census Agglomeration (CA): A geostatistical area created by Statistics Canada comprised of at least two adjacent municipal entities. These entities must be at least partly urban and belong to an urbanized core having a population of 2,000 or more. The urbanized core includes a largest city and remainder, each with a population of 1,000 or more, and has a population density of at least 1,000 per square mile (386 per square kilometre). CAs with an urbanized core of 100,000 or more (based on previous census figures) are called Census Metropolitan Areas.

Footnotes

¹When we refer to a city or urban area, we are actually referring to the Census Metropolitan Area or Census Agglomeration, the boundaries of which are shown in the reference maps at the end of the chapter.

²See the Family Chapter in this volume.

³See the Family Chapter in this volume.

⁴The number of persons aged 0 to 14 divided by the number of persons aged 15 to 64.

⁵W. Bond and N. Shulman, Quality of Life Measures for Medium Sized Canadian Cities, Ottawa, Canada Mortgage and Housing Corporation, forthcoming.

⁶The number of persons aged 65 and over divided by the number of persons aged 15 to 64.

⁷W. Bond and N. Shulman, op. cit.

⁸Planning Department, Metropolitan Toronto.

⁹See the Family Chapter in this volume.

¹⁰The participation rate is the labour force as a percentage of the population 15 years of age and over.

¹¹7.3% growth rate 1971-76 is the group average.

¹²Economic activity is a major component of the urban system. However, the major interest of this chapter is with social and environmental statistics, and since the topic is well covered in other Statistics Canada publications it is discussed here only briefly.

¹³Relative to their populations.

¹⁴The Clean Air Act Annual Report, Department of Fisheries and the Environment, Ottawa, 1976-77.

¹⁵A breakdown of industries based on their potential impacts on the natural system and amount of raw materials, including energy consumed, was presented in Human Activity and the Environment, Catalogue 11-509. Since only the high-stressor group is examined here, the reader should refer to the above publication for both the full set of data and a complete description of the method in which figures were collected.

¹⁶A recent study shows that substantial acreages of land suitable for settlement, but possessing little capability for agriculture, exist within a 25-mile radius of major urban centres. See V. Heimanis, Canada's Cities and Their Surrounding Resource Land, Canada Land Inventory, Report 15, Environment Canada, Ottawa, 1979.

¹⁷For example, the population density of Census Tract 31 in Ottawa increased from 3,745 persons/square kilometre in 1971 to 5,497 persons/square kilometre in 1976. This was the result of an increase in the number of apartment units from 570 to 1,675. The number of single detached units was 500 in both years.

¹⁸Some of the variations in crime statistics may in fact be due to the methods municipalities use in compiling and reporting incidents. Toronto, for example, reports all crimes committed during an incident while the standard procedure in other municipalities is to report just the most serious charge. Other variations in the statistics may also be the result of different reporting policies by the law enforcement agencies. In cases of multiple crimes taking place during an incident, one police force might choose to report a violent crime as the most serious while another might select a serious property crime to report.

TABLE 11.1
Demographic characteristics

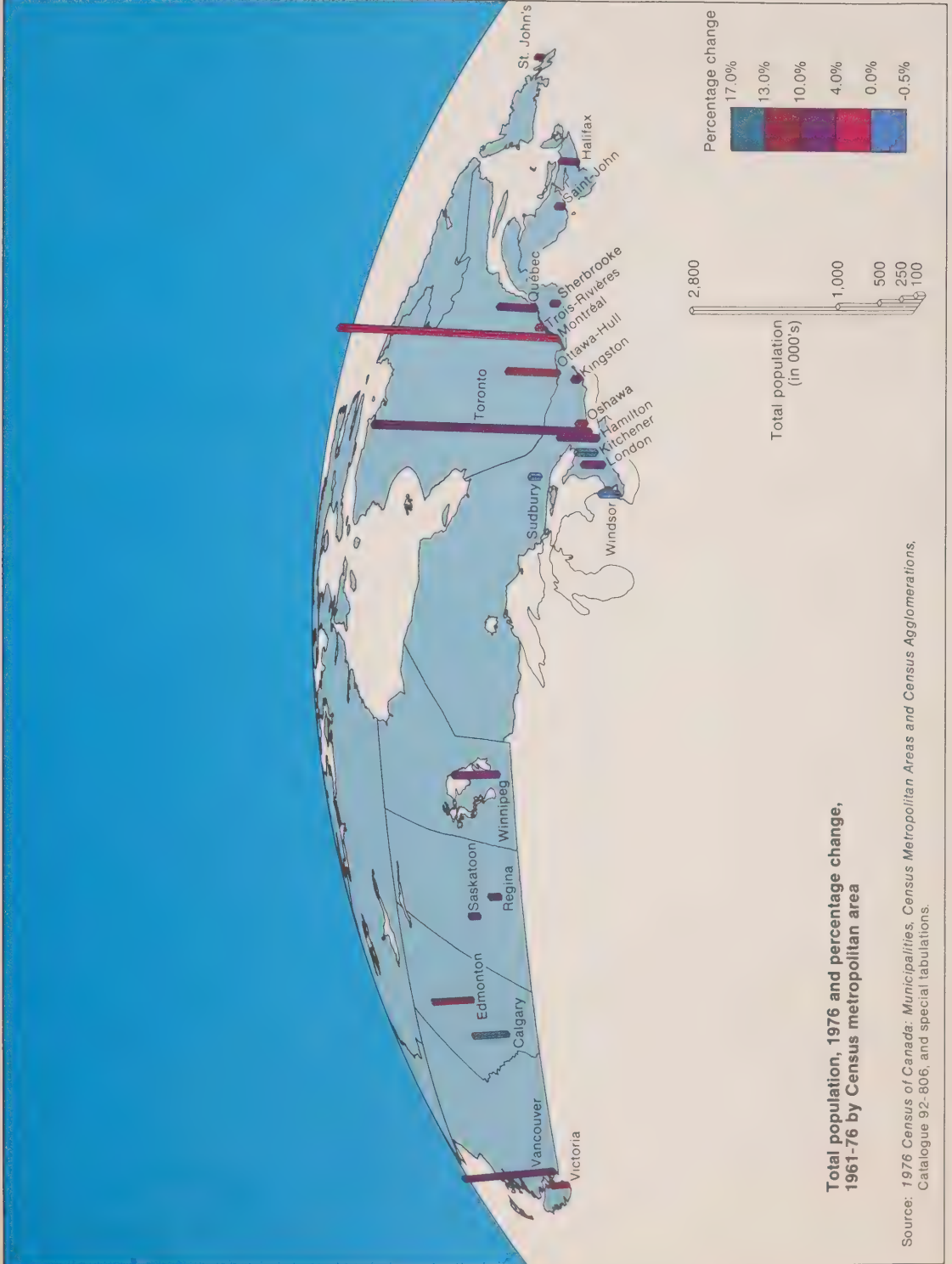
	Population 1976	Population change 1961-76	Single person households as a % of total households 1976	Households with 5 or more persons as a % of total households 1976	Youth dependency ratio 1976 ¹	Old age dependency ratio 1976 ²	Index of ethnic diversity 1971 ³
		<i>000s</i>	<i>per cent</i>				
Toronto	2,803.1	7.7	18.1	17.9	34.7	12.0	.646
Montreal	2,802.5	2.6	19.1	16.6	33.6	11.5	.554
Vancouver	1,166.3	7.7	23.3	14.3	31.9	15.6	.635
Ottawa	693.3	11.8	18.9	17.7	36.1	10.0	.638
Winnipeg	578.2	5.1	21.3	15.5	35.5	15.3	.770
Edmonton	554.2	11.7	18.6	17.7	38.0	9.5	.754
Quebec	542.2	8.1	15.6	20.0	36.9	10.6	.127
Hamilton	529.4	5.2	16.9	17.4	37.0	13.4	.599
Calgary	469.9	16.5	18.6	16.5	37.5	9.5	.657
Kitchener	272.2	14.0	16.1	17.3	39.7	12.0	.655
London	270.4	6.8	20.0	15.1	35.7	13.4	.461
Halifax	268.0	6.9	15.1	19.8	39.1	10.4	.384
Windsor	247.6	-0.4	18.9	18.9	40.3	15.8	.708
Victoria	218.3	11.4	25.1	11.8	30.5	23.9	.431
Sudbury	157.0	-0.4	13.4	23.9	44.7	8.1	.713
Regina	151.2	7.4	19.9	16.9	39.2	13.3	.719
St. John's	143.4	8.7	8.4	30.4	46.5	11.0	.082
Oshawa	135.2	12.4	12.7	18.9	41.3	11.1	.519
Saskatoon	133.8	5.7	20.9	16.7	37.4	14.4	.735
Saint John	113.0	5.8	15.7	21.2	42.8	15.1	.339
Sherbrooke	104.5	7.1	17.7	17.4	36.8	12.6	.235
Trois-Rivières	98.6	0.6	15.9	18.8	32.8	11.7	.099
Kingston	90.7	5.6	19.6	15.7	33.4	12.3	.410

¹Represents the population aged 0-14 as a proportion of persons aged 15-64.

²Represents the population aged 65 and over as a proportion of persons aged 15-64.

³This is a composite measure that evaluates the degree of ethnic diversity of an urban area based on the proportion of the population in each of twelve ethnic groups. The higher the number the greater the diversity. For a complete explanation see *Canadian Urban Trends* Vol. I, Ministry of State for Urban Affairs, Ottawa, 1976.

Source: 1976 *Census of Canada*, catalogues 92-806, 92-823 and 93-804.



Total population, 1976 and percentage change, 1961-76 by Census metropolitan area

Source: 1976 Census of Canada: Municipalities, Census Metropolitan Areas and Census Agglomerations, Catalogue 92-806, and special tabulations.

TABLE 11.3
Population by zone

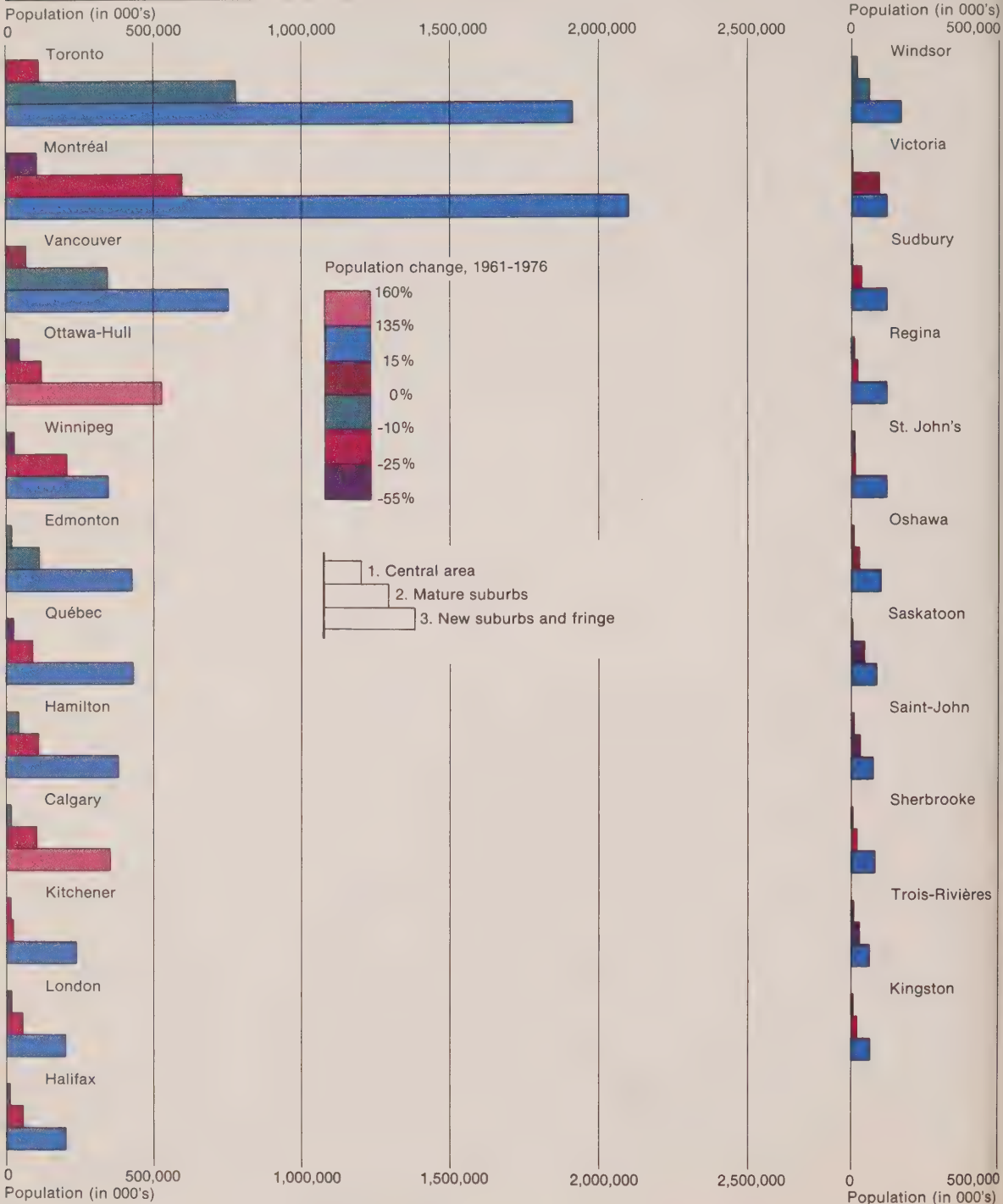
	Total population 1976	Population change 1961 to 1976	Distribution of total metropolitan area population	
			1961	1976
	000s	per cent	per cent	
Toronto				
Central Area	111.2	-12.5	7.0	4.0
Mature Suburbs	778.2	-7.5	46.1	27.7
New Suburbs and Fringe	1,913.6	123.5	46.9	68.3
TOTAL CMA	2,803.0	53.6	100.0	100.0
Montreal				
Central Area	104.8	-38.3	8.1	3.7
Mature Suburbs	596.7	-22.8	36.6	21.3
New Suburbs and Fringe	2,101.2	80.0	55.3	75.0
TOTAL CMA	2,802.7	32.9	100.0	100.0
Vancouver				
Central Area	69.0	9.6	8.0	5.9
Mature Suburbs	344.2	-1.5	44.2	29.5
New Suburbs and Fringe	753.1	99.3	47.8	64.6
TOTAL CMA	1,166.4	47.6	100.0	100.0
Ottawa				
Central Area	45.7	-36.6	16.8	6.6
Mature Suburbs	120.3	-21.5	35.6	17.3
New Suburbs and Fringe	527.4	158.0	47.6	76.1
TOTAL CMA	693.4	61.3	100.0	100.0
Winnipeg				
Central Area	27.4	-28.1	8.0	4.7
Mature Suburbs	205.7	-18.5	53.0	35.6
New Suburbs and Fringe	345.2	86.3	39.0	59.7
TOTAL CMA	578.3	21.6	100.0	100.0
Edmonton				
Central Area	17.5	-1.4	5.3	3.2
Mature Suburbs	111.1	-6.8	35.3	20.0
New Suburbs and Fringe	425.7	112.1	59.4	76.8
TOTAL CMA	554.2	45.7	100.0	100.0
Quebec				
Central Area	24.0	-46.0	12.4	4.4
Mature Suburbs	87.9	-23.7	32.2	16.2
New Suburbs and Fringe	430.3	117.3	55.4	79.4
TOTAL CMA	542.2	51.6	100.0	100.0
Hamilton				
Central Area	41.4	-6.9	11.3	7.8
Mature Suburbs	108.2	-16.4	32.7	20.5
New Suburbs and Fringe	379.7	71.6	56.0	71.7
TOTAL CMA	529.3	33.9	100.0	100.0
Calgary				
Central Area	16.2	-4.5	6.1	3.4
Mature Suburbs	102.4	-17.6	44.5	21.8
New Suburbs and Fringe	351.4	154.9	49.4	78.4
TOTAL CMA	469.9	68.4	100.0	100.0
Kitchener				
Central Area	13.2	-17.8	10.4	4.9
Mature Suburbs	21.7	-14.1	16.3	7.9
New Suburbs and Fringe	237.2	109.0	73.3	87.2
TOTAL CMA	272.1	75.7	100.0	100.0
London				
Central Area	16.1	-30.5	12.8	6.0
Mature Suburbs	54.4	-17.7	36.5	20.1
New Suburbs and Fringe	199.8	117.2	50.8	73.9
TOTAL CMA	270.3	49.1	100.0	100.0
Halifax				
Central Area	11.5	-50.2	12.5	4.3
Mature Suburbs	55.0	-16.5	35.8	20.5
New Suburbs and Fringe	201.6	112.1	51.7	75.2
TOTAL CMA	268.0	45.7	100.0	100.0

TABLE 11.3
Population by zone (concluded)

	Total population 1976	Population change 1961 to 1976	Distribution of total metropolitan area population	
			1961	1976
	<i>000s</i>	<i>per cent</i>	<i>per cent</i>	
Windsor				
Central Area	19.7	-8.0	11.1	8.0
Mature Suburbs	60.6	-9.0	34.4	24.4
New Suburbs and Fringe	167.3	58.8	54.5	67.6
TOTAL CMA	747.6	28.0	100.0	100.0
Victoria				
Central Area	3.5	-20.1	2.8	1.6
Mature Suburbs	94.6	12.7	54.5	43.4
New Suburbs and Fringe	120.1	82.8	42.7	55.0
TOTAL CMA	213.2	41.7	100.0	100.0
Sudbury				
Central Area	3.5	-32.7	4.7	2.2
Mature Suburbs	34.0	-21.6	39.1	21.7
New Suburbs and Fringe	119.5	92.2	56.2	76.1
TOTAL CMA	157.0	41.8	100.0	100.0
Regina				
Central Area	10.2	-28.8	12.7	6.7
Mature Suburbs	21.5	-23.3	25.0	14.3
New Suburbs and Fringe	119.5	71.1	62.3	79.1
TOTAL CMA	151.2	34.8	100.0	100.0
St. John's				
Central Area	11.1	-37.7	19.7	7.8
Mature Suburbs	12.7	-14.9	16.4	8.8
New Suburbs and Fringe	119.6	105.9	63.9	83.4
TOTAL CMA	143.4	57.8	100.0	100.0
Oshawa				
Central Area	8.3	-16.4	12.3	6.1
Mature Suburbs	27.4	10.0	30.8	20.3
New Suburbs and Fringe	99.5	115.9	57.0	73.6
TOTAL CMA	135.2	67.1	100.0	100.0
Saskatoon				
Central Area	4.1	-23.2	5.6	3.1
Mature Suburbs	44.0	-18.1	56.2	32.8
New Suburbs and Fringe	85.7	134.7	38.2	64.1
TOTAL CMA	133.8	40.0	100.0	100.0
Saint John				
Central Area	8.9	-34.7	14.3	7.9
Mature Suburbs	29.7	-32.7	40.6	26.3
New Suburbs and Fringe	74.3	95.4	39.7	65.8
TOTAL CMA	112.9	17.8	100.0	100.0
Sherbrooke				
Central Area	5.4	-37.3	12.2	5.1
Mature Suburbs	18.6	-20.2	37.8	17.8
New Suburbs and Fringe	80.6	129.4	50.0	77.1
TOTAL CMA	104.5	48.7	100.0	100.0
Trois-Rivières				
Central Area	8.2	-39.6	16.2	5.1
Mature Suburbs	27.7	-28.7	45.6	31.4
New Suburbs and Fringe	62.6	101.0	37.2	63.5
TOTAL CMA	98.6	17.8	100.0	100.0
Kingston				
Central Area	6.5	-29.1	14.5	7.2
Mature Suburbs	19.9	-17.5	38.0	21.7
New Suburbs and Fringe	64.3	113.5	47.5	70.9
TOTAL CMA	90.7	43.0	100.0	100.0

Source: 1976 Census of Canada, special tabulations.

CHART 11.4
Population by zone and population change, 1961-1976



Source: 1961 and 1976 Censuses of Canada, special tabulations.

TABLE 11.5
Persons per household and single person and large households by zone

	Average persons per household		Single person households			Large households ¹			
	1961	1976	Total	As a percentage of all households in zone 1976	Percentage change in number of single person households 1961-76	Total	As a percentage of all households in zone 1976	As a percentage of all households in zone 1961	Percentage change in number of large households 1961-76
Toronto									
Central Area	3.5	2.2	21.0	44.3	176.2	4.6	9.6	27.2	-48.2
Mature Suburbs	3.6	2.8	72.3	26.1	193.3	42.8	15.4	26.5	-29.3
New Suburbs and Fringe	3.8	3.2	71.0	12.1	761.5	116.1	19.9	30.3	73.0
Total CMA	3.7	3.0	164.4	18.1	305.7	163.4	18.0	28.3	19.8
Montreal									
Central Area	3.0	1.2	25.4	51.9	83.1	3.2	6.6	20.5	-69.0
Mature Suburbs	3.6	2.7	58.5	26.5	201.3	28.6	12.9	27.0	-49.6
New Suburbs and Fringe	3.9	3.2	92.2	14.1	485.3	121.8	18.6	32.4	30.3
Total CMA	3.7	3.0	176.1	19.0	259.0	153.7	16.6	29.2	-4.4
Vancouver									
Central Area	2.5	1.7	21.1	58.6	205.5	1.1	3.2	11.9	-52.1
Mature Suburbs	3.2	2.5	38.2	29.2	153.1	15.9	12.1	20.2	-26.2
New Suburbs and Fringe	3.6	3.1	35.5	14.8	341.2	41.4	17.2	27.8	46.2
Total CMA	3.3	2.8	94.9	23.3	215.5	58.4	14.4	22.9	11.9
Ottawa									
Central Area	3.3	2.0	10.2	47.3	137.1	1.5	6.8	23.5	-70.0
Mature Suburbs	3.8	2.6	11.2	25.5	266.1	5.5	12.6	29.9	-53.2
New Suburbs and Fringe	4.2	3.2	21.2	13.3	1,406.0	32.7	20.5	38.7	77.5
Total CMA	3.9	3.0	42.6	18.9	386.5	39.7	17.6	32.6	13.2
Winnipeg									
Central Area	2.8	1.9	7.5	55.9	86.2	0.8	6.1	16.8	-59.4
Mature Suburbs	3.5	2.6	20.2	26.5	18.4	9.7	12.7	25.2	-44.9
New Suburbs and Fringe	3.9	3.1	14.2	13.2	667.8	20.0	18.6	32.6	31.2
Total CMA	3.6	2.9	41.9	21.3	242.8	30.5	15.4	27.1	-12.5
Edmonton									
Central Area	2.4	1.7	5.3	54.5	108.0	0.3	3.0	11.5	-62.2
Mature Suburbs	3.3	2.3	15.2	32.8	231.9	3.9	8.5	23.6	-51.7
New Suburbs and Fringe	4.1	3.4	12.8	10.4	548.4	27.5	22.3	37.1	54.5
Total CMA	3.7	3.0	33.3	18.6	266.4	31.7	17.7	30.0	18.8
Quebec									
Central Area	3.4	2.1	4.6	44.7	103.4	0.7	7.5	24.5	-72.8
Mature Suburbs	4.0	2.8	7.0	23.1	281.9	4.4	14.5	34.5	-53.4
New Suburbs and Fringe	4.6	3.4	14.1	11.4	1,035.4	27.7	22.3	44.1	55.3
Total CMA	4.2	3.2	25.7	15.6	382.6	32.8	20.0	37.9	9.3
Hamilton									
Central Area	3.3	2.1	8.2	43.5	230.7	1.5	7.9	23.4	-51.1
Mature Suburbs	3.6	2.9	7.6	20.3	130.4	5.8	15.4	27.0	-40.2
New Suburbs and Fringe	3.8	3.2	13.3	11.4	425.2	22.8	19.6	31.6	27.7
Total CMA	3.7	3.0	29.0	16.8	250.2	30.1	17.4	29.0	-1.6
Calgary									
Central Area	2.3	1.6	5.4	58.7	91.8	0.2	2.4	10.3	-68.0
Mature Suburbs	3.2	2.3	13.8	31.8	166.5	3.5	8.1	21.5	-56.6
New Suburbs and Fringe	3.9	3.4	9.7	9.5	528.1	22.0	21.3	33.0	93.3
Total CMA	3.5	3.0	28.9	18.6	203.4	25.7	16.5	25.6	27.8

TABLE 11.5
Persons per household and single person and large households by zone (continued)

	Average persons per household		Single person households			Large households ¹			
	1961	1976	Total 1976	As a percentage of all households in zone 1976	Percentage change in number of single person households 1961-76	Total 1976	As a percentage of all households in zone 1976	As a percentage of all households in zone 1961	Percentage change in number of large households 1961-76
Kitchener									
Central Area	3.2	2.4	1.8	34.0	138.0	0.5	9.8	20.8	-49.0
Mature Suburbs	3.5	2.6	2.1	26.0	236.5	1.0	12.1	25.2	-44.2
New Suburbs and Fringe	3.7	3.1	10.2	13.7	676.7	13.6	18.3	28.9	56.2
Total CMA	3.6	3.0	14.1	16.1	201.6	15.1	17.2	27.3	31.3
London									
Central Area	2.9	2.0	3.7	47.4	123.3	0.4	5.1	17.4	-69.6
Mature Suburbs	3.2	2.5	6.1	29.3	121.2	2.3	11.0	20.0	-41.7
New Suburbs and Fringe	3.8	3.1	8.6	13.6	676.7	11.2	17.7	30.0	58.6
Total CMA	3.4	2.9	18.3	20.0	233.3	13.9	15.1	24.3	13.1
Halifax									
Central Area	4.1	2.4	1.6	37.7	222.5	0.5	11.1	35.4	-67.9
Mature Suburbs	3.8	2.7	5.0	25.3	230.9	2.6	13.2	30.0	-49.0
New Suburbs and Fringe	4.3	3.4	5.9	10.1	711.3	13.1	22.5	39.3	55.0
Total CMA	4.0	3.2	12.4	15.1	358.6	16.1	19.7	35.2	8.2
Windsor									
Central Area	3.0	2.3	3.6	42.4	111.7	0.8	9.9	19.9	-38.6
Mature Suburbs	3.3	2.7	5.7	25.5	138.7	3.0	13.3	22.4	-33.1
New Suburbs and Fringe	3.9	3.3	6.0	12.0	748.0	11.4	22.9	33.6	26.1
Total CMA	3.6	3.0	15.2	18.9	175.5	15.1	18.9	27.7	2.5
Victoria									
Central Area	2.5	1.7	1.2	764.4	128.6	0.1	3.9	13.9	-62.6
Mature Suburbs	2.9	2.2	13.9	34.2	156.8	3.1	7.7	17.1	-34.3
New Suburbs and Fringe	3.4	3.0	5.4	13.9	182.5	6.4	16.7	23.6	48.7
Total CMA	3.1	2.6	20.4	25.2	161.2	9.6	11.9	19.5	3.9
Sudbury									
Central Area	3.5	2.5	0.4	33.6	223.5	0.1	10.3	23.4	-57.1
Mature Suburbs	3.8	2.8	2.6	22.4	244.2	1.8	15.5	28.7	-43.4
New Suburbs and Fringe	4.5	3.6	3.0	9.2	570.4	9.0	27.5	44.2	48.3
Total CMA	4.1	3.4	6.1	13.3	350.7	11.0	23.9	36.5	14.1
Regina									
Central Area	2.7	1.7	3.3	58.9	109.4	0.3	4.9	15.4	-61.6
Mature Suburbs	3.6	2.7	2.1	26.7	205.2	1.1	13.5	27.7	-47.7
New Suburbs and Fringe	3.8	3.2	4.5	12.4	387.5	7.1	19.5	30.7	27.8
Total CMA	3.6	3.0	9.9	19.9	210.3	8.4	16.9	27.6	1.4
St. John's									
Central Area	4.7	3.7	0.5	16.0	118.6	0.9	29.9	46.3	-46.7
Mature Suburbs	4.8	3.8	0.4	12.7	212.0	1.0	32.0	46.7	-21.6
New Suburbs and Fringe	4.8	3.8	2.2	7.2	557.7	9.3	30.3	47.4	69.7
Total CMA	4.8	3.9	3.1	8.4	352.5	11.2	30.4	47.1	32.6
Oshawa									
Central Area	3.3	2.7	0.8	27.0	96.8	0.5	15.2	22.8	-33.1
Mature Suburbs	3.6	2.9	1.7	18.2	251.6	1.4	15.2	26.8	-23.6
New Suburbs and Fringe	3.8	3.3	2.8	9.6	372.2	6.0	20.3	29.0	76.3
Total CMA	3.6	3.2	5.3	12.7	257.8	7.8	18.8	27.5	32.8

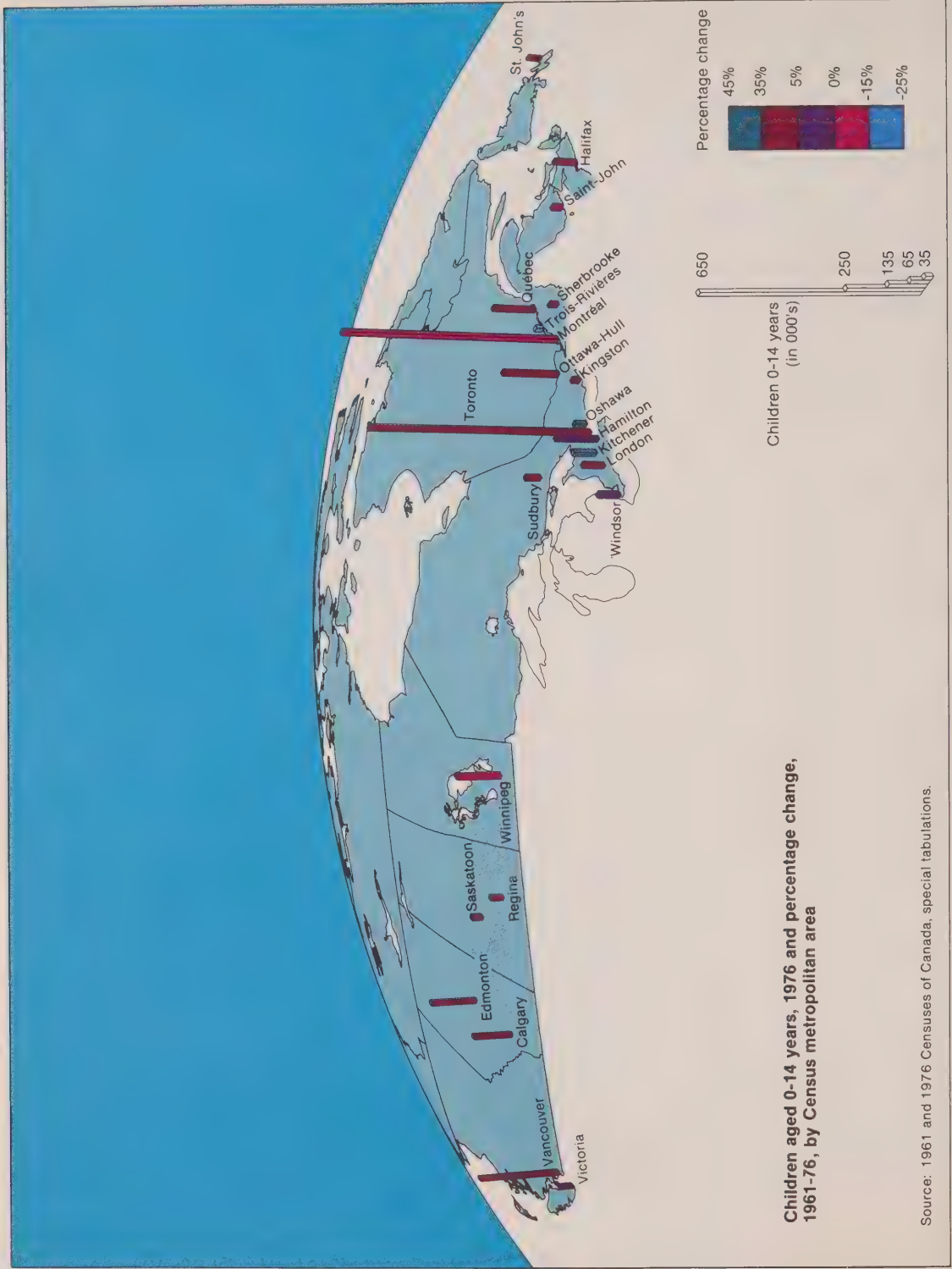
TABLE 11.5
Persons per household and single person and large households by zone (concluded)

	Average persons per household		Single person households			Large households ¹			
	1961	1976	Total 1976	As a percentage of all households in zone 1976	Percentage change in number of single person households 1961-76	Total 1976	As a percentage of all households in zone 1976	As a percentage of all households in zone 1961	Percentage change in number of large households 1961-76
Saskatoon									
Central Area	2.5	1.8	1.3	56.8	67.8	9.5	4.4	15.1	-64.8
Mature Suburbs	3.4	2.5	4.9	28.5	181.1	1.9	10.9	24.9	-50.4
New Suburbs and Fringe	3.9	3.3	3.3	12.7	652.3	5.5	21.7	33.8	80.5
Total CMA	3.5	2.9	9.3	20.9	222.7	7.5	16.7	27.3	5.9
Saint John									
Central Area	3.1	2.4	1.2	35.0	58.8	0.4	10.8	19.8	-53.1
Mature Suburbs	3.8	3.0	1.7	18.4	84.7	1.7	18.0	30.3	-49.2
New Suburbs and Fringe	4.1	3.5	2.4	11.4	343.3	5.1	24.1	36.2	54.8
Total CMA	3.8	3.2	5.4	15.8	138.9	7.2	21.1	30.7	-3.5
Sherbrooke									
Central Area	3.2	2.2	0.9	41.7	81.9	0.2	7.6	21.5	-68.0
Mature Suburbs	4.0	2.8	1.6	23.9	271.7	1.0	14.0	34.7	-58.3
New Suburbs and Fringe	4.2	3.2	3.4	13.9	676.8	4.7	19.2	37.6	55.7
Total CMA	4.0	3.0	5.9	17.7	330.3	5.8	17.4	34.2	1.0
Trois-Rivières									
Central Area	3.6	2.2	1.4	41.4	224.3	0.3	8.4	28.0	-69.4
Mature Suburbs	4.2	2.9	1.1	10.8	332.1	1.4	15.1	37.9	-58.6
New Suburbs and Fringe	4.6	3.4	1.8	10.1	845.3	4.1	22.8	46.1	37.7
Total CMA	4.3	3.1	4.9	16.0	381.8	5.8	18.8	38.9	-21.1
Kingston									
Central Area	3.2	2.1	1.2	41.5	150.0	0.2	6.7	21.8	-65.6
Mature Suburbs	3.5	2.6	1.8	24.2	145.8	0.9	11.9	26.0	-48.9
New Suburbs and Fringe	3.8	3.1	2.8	14.5	748.0	3.6	18.6	30.9	74.6
Total CMA	3.6	2.9	5.8	19.6	275.2	4.7	15.8	27.4	7.4

¹Includes households with 5 or more persons.

Source: 1976 Census of Canada, special tabulation.

Map 11.6



Source: 1961 and 1976 Censuses of Canada, special tabulations.

Produced by Geocartographics Group, Statistics Canada, 1979.

TABLE 11.7
Age distribution by zone

	Population aged 0-14 years			Population aged 15-34 years			Population aged 65 years and over		
	As a percentage of total zone population		Percentage change in total population aged 0-14 1961-76	As a percentage of total zone population		Percentage change in total population aged 15-34 1961-76	As a percentage of total zone population		Percentage change in total population aged 65 and over 1961-76
	1961	1976		1961	1976		1961	1976	
Toronto									
Central Area	22.0	13.9	-44.8	31.0	43.8	23.7	11.1	11.4	-10.0
Mature Suburbs	23.6	20.2	-21.1	29.0	34.8	11.1	10.6	12.2	6.2
New Suburbs and Fringe	35.1	25.6	63.0	28.1	35.1	179.5	4.6	6.3	210.4
Total CMA	28.9	23.7	25.6	28.7	35.4	89.3	7.8	8.2	60.6
Montreal									
Central Area	21.0	12.3	-63.8	30.7	38.4	-22.7	10.3	14.4	-13.9
Mature Suburbs	27.1	18.7	-46.7	30.4	34.3	-12.6	7.6	11.8	20.1
New Suburbs and Fringe	34.7	25.0	29.7	30.5	36.5	115.1	4.5	6.5	158.5
Total CMA	30.8	23.2	-0.1	30.5	36.1	57.3	6.1	7.9	72.2
Vancouver									
Central Area	13.1	8.3	-30.9	25.8	37.6	59.7	21.5	20.1	2.7
Mature Suburbs	25.0	17.2	-32.1	25.9	35.4	34.6	12.6	14.1	10.0
New Suburbs and Fringe	34.7	24.9	42.8	25.5	34.6	170.3	8.0	8.1	100.9
Total CMA	28.7	21.6	11.3	25.7	35.0	101.0	11.1	10.6	40.3
Ottawa									
Central Area	23.3	11.6	-68.5	30.1	43.6	-8.2	11.2	14.3	-19.2
Mature Suburbs	29.6	18.3	-51.5	29.3	37.7	1.2	8.5	12.2	12.6
New Suburbs and Fringe	40.2	27.3	75.6	28.3	38.0	245.8	3.3	5.0	289.5
Total CMA	33.6	24.7	18.8	29.0	38.3	113.4	6.5	6.8	70.3
Winnipeg									
Central Area	16.4	11.5	-49.5	31.4	38.5	-11.8	16.0	19.8	-10.9
Mature Suburbs	27.0	20.2	-39.1	28.3	35.1	0.9	10.8	14.2	6.8
New Suburbs and Fringe	37.2	26.5	32.7	27.0	35.7	145.8	5.1	6.9	151.1
Total CMA	30.1	23.5	-5.0	28.1	35.7	54.1	14.2	10.1	36.3
Edmonton									
Central Area	17.5	7.6	-57.4	34.3	47.4	36.3	14.0	13.6	-4.1
Mature Suburbs	27.7	16.0	-46.1	31.3	44.9	33.7	8.8	12.0	28.3
New Suburbs and Fringe	40.6	29.0	51.6	30.5	37.6	161.7	3.3	4.7	203.5
Total CMA	34.8	25.8	21.3	31.0	39.4	108.7	5.8	6.5	83.6
Quebec									
Central Area	20.4	10.5	-72.3	32.3	38.0	-36.4	9.5	15.9	-9.6
Mature Suburbs	27.9	15.7	-57.3	31.3	34.0	-17.1	7.7	14.5	44.0
New Suburbs and Fringe	36.6	26.5	57.2	31.3	39.5	174.5	4.1	5.3	179.7
Total CMA	31.8	24.0	14.5	31.4	38.6	86.1	5.9	7.3	85.3
Hamilton									
Central Area	24.6	15.2	-42.6	29.1	37.0	18.1	11.9	18.5	44.5
Mature Suburbs	27.2	22.3	-31.6	27.4	32.8	-0.1	10.1	12.4	4.0
New Suburbs and Fringe	35.9	26.3	25.7	26.5	33.9	119.3	5.7	6.9	106.7
Total CMA	31.8	24.6	3.7	27.1	33.9	67.5	7.8	8.9	52.8
Calgary									
Central Area	14.7	7.2	-53.2	30.2	45.5	43.8	19.4	19.4	-4.8
Mature Suburbs	29.1	16.3	-53.8	29.4	43.7	22.5	9.3	11.7	3.6
New Suburbs and Fringe	40.2	29.1	84.2	31.4	37.8	206.9	3.3	4.4	242.8
Total CMA	33.7	25.5	27.5	30.4	39.4	117.8	6.9	6.5	57.7
Kitchener									
Central Area	24.9	15.9	-47.6	28.8	33.7	-3.8	10.5	17.9	39.9
Mature Suburbs	26.8	19.4	-37.9	29.2	35.9	5.6	8.9	13.8	33.4
New Suburbs and Fringe	34.1	27.4	68.0	27.7	37.1	179.9	7.0	6.8	104.3
Total CMA	32.0	26.2	44.2	28.1	36.8	130.7	7.7	7.9	81.6
London									
Central Area	22.7	12.2	-62.6	33.0	41.8	-12.0	11.6	17.0	2.1
Mature Suburbs	25.7	18.6	-40.6	27.9	35.1	3.5	12.3	15.9	7.0
New Suburbs and Fringe	36.0	26.4	59.1	26.9	36.3	192.7	5.5	6.5	154.0
Total CMA	30.6	24.0	17.0	28.1	36.4	93.3	8.8	9.0	53.3
Halifax									
Central Area	24.6	15.0	-69.8	41.5	41.7	-50.0	7.1	15.6	8.8
Mature Suburbs	26.4	16.7	-47.1	32.0	38.6	0.8	8.2	12.9	32.5

TABLE 11.7
Age distribution by zone (concluded)

	Population aged 0-14 years			Population aged 15-34 years			Population aged 65 years and over		
	As a percentage of total zone population		Percentage change in total population aged 0-14 1961-76	As a percentage of total zone population		Percentage change in total population aged 15-34 1961-76	As a percentage of total zone population		Percentage change in total population aged 65 and over 1961-76
	1961	1976		1961	1976		1961	1976	
Halifax (concluded)									
New Suburbs and Fringe	40.2	29.1	57.3	31.4	37.8	169.4	3.3	4.4	170.7
Total CMA	32.9	26.1	15.4	32.4	38.8	74.5	5.7	6.9	75.3
Windsor									
Central Area	24.3	19.1	-27.8	25.4	32.0	16.3	14.4	19.4	24.1
Mature Suburbs	27.6	21.6	-28.8	25.2	34.1	23.5	11.5	14.5	13.9
New Suburbs and Fringe	38.1	28.2	17.5	25.8	33.5	106.1	5.1	7.5	133.0
Total CMA	32.9	25.8	0.5	25.5	33.5	68.2	8.3	10.1	55.4
Victoria									
Central Area	14.7	8.0	-56.6	20.1	26.1	3.9	34.1	35.1	-17.7
Mature Suburbs	25.3	14.8	-33.8	22.4	32.3	62.8	18.6	22.0	33.2
New Suburbs and Fringe	32.0	24.0	37.3	26.0	33.1	132.1	11.3	9.8	59.1
Total CMA	27.8	19.8	0.7	23.9	32.6	93.7	15.9	15.5	37.9
Sudbury									
Central Area	22.6	18.3	-45.5	32.3	35.4	-26.3	8.5	12.1	-3.7
Mature Suburbs	31.4	22.3	-44.3	33.2	36.2	-14.5	4.1	9.5	83.8
New Suburbs and Fringe	42.8	31.5	41.7	28.6	36.2	143.4	2.5	3.8	199.7
Total CMA	37.4	29.2	10.9	30.6	36.2	67.8	3.4	5.3	121.2
Regina									
Central Area	14.5	9.8	-51.8	36.1	38.7	-23.5	15.5	21.1	-3.2
Mature Suburbs	28.1	21.6	-40.8	30.9	36.2	-10.0	9.4	12.6	2.8
New Suburbs and Fringe	36.4	27.8	30.7	31.2	36.8	101.5	5.0	6.9	137.0
Total CMA	31.5	25.7	10.0	31.8	36.8	56.4	7.5	8.7	57.5
St. John's									
Central Area	32.0	26.3	-48.9	30.8	36.2	-26.7	8.0	10.0	-22.7
Mature Suburbs	32.8	25.6	-33.6	32.0	34.8	-8.9	6.9	10.2	25.5
New Suburbs and Fringe	38.5	30.2	61.6	29.6	37.6	160.8	5.2	6.4	151.1
Total CMA	36.3	29.5	28.3	30.3	37.2	93.9	6.1	7.0	82.3
Oshawa									
Central Area	26.1	22.6	-27.6	28.8	35.2	2.4	9.8	11.9	1.2
Mature Suburbs	31.4	23.3	-18.6	27.6	34.1	35.6	7.4	11.9	76.6
New Suburbs and Fringe	34.6	28.6	78.4	29.0	35.9	167.2	6.1	5.6	97.5
Total CMA	32.6	27.2	39.2	28.5	35.5	107.6	7.0	7.2	73.9
Saskatoon									
Central Area	14.8	8.7	-54.7	27.9	27.2	-25.2	22.9	30.9	3.8
Mature Suburbs	28.1	17.9	-47.9	30.8	39.1	3.9	10.7	14.2	8.2
New Suburbs and Fringe	40.0	28.9	69.4	31.4	38.1	183.3	4.7	6.1	204.1
Total CMA	31.9	24.7	8.2	30.9	38.1	72.6	9.1	9.5	46.1
Saint John									
Central Area	22.3	35.3	-48.8	29.1	35.3	-20.7	13.9	16.6	-21.9
Mature Suburbs	31.5	22.5	-52.0	26.8	32.8	-17.7	9.2	13.2	-3.3
New Suburbs and Fringe	38.3	30.1	53.5	25.3	35.3	172.7	6.4	7.3	120.5
Total CMA	32.9	27.1	-2.9	26.5	34.7	54.0	8.8	9.6	28.5
Sherbrooke									
Central Area	22.3	11.9	-66.4	30.1	34.5	-28.2	10.9	18.6	6.3
Mature Suburbs	33.3	19.4	-59.3	30.8	37.7	-14.5	7.0	12.1	21.5
New Suburbs and Fringe	37.2	26.6	64.3	29.7	38.7	198.6	5.9	7.0	172.1
Total CMA	33.9	24.6	7.9	30.2	38.3	88.7	6.9	8.5	82.8
Trois-Rivières									
Central Area	23.5	13.0	-66.5	32.2	32.1	-39.8	9.9	18.7	14.0
Mature Suburbs	32.5	18.5	-59.3	33.3	35.7	-23.6	5.3	11.1	50.7
New Suburbs and Fringe	41.1	25.7	25.8	29.9	38.3	157.4	3.6	5.4	201.3
Total CMA	34.2	22.6	22.6	31.9	37.1	37.1	5.4	8.1	8.1
Kingston									
Central Area	24.3	11.1	-67.8	31.9	43.7	-3.0	12.4	17.2	-1.7
Mature Suburbs	28.4	18.7	-45.6	29.2	36.9	9.8	9.7	13.1	11.6
New Suburbs and Fringe	32.9	25.5	65.4	31.4	37.4	154.5	5.0	6.3	169.8
Total CMA	30.0	23.0	9.7	30.6	38.2	78.3	7.8	8.5	56.1

Source: 1976 Census of Canada, special tabulations.

TABLE 11.8
Children per family and families with 3 or more children by zone

	Children per family		Total 1976	Families with 3 or more children	
	1961	1976		As a percentage of all families 1976	Percentage change in number of large families 1961-76
Toronto					
Central Area	1.3	1.2	3,200	15.6	-33.8
Mature Suburbs	1.2	1.3	30,680	16.0	-5.5
New Suburbs and Fringe	1.6	1.5	98,970	19.6	+88.1
Total CMA	1.4	1.4	132,850	18.5	47.7
Montreal					
Central Area	1.4	1.1	2,810	14.7	-57.5
Mature Suburbs	1.6	1.3	26,320	17.7	-39.0
New Suburbs and Fringe	1.8	1.5	110,520	20.2	40.5
Total CMA	1.7	1.5	139,650	19.5	8.8
Vancouver					
Central Area	0.8	0.7	905	7.5	-27.3
Mature Suburbs	1.3	1.2	12,835	15.1	-19.0
New Suburbs and Fringe	1.7	1.4	37,275	18.8	48.5
Total CMA	1.4	1.3	51,015	17.3	20.9
Ottawa					
Central Area	1.5	1.0	1,125	13.1	-66.1
Mature Suburbs	1.7	1.3	4,825	16.7	-47.3
New Suburbs and Fringe	2.1	1.6	30,920	23.3	88.9
Total CMA	1.8	1.5	36,870	21.6	27.9
Winnipeg					
Central Area	1.0	1.0	520	11.2	-47.8
Mature Suburbs	1.4	1.3	8,555	16.7	-32.4
New Suburbs and Fringe	1.8	1.5	19,030	21.1	42.2
Total CMA	1.5	1.4	28,105	19.3	4.0
Edmonton					
Central Area	1.1	0.6	190	5.9	-61.0
Mature Suburbs	1.4	1.1	3,440	13.2	-44.9
New Suburbs and Fringe	2.0	1.7	25,810	24.3	66.7
Total CMA	1.8	1.5	29,440	21.7	32.5
Quebec					
Central Area	1.6	1.2	690	15.2	-67.8
Mature Suburbs	1.9	1.4	4,100	19.5	-46.7
New Suburbs and Fringe	2.4	1.7	26,375	24.9	67.0
Total CMA	2.1	1.6	31,165	23.7	21.6
Hamilton					
Central Area	1.3	1.0	1,245	13.3	-37.4
Mature Suburbs	1.4	1.3	5,085	18.0	-21.6
New Suburbs and Fringe	1.8	1.5	21,250	21.0	38.0
Total CMA	1.6	1.4	27,580	20.0	15.5
Calgary					
Central Area	0.9	0.6	165	6.1	-54.6
Mature Suburbs	1.4	1.0	3,055	12.3	-54.4
New Suburbs and Fringe	1.9	1.6	20,635	23.1	107.9
Total CMA	1.6	1.5	23,855	20.4	40.4
Kitchener					
Central Area	1.3	1.1	430	13.6	-40.8
Mature Suburbs	1.4	1.2	830	14.9	-34.6
New Suburbs and Fringe	1.7	1.5	12,915	20.9	75.3
Total CMA	1.6	1.5	14,175	20.1	51.4
London					
Central Area	1.2	1.0	370	11.6	-58.7
Mature Suburbs	1.4	1.2	2,070	15.5	-32.9
New Suburbs and Fringe	1.8	1.5	10,670	20.5	71.8
Total CMA	1.6	1.4	13,110	19.1	28.6
Halifax					
Central Area	1.8	1.3	380	18.1	-64.3
Mature Suburbs	1.5	1.3	2,100	16.6	-38.6
New Suburbs and Fringe	2.1	1.7	12,160	24.0	66.3
Total CMA	1.8	1.6	14,640	22.4	24.1

TABLE 11.8
Children per family and families with 3 or more children by zone (concluded)

	Children per family		Total 1976	Families with 3 or more children	
	1961	1976		As a percentage of all families 1976	Percentage change in number of large families 1961-76
Windsor					
Central Area	1.4	1.3	705	16.0	-28.9
Mature Suburbs	1.4	1.3	2,760	17.9	-24.6
New Suburbs and Fringe	1.9	1.7	10,890	25.3	32.5
Total CMA	1.7	1.5	14,355	22.8	11.5
Victoria					
Central Area	1.1	0.9	55	10.3	-53.4
Mature Suburbs	1.3	1.0	2,765	11.4	-30.8
New Suburbs and Fringe	1.6	1.3	5,815	18.0	46.8
Total CMA	1.4	1.2	8,635	15.1	6.9
Sudbury					
Central Area	1.3	1.2	100	12.4	-52.4
Mature Suburbs	1.7	1.4	1,680	19.5	-35.7
New Suburbs and Fringe	2.3	1.9	8,605	29.3	58.4
Total CMA	2.0	1.7	10,385	26.8	25.8
Regina					
Central Area	0.9	0.9	175	10.2	-43.2
Mature Suburbs	1.5	1.3	980	18.6	-34.1
New Suburbs and Fringe	1.7	1.5	6,575	21.6	39.9
Total CMA	1.6	1.5	7,730	20.7	19.0
St. John's					
Central Area	2.2	2.1	735	32.2	-42.5
Mature Suburbs	2.2	2.0	915	33.1	-11.6
New Suburbs and Fringe	2.4	1.9	7,970	28.5	74.5
Total CMA	2.3	1.9	9,620	29.2	39.8
Oshawa					
Central Area	1.3	1.4	360	18.1	-24.2
Mature Suburbs	1.5	1.3	1,245	17.3	-14.3
New Suburbs and Fringe	1.7	1.6	5,515	21.2	90.4
Total CMA	1.6	1.5	7,120	20.3	47.6
Saskatoon					
Central Area	1.0	0.7	60	8.0	-55.6
Mature Suburbs	1.5	1.2	1,700	15.9	42.4
New Suburbs and Fringe	1.9	1.6	5,200	24.5	93.3
Total CMA	1.6	1.5	6,960	21.3	20.5
Saint John					
Central Area	1.3	1.3	335	17.5	-42.1
Mature Suburbs	1.8	1.5	1,545	21.8	-44.6
New Suburbs and Fringe	2.0	1.7	4,820	26.4	-63.9
Total CMA	1.8	1.7	6,700	24.6	6.2
Sherbrooke					
Central Area	1.6	1.1	165	15.6	-61.7
Mature Suburbs	2.0	1.4	915	20.1	-52.3
New Suburbs and Fringe	2.2	1.6	4,565	22.5	65.3
Total CMA	2.1	1.5	5,645	21.8	10.5
Trois-Rivières					
Central Area	1.8	1.2	290	16.1	-62.8
Mature Suburbs	2.1	1.4	1,335	18.1	-54.2
New Suburbs and Fringe	2.5	1.7	3,885	24.7	43.7
Total CMA	2.2	1.6	5,510	22.1	-14.5
Kingston					
Central Area	1.4	0.9	145	10.6	-63.8
Mature Suburbs	1.6	1.2	765	15.6	-42.9
New Suburbs and Fringe	1.9	1.5	3,415	21.4	82.5
Total CMA	1.7	1.4	4,325	19.5	19.8

Source: 1976 Census of Canada, special tabulation.

TABLE 11.9
Family income

	Average total family income, 1971 ¹	Average family income as a % of Canadian average ²	Percentage of families with income under \$5,000, 1971 ³
	<i>dollars</i>		
Toronto	11,841	112.7	13.4
Montreal	10,292	98.0	18.4
Vancouver	10,664	101.5	18.4
Ottawa	12,010	114.4	13.1
Winnipeg	9,989	95.1	17.4
Edmonton	10,660	101.5	16.3
Quebec	10,159	96.7	16.9
Hamilton	10,757	102.4	14.2
Calgary	10,943	104.2	15.2
Kitchener	10,661	101.5	15.0
London	10,763	102.5	15.0
Halifax	10,176	96.9	15.8
Windsor	11,281	107.4	14.9
Victoria	9,921	94.5	19.1
Sudbury	11,739	111.8	9.7
Regina	9,637	91.8	19.8
St. John's	8,488	80.8	28.0
Saskatoon	9,479	90.3	20.7
Saint John	8,821	84.0	22.4
Sherbrooke	9,368	89.2	22.0
Trois-Rivières	8,992	85.6	22.1
Kingston	10,717	102.0	15.2

¹Average total family income includes the incomes received by all members of the family 15 years old and over, from all sources, during the calendar year 1970. Included are wages and salaries, net income from business and professional practice, net income from farm operations, transfer payments, retirement pensions, investment income and other miscellaneous sources. A family consists of a husband and wife (with or without children who have never been married, regardless of age) or a parent with one or more children never married, living in the same dwelling. Data were collected from a one-third sample of families in Canada.

²Average total family income expressed as a percentage of the average total family income for urban Canada (\$10,502).

³Figures are for census families. A census family consists of a husband and wife (with or without children who have never been married, regardless of age) or a parent with one or more children never married, living in the same dwelling. A family may consist also of a man or woman living with a guardianship child or ward under 21 years of age for whom no pay was received. Income refers to the total income received during 1970 from wages and salaries, business or professional practice, farm operations, family and youth allowances, government old age pensions, other government payments, retirement pensions from previous employment, bond and deposit interest and dividends, other investment sources and other sources. Family income refers to the sum of incomes received by all members of the family 15 years of age and over.

Source: 1971 Census of Canada, Catalogue 93-724.

TABLE 11.10
Expenditures on housing, 1974

Urban area ¹	Tenants whose housing expenditures ² exceed 30% of gross income ³	Owner-occupants whose housing expenditures ² exceed 30% of gross income ³
	<i>per cent</i>	
Toronto	23.1	13.2
Montreal	19.1	10.2
Vancouver	33.6	13.7
Ottawa	24.2	6.6
Winnipeg	31.0	10.8
Edmonton	24.4	7.5
Quebec	25.2	9.2
Hamilton	26.1	13.1
Calgary	27.8	11.5
Kitchener	21.3	9.7
London	27.9	9.5
Halifax	25.6	13.0
Windsor	27.2	10.1
Victoria	36.4	14.7
Sudbury	20.3	9.0
Regina	28.4	7.5
St. John's	28.2	14.0
Saskatoon	29.1	9.1
Saint John	24.7	16.0

¹Data were not available for Oshawa, Kingston, Sherbrooke or Trois-Rivières.

²Housing expenditures include: for home owners, amount paid for principal, interest and taxes as well as for utilities and services; for tenants rent, plus any payments for facilities such as water, electricity, fuel or parking.

³The use of current income as an indication of ability to pay may prove misleading. Excluded are accumulated savings and potential future income likely to come from current employment.

Source: 1974 Survey of Housing Units, CMHC, unpublished tabulation.

CHART 11.11
Educational achievement 1976



Notes: Percent population between the age of 20 to 34 with a grade 10 or less education and not presently in school. Data are not available for Trois-Rivières, Sherbrooke and Kingston.

TABLE 11.12
Labour force activity

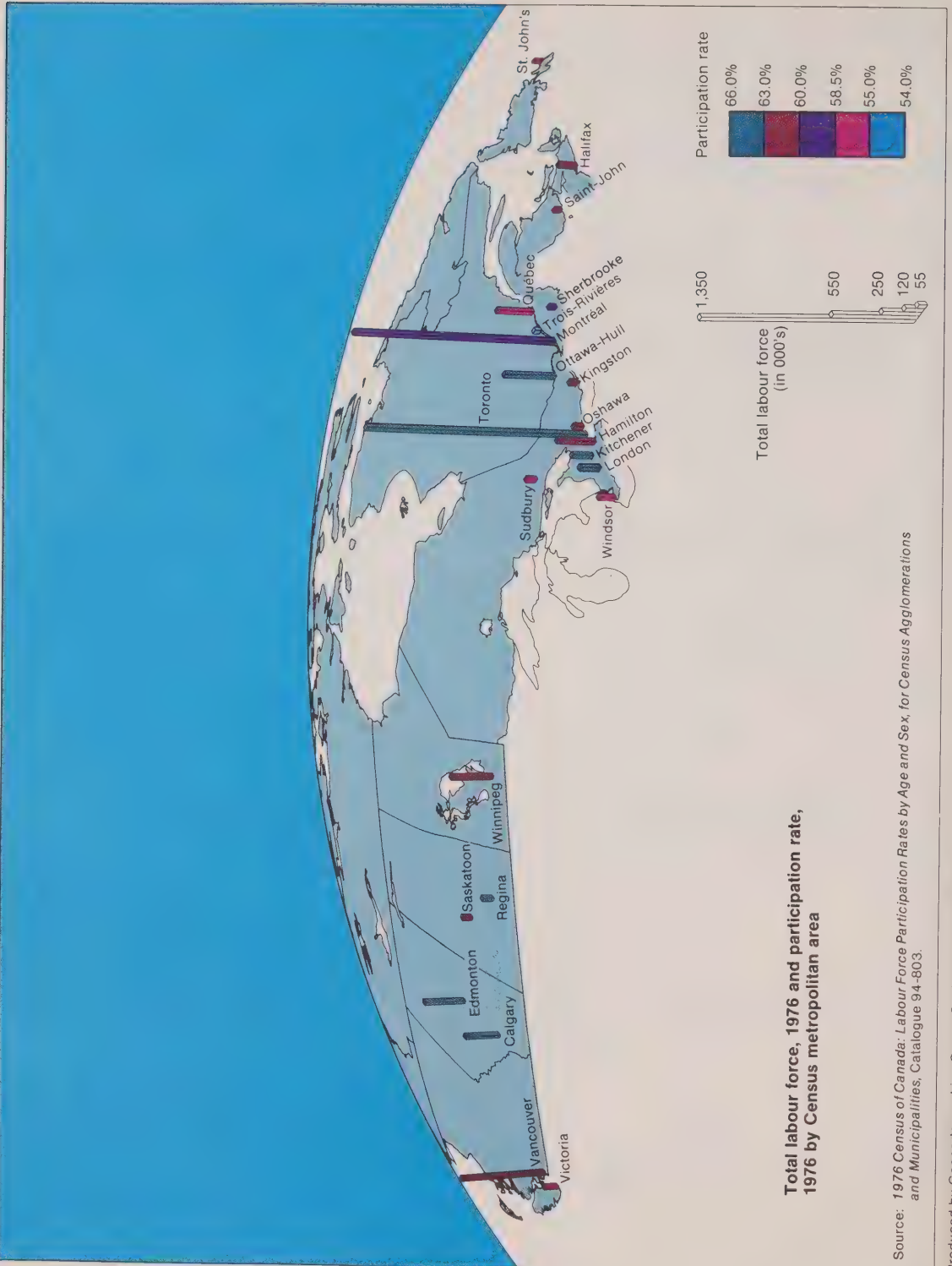
	Total labour force		Unemployment rate		Labour force participation rate	
	1971	1976	1971	1976	1971	1976
	000s					
Toronto	1,205.0	1,392.9	6.9	5.9	65.9	65.1
Montreal	1,110.9	1,281.2	9.3	6.2	55.8	59.5
Vancouver	485.9	554.4	9.4	8.2	60.4	60.6
Ottawa	265.4	333.4	6.4	6.0	63.3	62.9
Winnipeg	248.1	269.7	7.4	4.9	62.4	61.0
Edmonton	222.5	269.6	7.4	4.4	64.8	65.5
Quebec	183.6	239.2	8.1	7.4	53.0	58.0
Hamilton	217.0	241.8	7.6	6.2	60.8	60.6
Calgary	181.0	227.7	7.5	4.7	64.6	65.1
Kitchener	107.2	132.0	6.0	5.9	66.5	65.7
London	131.5	131.8	6.5	6.4	63.5	64.1
Halifax	97.1	121.5	6.9	7.3	61.7	61.4
Windsor	107.4	104.2	8.8	8.0	58.7	56.7
Victoria	82.8	98.4	8.4	7.4	55.7	56.2
Sudbury	63.4	63.5	6.2	7.3	60.9	57.2
Regina	63.0	72.1	4.8	3.4	63.5	64.2
St. John's	49.3	56.3	8.3	10.0	55.4	55.7
Oshawa	38.9	61.1	8.4	7.7	61.5	62.0
Saskatoon	54.5	62.8	8.7	5.3	60.8	62.3
Saint John	43.3	46.4	7.4	6.6	57.7	56.3
Sherbrooke	31.5	46.6	9.2	8.1	54.2	59.1
Trois-Rivières	21.0	41.4	12.8	8.7	50.6	54.3
Kingston	27.1	42.5	8.0	8.7	60.8	60.7
Canada	8,813.3	10,261.7	7.9	6.8	58.0	60.0

Source: 1971 Census of Canada, Catalogue 94-772; 1976 Census of Canada, Catalogue 94-803 and special tabulations.

TABLE 11.13
Labour force participation rate by zone

	Central Area		Mature Ring		Fringe	
	1971	1976	1971	1976	1971	1976
Toronto	66.8	65.2	64.9	62.2	66.3	66.3
Montreal	56.2	59.6	53.5	56.1	56.6	60.6
Vancouver	62.4	60.1	60.2	59.1	59.8	61.5
Ottawa-Hull	61.3	62.8	59.8	59.4	63.4	65.1
Winnipeg	61.1	56.9	60.6	57.7	64.2	63.4
Edmonton	68.0	67.3	64.9	63.6	64.5	66.1
Quebec	51.4	55.6	49.9	51.2	54.1	59.8
Hamilton	57.9	56.0	58.4	56.1	62.2	62.5
Calgary	64.8	61.1	64.5	63.8	64.6	65.8
Kitchener	63.5	60.1	65.5	63.3	66.9	66.3
London	64.6	60.9	59.9	57.5	64.5	66.4
Halifax	59.7	57.5	61.9	59.8	61.9	62.2
Windsor	54.9	48.6	56.6	53.5	60.2	59.1
Victoria	45.1	44.5	53.1	52.6	59.0	59.7
Sudbury	69.1	58.5	60.6	55.1	60.6	57.9
Regina	63.4	57.7	60.8	61.3	64.2	65.5
St. John's	53.5	51.0	55.9	53.4	55.6	56.4
Saskatoon	50.7	48.4	59.2	59.6	62.8	64.8
Saint John	60.8	55.0	56.3	51.8	57.8	58.6
Sherbrooke	50.5	50.9	51.0	53.3	56.5	61.3
Trois-Rivières	50.5	46.8	49.5	50.1	52.3	57.4
Oshawa	56.7	55.7	59.0	57.5	62.1	63.9
Kingston	58.1	56.8	60.7	58.2	61.4	62.2

Source: 1971 Census of Canada and 1976 Census of Canada, special tabulations.



Source: 1976 Census of Canada: Labour Force Participation Rates by Age and Sex, for Census Agglomerations and Municipalities, Catalogue 94-803.

TABLE 11.15
Unemployment rate by zone

	Central Area		Mature Ring		Fringe	
	1971	1976	1971	1976	1971	1976
Toronto	10.7	8.7	7.9	6.6	6.0	5.4
Montreal	11.9	6.9	10.4	7.3	8.7	5.8
Vancouver	15.3	12.5	9.6	8.9	8.4	7.4
Ottawa-Hull	8.1	8.3	7.1	7.0	5.8	5.6
Winnipeg	11.0	7.2	8.4	5.9	6.1	4.1
Edmonton	12.0	5.4	8.6	5.5	6.5	4.0
Quebec	10.4	8.4	8.8	7.8	7.6	7.2
Hamilton	11.1	9.0	9.7	7.9	6.3	5.4
Calgary	12.6	8.3	8.3	5.5	6.7	4.2
Kitchener	8.6	6.9	7.1	6.9	5.6	5.8
London	9.0	9.3	7.9	8.2	5.8	5.6
Halifax	9.5	9.4	7.4	7.7	6.3	7.1
Windsor	13.4	12.4	10.3	9.4	7.5	7.0
Victoria	19.1	11.6	9.2	8.3	7.2	6.5
Sudbury	7.3	9.7	5.9	7.6	6.2	7.1
Regina	11.3	4.1	8.9	4.5	6.8	3.1
St. John's	14.2	13.7	8.0	10.6	7.5	9.6
Saskatoon	12.3	6.4	9.8	6.0	7.7	4.8
Saint John	8.1	8.9	8.8	7.1	6.1	6.1
Sherbrooke	13.3	11.5	11.4	9.5	8.0	7.5
Trois-Rivières	15.8	9.6	13.8	10.5	10.6	7.7
Oshawa	10.6	10.8	9.1	8.1	6.9	7.4
Kingston	10.5	12.9	8.3	11.8	6.1	7.3

Source: 1971 Census of Canada and 1976 Census of Canada, special tabulations.

TABLE 11.16
Unemployment rate by sex and zone, 1976

	Central Area		Mature Ring		Fringe	
	Male	Female	Male	Female	Male	Female
Toronto	9.1	8.0	6.3	6.9	4.5	6.8
Montreal	6.9	6.7	7.1	7.5	4.8	7.6
Vancouver	15.2	9.1	8.8	8.9	6.4	9.0
Ottawa-Hull	9.3	7.1	7.3	6.7	4.9	6.6
Winnipeg	8.7	5.4	6.0	5.7	3.6	5.0
Edmonton	5.8	4.9	5.9	5.0	3.6	4.7
Quebec	9.4	6.9	8.6	6.9	6.4	8.6
Hamilton	8.3	10.1	6.8	9.8	4.0	7.7
Calgary	9.1	7.1	5.2	6.1	3.6	5.3
Kitchener	6.6	7.5	6.2	7.4	4.2	8.2
London	10.2	8.0	7.4	9.3	4.7	7.0
Halifax	9.7	8.7	7.9	7.2	6.4	8.2
Windsor	11.0	14.5	7.9	11.9	4.8	10.8
Victoria	12.4	11.3	7.9	9.0	5.5	8.1
Sudbury	8.0	12.7	6.3	9.8	5.6	10.3
Regina	4.3	3.8	3.8	5.3	2.5	4.0
St. John's	14.7	12.0	12.8	7.5	9.1	10.6
Saskatoon	6.2	6.0	5.3	7.0	3.7	6.5
Saint John	11.8	6.0	7.4	6.7	5.7	6.8
Sherbrooke	11.7	11.8	9.1	10.3	6.5	9.1
Trois-Rivières	9.6	9.5	9.7	12.3	6.5	9.8
Oshawa	8.4	14.4	6.1	11.3	5.0	11.4
Kingston	12.8	13.2	11.7	11.7	5.7	9.9

Source: 1976 Census of Canada, special tabulation.

TABLE 11.17
Unemployment and labour force participation rates by zone for selected CMA's¹

	Unemployment rate ²			Labour force participation rate ²		
	1976	1977	1978	1976	1977	1978
Montreal CMA	6.6	9.4	10.3	60.9	60.8	64.1
Mature Suburbs	6.7	11.3	11.4	56.5	58.0	57.1
New Suburbs and Fringe	6.6	8.6	10.0	62.6	61.8	66.0
Toronto CMA	4.4	7.1	6.9	66.5	68.1	69.9
Mature Suburbs	5.2	9.9	6.8	64.4	66.7	68.1
New Suburbs and Fringe	3.9	5.9	6.6	67.1	68.4	70.9
Winnipeg CMA	3.5	5.2	6.4	63.6	64.3	65.7
Mature Suburbs	.. ³	6.2	7.3	60.8	61.1	62.3
New Suburbs and Fringe	3.0	4.7	5.9	65.9	67.4	68.5
Vancouver CMA	8.6	7.2	6.8	64.4	65.2	67.0
Mature Suburbs	10.1	8.3	7.7	63.9	61.9	63.8
New Suburbs and Fringe	8.0	6.3	6.6	64.9	66.9	68.8
Total, four CMA's	5.9	7.9	8.1	63.6	64.3	66.9
Central Area ⁴	6.9	8.4	9.3	62.5	64.2	66.2
Mature Suburbs	6.3	9.6	8.0	61.5	62.7	64.2
New Suburbs and Fringe	5.7	7.1	8.0	64.6	65.0	68.2

¹The Labour Force Survey estimates shown in this table are based on small sub-provincial samples and are subject to high levels of both sampling and non-sampling error. Accordingly they should be used with caution.

²Data are for the month of June.

³Figure not available because of the small size of the sample.

⁴Because of the small size of the sample no figures are available for individual central areas.

Source: *The Labour Force Survey, Census and Household Surveys Field*, Statistics Canada, unpublished information.

TABLE 11.18
Industrial activity

	Dominant industrial function ¹	Index of industrial specialization ²	Manufacturing activity ³			Total industrial activity		
			Total number of workers	Value added	Value added per employee	Total number of employees	Value added	Value added per employee
	1971	1971	1974	1974	1974	1974	1974	1974
			000s	millions of dollars	dollars	000s	millions of dollars	dollars
Toronto	Manufacturing II	8.05	242.2	6,906.7	28,520	340.0	7,398.7	21,760
Montreal	Manufacturing II	7.37	213.0	5,325.2	25,000	284.3	5,575.6	19,610
Vancouver	Transportation, storage and commercial	2.34	54.3	1,524.5	28,100	71.8	1,592.9	22,190
Ottawa	Public administration and defence	18.66	14.3	421.8	29,410	21.2	442.7	20,910
Winnipeg	Manufacturing II	1.58	32.9	714.2	21,740	43.0	753.3	17,510
Edmonton	Public administration and defence	2.21	17.5	534.3	30,540	24.5	560.4	22,870
Quebec	Public administration and defence	4.26	16.2	448.0	27,640	20.9	462.4	22,120
Hamilton	Manufacturing II	5.08	54.1	1,612.1	29,820	69.1	1,663.4	24,050
Calgary	Extraction	9.49	13.1	408.5	31,260	18.1	425.9	23,510
Kitchener	Manufacturing I	5.08	39.5	848.0	21,460	50.2	882.4	17,580
London	Manufacturing II	1.65	24.0	639.8	26,630	32.3	699.6	21,680
Halifax	Public administration and defence	5.04	4.8	150.2	30,990	7.0	152.1	21,870
Windsor	Manufacturing II	3.58	28.1	1,044.8	37,200	35.4	1,216.0	34,320
Victoria	Public administration and defence	3.48	3.7	92.6	24,740	4.8	95.3	19,790
Sudbury	Extraction	51.74	7.1	144.2	20,180	8.5	149.1	17,600
Regina	Public administration and defence	1.99	4.3	123.0	28,650	5.9	132.0	22,310
St. John's	Community service	2.11	2.1	47.9	23,240	2.8	52.6	18,540
Oshawa	Manufacturing I	4.00	16.7	661.6	39,640	22.7	855.1	37,604
Saskatoon	Community service	1.71	3.6	85.5	23,980	4.9	88.7	18,200
Saint John	Transportation, storage and commercial	1.50	5.6	184.6	32,900	7.1	190.6	26,920

TABLE 11.18
Industrial activity (concluded)

	Dominant industrial function ¹	Index of industrial specialization ²	Manufacturing activity ³			Total industrial activity		
			Total number of workers	Value added	Value added per employee	Total number of employees	Value added	Value added per employee
			1971	1974	1974	1974	1974	1974
			000s	millions of dollars	dollars	000s	millions of dollars	dollars
Sherbrooke	Community service	1.95	6.4 ⁴	138.9 ⁴	21,850 ⁴	8.1 ⁴	151.6 ⁴	18,670 ⁴
Trois-Rivières	Manufacturing II	2.03	9.4	221.8	23,500	11.8	226.6	19,200
Kingston	Community service	2.33	4.7	156.4	33,140	6.4	162.9	25,310

¹The dominant industrial function is the activity having the largest share of the city's total labour force. The information is classified by industry according to the 1971 *Standard Industrial Classification Manual*. Two classes are used for manufacturing. Manufacturing I includes cities in which manufacturing activity is large in scale and highly specialized while Manufacturing II includes cities in which manufacturing activity is smaller in scale, less specialized and usually oriented to local markets.

²The index of industrial specialization indicates the degree to which the functional structure of a city compares to the "normal" functional profile, that is, a diversified structure. In general a low index value indicates diversification while a high value denotes functional specialization. Values are the summation of the squared deviations from the norm for each industry and this should be kept in mind when values are compared, that is, since squaring is involved, a city with a value of 50 is not 10 times more specialized than a city with a value of 5.

³Manufacturing activity refers to production and related workers only while Total industrial activity includes administrative, office and non-manufacturing employees.

⁴Data for municipality only.

Source: *Canadian Urban Trends*, Vol. I, Ministry of State for Urban Affairs, Ottawa, 1976, *Manufacturing Industries of Canada: Sub-provincial Areas*, 1974, Catalogue 31-209.

TABLE 11.19
Climate¹

	Hours of bright sunshine	Days with no sunshine	Days with measurable precipitation	Days with measurable snowfall	Days with freezing precipitation	Days with snow cover of 1 or more inches	Mean daily minimum temperature in January	Mean daily maximum temperature in July	Days with minimum temperature below 0°C	Hours with temperature greater than 30°C ⁹	Hours with temperature below -20°C ⁹
	annual average						degrees Celsius		annual average ⁹		
Toronto	2,046	65 ³	134	45	10	62	-10.5	27.0	154	72.8	32.1
Montreal	1,959	67 ³	163	60	14	116	-14.3	26.3	153	30.5	130.2
Vancouver	1,931	76 ³	161	12	1	7	-0.4	22.2	57	1.3	0
Ottawa	1,995	69 ³	152	60	16	116	-15.6	26.4	166	48.8	190.1
Winnipeg	2,232	48	121	58	11	126	-23.2	25.9	195	56.2 ¹⁰	884.0 ¹⁰
Edmonton											
(municipal airport)	2,246	44 ^{3,4}	121	60	6	121	-19.4	23.4	192	15.1 ⁷	517.3 ⁷
Quebec	1,827	81 ⁵	164	67	16	139	-16.2	25.1	177	16.6	233.0
Hamilton (Royal Botanical Gardens)	2,035	62 ⁶	125	38	12 ⁸	..	-8.6	27.2	134	..	..
Calgary	2,207	41	113	61	3	99	-16.7	23.5	201	17.0	415.0
Kitchener	1,950 ²	..	113	31	..	..	-9.9	26.9	154	..	..
London	1,929	69	165	66	12	..	-9.9	26.4	152	35.0	31.7
Halifax (Shearwater)	1,945	77	142	36	17 ⁴	60	-7.8	21.9	142	2.0	7.8
Windsor	..	..	137	42	8	43	-7.8	27.8	135	80.5	7.7
Victoria											
(Gonzales Heights)	2,183	51	142	9	<1	5	+1.9	20.8	18	1.3	0
Sudbury	..	..	155	73	19	139	-18.4	24.8	183	15.9	396.0
Regina	2,278	45	114	58	12	130	-22.6	26.2	207	91.4	744.0
St. John's	1,458	108	210	85	36	120	-7.0	20.1	177	0	2.1
Oshawa (Pickering)	..	..	122 ⁷	32	..	..	-10.9	25.7	..	..	..
Saskatoon	2,402	44	103	54	9	130	-23.9	25.9	206	64.8	845.9
Saint John	1,819	88	164	58	11	82	-12.6	22.3	175	1.9	92.0
Sherbrooke	1,901	72	170	63	9	..	-17.8	24.6	161	12.9	292.7
Trois-Rivières	..	..	152	53	7	..	-17.4	26.2	177	..	..
Kingston	2,113	51	130	39	..	..	-11.6	25.0	148	..	..

¹Data based on records for 20 or 30 years, except where indicated.

²Figure is for Guelph, Ont.

³Figure based on records for past 7 years.

⁴Figure is for the international airport.

⁵Figure based on records for past 16 years.

⁶Figure based on records for past 9 years.

⁷Figure based on records for past 15 years.

⁸Figure is for the airport.

⁹Data based on records for 10 years, except where indicated.

¹⁰Figure based on records for past 20 years.

Source: Atmospheric Environment Service, Environment Canada, Downsview, Ont.

TABLE 11.20
Air pollution indices

Urban area ^{5,6}	Actual suspended particulates level as a ratio of national maximum acceptable standards ¹			Sulphur dioxide level as a ratio of national maximum acceptable standards ²		
	1974	1975	1976	1974	1975	1976
Toronto	1.16	1.01	0.90	0.60	0.75	0.75
Montreal	1.83	1.44	1.11	2.60	1.80	1.35
Vancouver	..	..	0.97	..	0.55	0.50
Ottawa	1.30	1.10	0.86	1.20	1.00	0.90
Winnipeg	..	1.07	1.14	..	<0.50	<1.00
Edmonton	1.01	1.67	1.96	<0.50	<0.50	<0.50
Quebec	1.49	1.47	1.21	..	..	1.20
Hamilton	1.50	1.40	1.44	1.10	1.00	1.05
Calgary	1.74	1.78	1.59	<0.50	<0.50	<0.50
London	1.31	1.04	0.91	<0.50	<0.50	<0.65
Halifax	0.67	0.74	0.49	..	0.90	0.65
Windsor	1.74	1.14	1.09	1.65	1.45	1.35
Victoria	0.63	0.63	0.66	<0.50	<0.50	.. ³
Sudbury	0.79	0.71	0.66	..	..	0.95
Regina	0.94	0.91	0.81	<0.50	<0.50	..
St. John's	0.73	0.70	0.71	..	..	..
Saskatoon	1.01	1.10	1.30	<0.50	<0.50	..
Saint John	0.86	0.79	0.79	1.25	0.70	..
Sherbrooke	..	..	0.77	..	..	..⁴
Trois-Rivières	..	..	1.03	..	..	1.10

¹Particulates, annual geometric mean in micrograms per cubic metre divided by 70 micrograms per cubic metre. Figures over one indicate acceptable maximum is exceeded.

²Sulphur dioxide, annual geometric mean in parts per hundred million divided by 2.0 parts per hundred million. Figures over one indicate acceptable maximum is exceeded.

³In many cases where data is not available there was insufficient data for calculation of a valid average figure.

⁴No station measuring sulphur dioxide.

⁵Data are not available for Oshawa, Kitchener and Kingston.

⁶Readings were taken in the Central Area of cities.

Source: *The Clean Air Act, Annual Report*, Environmental Protection Service, Environment Canada, 1976-77.

TABLE 11.21
Waste water and water supply treatment

Urban area ¹	Water supply treatment	Waste water treatment
	% of population served	
Toronto	98.5	95.5
Montreal	98.6	4.9
Vancouver	.. ²	84.3
Ottawa	92.1	71.9
Winnipeg	100.0	100.0
Edmonton	100.0	100.0
Quebec	95.2	1.2
Hamilton	96.8	93.0
Calgary	100.0	100.0
Kitchener	98.0	98.0
London	100.0	100.0
Halifax	96.1	—
Windsor	98.2	87.5
Victoria	92.0	88.3
Sudbury	77.3	77.8
Regina	100.0	100.0
St. John's	87.9	1.0
Saskatoon	99.9	99.9
Saint John	91.7	29.6
Sherbrooke	91.8	5.8
Trois-Rivières	88.9	—
Kingston	85.2	78.9

¹Does not include the rural fringe of the Census Metropolitan Areas and Census Agglomerations. In a number of cases data were not available for certain municipalities within the urban core and urban fringe, therefore necessary adjustments to the population totals were made.

²For the Vancouver CMA, data on water supply treatment was not available for a large proportion of the area, therefore no figure is presented.

Source: *National Inventory of Municipal Waterworks and Waste Water Systems in Canada, 1977*, Department of Supply and Services, Ottawa, 1978.

TABLE 11.22
High stressor industrial activity¹

Urban areas ²	Number of establishments in the high stressor group	Percentage of all establishments in the high stressor group	Number of workers in the high stressor group	Percentage of all industrial workers in the high stressor type	Fossil fuel purchased by high stressor industries	Percentage of fossil fuels purchased by high stressor industries
			000s			10 ¹² Btus
Toronto	47	0.8	3.6	1.6	12.2	10.4
Montreal	52	1.0	7.2	3.5	20.3	31.9
Vancouver	38	2.0	2.5	4.6	8.2	45.1
Ottawa	17	4.7	4.3	31.5	10.9	86.5
Winnipeg	11	1.2	0.6	2.0	3.3	30.8
Edmonton	23	3.7	2.3	14.1	24.9	68.8
Quebec	9	1.8	1.7	9.5	7.2	76.6
Hamilton	15	2.3	21.3	40.2	29.2	67.8
Calgary	11	2.1	1.0	8.6	3.7	43.5
Kitchener	4	0.8	0.1	0.4	0.1	1.2
London	7	1.8	0.1	0.5	0.1	1.8
Halifax	7	4.9	0.3	1.1	0.1	5.7
Windsor	4	1.0	0.5	1.8	5.4	39.1
Victoria	6	2.9	0.1	2.5	0.1	20.0
Sudbury	8	11.3	5.0	88.4	25.6	98.4
Regina	7	5.1	0.3	8.8	1.5	48.4
St. John's	3	4.2	0.1	5.4	0.1	12.3
Saskatoon	5	3.7	0.2	4.9	0.3	20.0
Saint John	6	7.1	1.4	25.1	6.2	73.0

¹In *Human Activity and the Environment*, industries were grouped into High, Medium and Low Stressor categories depending on the impact these activities have, or could have, on the environment. The high stressor group includes industries that deal with large scale bulk refining and concentration of raw materials. These industries typically require high energy inputs and may generate a significant volume of pollution.

²Data were not available for Kingston, Sherbrooke, Oshawa or Trois-Rivières.

Source: *Human Activity and the Environment*, Catalogue 11-509, 1974.

TABLE 11.23
General urban land use by type and zone

City, area surveyed and zone	Residential	Commercial and office	Institutional ¹	Industrial, warehousing, transportation and utilities	Parks, golf courses, cemeteries	Vacant, non-urban or land not suitable for development ²	Total	Zone area as a % of total surveyed area
	<i>per cent of total</i>							
Toronto (city) - 1976								
Central Area	28.9	14.6	9.1	28.4	15.3	3.7	100.0	19.9
Mature Suburbs	53.9	5.5	7.2	14.3	16.6	2.6	100.0	79.1
New Suburbs and Fringe	..	..	..	..	..	..	..	1.0
Montreal (Island of Montreal) - 1978								
Central Area	22.4	23.5	16.2	15.7	20.6	1.6	100.0	4.2
Mature Suburbs	48.2	8.7	6.8	25.3	9.6	1.4	100.0	12.8
New Suburbs and Fringe	35.2	8.1	5.6	23.9	8.3	18.9	100.0	83.0
Vancouver (city) - 1976								
Central Area	16.5	17.9	4.0	33.8	25.0	2.8	100.0	15.0
Mature Suburbs	69.3	7.0	6.7	4.9	10.8	1.3	100.0	68.8
New Suburbs and Fringe	53.5	3.0	5.7	20.6	12.5	4.7	100.0	16.2
Ottawa (city, Vanier and Rockcliffe) - 1978								
Central Area	32.0	30.6	22.6	3.9	10.2	0.7	100.0	5.4
Mature Suburbs	50.9	8.2	12.6	8.4	16.5	3.4	100.0	18.6
New Suburbs and Fringe	34.4	5.6	18.9	16.6	12.0	12.5	100.0	76.0

TABLE 11.23
General urban land use by type and zone (continued)

City, area surveyed and zone	Residential	Commercial and office	Institutional ¹	Industrial, warehousing, transportation and utilities	Parks, golf courses, cemeteries	Vacant, non-urban or land not suitable for development ²	Total	Zone area as a % of total surveyed area
<i>per cent of total</i>								
Winnipeg (city) - 1976								
Central Area	29.6	30.1	6.8	30.2	2.3	1.0	100.0	1.2
Mature Suburbs	58.9	7.3	6.8	17.1	4.6	5.3	100.0	9.0
New Suburbs and Fringe	17.4	1.5	3.7	10.8	4.5	62.1	100.0	89.8
Edmonton (city) - 1973								
Central Area	27.8	35.7	10.8	14.2	8.6	2.9	100.0	1.8
Mature Suburbs	47.1	7.5	13.2	15.8	14.5	1.9	100.0	12.8
New Suburbs and Fringe	..	..	..	..	..	..	..	85.4
Quebec (city) - 1973								
Central Area	17.6	31.4	11.6	28.2	12.5	3.0	100.0	6.6
Mature Suburbs	31.4	14.5	18.4	23.3	5.0	7.4	100.0	12.9
New Suburbs and Fringe	..	..	..	..	..	..	100.0	80.5
Hamilton (city) - 1978								
Central Area	31.6	18.8	7.5	23.8	12.9	5.4	100.0	6.9
Mature Suburbs	32.1	7.8	6.6	39.8	8.9	4.8	100.0	31.8
New Suburbs and Fringe	39.6	5.3	6.6	6.1	11.5	30.9	100.0	61.3
Calgary (CMA) - 1978								
Central Area	22.1	45.1	3.4	23.6	4.7	1.1	100.0	1.1
Mature Suburbs	38.2	8.3	8.9	30.7	9.4	4.5	100.0	13.6
New Suburbs and Fringe	..	..	..	..	..	..	..	85.3
Kitchener, Waterloo (cities) - 1977								
Central Area	57.1	17.5	6.5	8.2	9.7	1.0	100.0	1.8
Mature Suburbs	49.6	9.6	8.3	24.1	7.6	0.8	100.0	3.4
New Suburbs and Fringe	18.7	1.4	3.6	7.0	8.8	60.5	100.0	94.8
London (city) - 1977								
Central Area	44.1	24.6	5.6	18.7	5.5	1.5	100.0	3.5
Mature Suburbs	55.9	5.4	10.3	16.1	7.4	4.9	100.0	12.4
New Suburbs and Fringe	36.6	3.8	5.8	14.5	8.0	31.3	100.0	84.1
Halifax (city) - 1977								
Central Area	21.4	24.4	19.1	9.9	22.9	2.3	100.0	5.1
Mature Suburbs	50.1	8.2	10.5	19.5	10.0	1.7	100.0	19.2
New Suburbs and Fringe	32.0	3.5	3.5	3.7	5.4	51.9	100.0	75.6
Windsor (city) - 1976								
Central Area	42.7	29.7	7.6	14.2	4.2	1.6	100.0	3.5
Mature Suburbs	38.8	10.2	5.5	31.6	6.6	7.3	100.0	19.0
New Suburbs and Fringe	36.4	5.5	4.7	8.3	5.9	39.2	100.0	77.5
Victoria (CMA) - 1973								
Central Area	19.4	44.6	6.5	18.7	7.2	3.6	100.0	0.1
Mature Suburbs	65.8	5.0	6.7	5.7	11.1	5.7	100.0	1.9
New Suburbs and Fringe	..	..	..	..	..	..	..	98.0
Sudbury (city) - 1971								
Central Area	33.3	17.6	6.6	11.5	2.0	29.0	100.0	1.3
Mature Suburbs	37.9	4.2	7.6	9.7	4.4	36.2	100.0	11.8
New Suburbs and Fringe	12.4	1.3	4.1	8.7	2.5	71.0	100.0	86.9
Regina (city) - 1976								
Central Area	33.9	31.9	10.3	15.7	5.4	2.8	100.0	2.7
Mature Suburbs	35.9	13.3	8.2	31.2	5.4	6.0	100.0	12.1

TABLE 11.23
General urban land use by type and zone (concluded)

City, area surveyed and zone	Residential	Commercial and offices	Institutional ¹	Industrial, warehousing, transportation and utilities	Parks, golf courses, cemeteries	Vacant, non-urban or land not suitable for development ²	Total	Zone area as a % of total surveyed area
<i>per cent of total</i>								
Regina (city) - 1976 (concluded)								
New Suburbs and Fringe	35.6	2.8	14.0	17.1	11.0	19.5	100.0	85.2
St. John's (city) - 1976								
Central Area	31.1	28.6	10.1	23.9	4.0	2.3	100.0	4.8
Mature Suburbs	33.3	4.0	10.8	2.4	33.7	15.8	100.0	11.5
New Suburbs and Fringe	40.3	6.6	10.1	6.1	9.1	27.8	100.0	83.7
Oshawa (city) - 1977								
Central Area	40.8	17.4	10.3	18.5	10.8	2.2	100.0	1.7
Mature Suburbs	36.6	4.9	4.9	19.5	12.2	21.9	100.0	9.6
New Suburbs and Fringe	12.0	0.8	1.4	5.1	4.4	76.3	100.0	88.7
Saskatoon (city) - 1976								
Central Area	22.1	34.0	10.7	17.9	14.1	1.2	100.0	1.8
Mature Suburbs	42.3	4.0	11.1	18.8	12.2	11.6	100.0	25.3
New Suburbs and Fringe	29.3	2.6	17.7	18.7	8.9	22.8	100.0	72.9
Saint John (city) - 1972								
Central Area	27.1	22.9	30.0	13.5	5.6	0.9	100.0	0.5
Mature Suburbs	43.4	4.7	6.9	24.9	11.0	9.1	100.0	4.5
New Suburbs and Fringe	..	..	..	..	..	..	..	95.0
Sherbrooke (city) - 1973								
Central Area	27.0	22.3	18.4	21.9	7.2	3.2	100.0	2.8
Mature Suburbs	42.4	6.4	10.7	14.3	14.6	11.6	100.0	11.6
New Suburbs and Fringe	27.2	3.2	4.5	7.9	7.4	49.8	100.0	85.6
Trois-Rivières (city and Cap-de-la-Madeleine) - 1973								
Central Area	27.4	26.9	17.3	22.2	5.2	1.0	100.0	1.6
Mature Suburbs	30.4	4.0	6.8	39.5	11.6	7.7	100.0	11.8
New Suburbs and Fringe	21.6	1.5	3.1	13.4	2.7	57.7	100.0	86.6
Kingston (city) - 1977								
Central Area	40.2	16.2	13.9	6.9	17.2	5.6	100.0	5.1
Mature Suburbs	58.5	2.8	16.5	5.5	10.9	5.8	100.0	17.9
New Suburbs and Fringe	24.3	4.4	9.1	23.0	13.3	25.9	100.0	77.0

¹Includes schools, churches, universities and colleges and government land uses other than parks, business offices and residences.

²Non-urban includes uses that are rural in character such as farming.

Source: Determined from urban land use maps, air photos from National Airphoto Library, city directories, unpublished information from cities (for a complete description refer to text).

TABLE 11.24
Conversion of rural land to urban uses

	Rural land converted to urban uses 1966-71			High capability ¹ agricultural land converted to urban land uses, 1966-77	
	Total acres	Acres/year	Acres/1,000 population	Total acres	As a % of rural land converted to urban uses
	<i>000s</i>			<i>000s</i>	
Toronto	29.0	5.8	88	28.3	97.3
Montreal	19.1	3.8	115	14.1	73.9
Vancouver	9.1	1.8	70	0.6	7.4
Ottawa	11.4	2.3	175	6.4	56.0
Winnipeg	10.8	2.2	369	10.8	100.0
Edmonton	16.2	3.2	236	13.2	81.6
Quebec	6.8	1.4	168	2.2	33.0
Hamilton	5.1	1.0	131	4.3	84.5
Calgary	15.9	3.2	218	7.1	45.0
Kitchener	6.2	1.3	185	4.1	65.5
London	3.8	0.8	120	3.8	99.8
Halifax	3.5	0.7	380	0.9	24.9
Windsor	3.0	0.6	208	2.8	91.1
Victoria	1.2	0.2	76	- ²	- ²
Sudbury	3.0	0.6	217	0.4	13.9
Regina	0.9	0.2	113	0.9	97.5
St. John's	1.7	0.3	147	- ²	- ²
Oshawa	1.5	0.3	110	1.4	93.8
Saskatoon	1.2	0.2	111	0.5	42.3
Saint John	2.7	0.5	1,770	0.0	1.2
Sherbrooke	0.9	0.2	184	0.2	16.9
Trois-Rivières	0.3	0.1	152	0.0	4.4
Kingston	2.4	0.5	1,152	1.4	60.4
Urban Canada					
Totals	212.7	42.5	172	134.6	63.3

¹High capability denotes soil classes 1, 2 and 3 on the agricultural land classification system. These soils range from those with no limitations for crop use (class 1) to those that have moderately severe limitations for crops (class 3).

²Agriculture capability maps were not available at the time of compilation of data.

Source: Gierman, D.M., *Rural to Urban Land Conversion*, Occasional Paper No. 16, Lands Directorate, Environment Canada, Ottawa.

TABLE 11.25
Housing type by zone

	1961					1976				
	Single detached	Apartments	Other	Total	Total dwellings	Single detached	Apartments	Other	Total	Total dwellings
	<i>per cent</i>					<i>per cent</i>				
Toronto										
Central Area	12.1	58.4	33.1	100.0	32,395	4.7	82.1	13.1	100.0	47,595
Mature Suburbs	41.8	32.0	26.2	100.0	228,498	29.2	51.1	19.8	100.0	276,990
New Suburbs and Fringe	76.5	17.1	6.4	100.0	221,597	47.6	37.4	15.0	100.0	585,040
Total CMA	55.6	26.7	17.6	100.0	482,490	39.8	43.9	16.4	100.0	909,625
Montreal										
Central Area	1.1	86.7	12.2	100.0	50,732	0.4	97.7	1.8	100.0	48,980
Mature Suburbs	4.1	84.2	11.7	100.0	210,108	2.3	92.7	4.9	100.0	220,940
New Suburbs and Fringe	33.9	56.4	9.8	100.0	288,673	33.3	59.2	7.4	100.0	654,760
Total CMA	19.5	69.8	10.7	100.0	549,513	24.2	69.3	6.3	100.0	924,680
Vancouver										
Central Area	22.7	71.4	5.9	100.0	20,087	5.0	93.4	1.5	100.0	36,080
Mature Suburbs	71.3	24.5	4.2	100.0	106,573	50.4	47.0	2.7	100.0	131,020
New Suburbs and Fringe	89.4	7.0	3.6	100.0	101,936	68.2	23.8	8.0	100.0	240,555
Total CMA	75.1	20.8	4.1	100.0	228,596	56.9	37.4	5.8	100.0	407,655
Ottawa										
Central Area	16.0	61.5	22.4	100.0	17,383	7.7	83.7	8.9	100.0	21,430
Mature Suburbs	41.4	42.9	15.6	100.0	39,400	33.1	55.6	11.1	100.0	43,850
New Suburbs and Fringe	64.6	24.8	10.6	100.0	50,787	48.7	32.3	18.9	100.0	159,855
Total CMA	48.3	37.4	14.4	100.0	107,570	41.8	41.7	16.5	100.0	225,135

TABLE 11.25
Housing type by zone (continued)

	1961					1976				
	Single detached	Apartments	Other	Total	Total dwellings	Single detached	Apartments	Other	Total	Total dwellings
	<i>per cent</i>					<i>per cent</i>				
Winnipeg										
Central Area	18.0	74.1	7.9	100.0	12,117	10.9	87.1	2.2	100.0	13,480
Mature Suburbs	67.8	26.7	5.6	100.0	69,501	56.4	40.1	3.5	100.0	76,235
New Suburbs and Fringe	87.7	8.9	3.5	100.0	46,766	65.9	24.5	9.5	100.0	107,600
Total CMA	70.3	24.7	5.0	100.0	128,384	58.5	34.8	6.7	100.0	197,315
Edmonton										
Central Area	25.7	68.2	6.1	100.0	6,519	9.5	89.2	1.0	100.0	9,640
Mature Suburbs	64.9	30.0	5.1	100.0	34,506	40.0	58.2	1.9	100.0	46,515
New Suburbs and Fringe	78.6	14.4	7.0	100.0	47,978	65.4	20.8	13.7	100.0	123,525
Total CMA	69.4	24.4	6.2	100.0	89,003	55.8	34.2	10.0	100.0	179,680
Quebec										
Central Area	4.7	81.6	13.6	100.0	11,561	1.3	91.0	7.9	100.0	10,225
Mature Suburbs	14.7	68.6	16.7	100.0	27,198	11.1	85.1	3.8	100.0	30,210
New Suburbs and Fringe	46.0	42.8	11.2	100.0	40,381	45.6	47.6	6.8	100.0	124,195
Total CMA	29.2	57.2	13.5	100.0	79,140	36.5	57.1	6.3	100.0	164,630
Hamilton										
Central Area	28.6	54.5	16.9	100.0	13,065	14.2	77.0	8.8	100.0	18,850
Mature Suburbs	70.5	24.0	5.6	100.0	35,743	59.6	35.2	5.2	100.0	37,365
New Suburbs and Fringe	85.0	11.1	3.9	100.0	56,432	65.7	24.1	10.1	100.0	116,365
Total CMA	73.0	20.9	6.1	100.0	105,240	58.8	32.3	8.9	100.0	172,580
Calgary										
Central Area	23.7	70.5	5.8	100.0	6,502	7.8	90.9	1.3	100.0	9,170
Mature Suburbs	60.8	32.5	6.7	100.0	37,441	45.8	49.9	4.1	100.0	43,190
New Suburbs and Fringe	76.9	15.6	7.5	100.0	34,453	68.4	15.6	16.0	100.0	102,805
Total CMA	64.8	28.2	7.0	100.0	78,396	58.5	29.6	11.8	100.0	155,165
Kitchener										
Central Area	48.6	46.3	5.1	100.0	4,944	38.8	58.3	2.6	100.0	5,340
Mature Suburbs	66.0	29.1	4.9	100.0	7,081	49.4	47.1	3.2	100.0	8,200
New Suburbs and Fringe	75.0	18.9	6.1	100.0	30,149	55.2	31.5	13.2	100.0	74,400
Total CMA	70.4	23.8	5.8	100.0	42,174	53.7	34.5	11.6	100.0	87,940
Regina										
Central Area	35.9	57.8	6.4	100.0	4,664	21.6	76.3	1.9	100.0	5,610
Mature Suburbs	80.8	15.0	4.2	100.0	7,434	72.1	26.4	1.6	100.0	7,950
New Suburbs and Fringe	76.9	16.4	6.6	100.0	18,025	72.7	20.2	7.0	100.0	36,285
Total CMA	71.5	22.5	6.0	100.0	30,123	66.9	27.5	5.6	100.0	49,845
St. John's										
Central Area	11.3	22.2	66.6	100.0	3,546	7.0	38.9	53.9	100.0	2,930
Mature Suburbs	41.2	17.9	40.9	100.0	2,852	43.8	22.7	33.5	100.0	3,280
New Suburbs and Fringe	69.1	19.0	11.9	100.0	11,519	55.0	30.5	14.6	100.0	30,580
Total CMA	53.2	19.5	27.3	100.0	17,917	50.2	30.5	19.4	100.0	36,790
Oshawa										
Central Area	59.0	28.3	12.7	100.0	2,955	46.1	45.1	8.8	100.0	2,970
Mature Suburbs	83.2	12.5	4.3	100.0	6,792	61.0	31.1	7.8	100.0	9,160
New Suburbs and Fringe	81.0	14.0	5.0	100.0	11,648	61.4	23.9	14.9	100.0	29,320
Total CMA	78.6	15.5	5.9	100.0	21,395	60.2	27.0	12.9	100.0	41,450
Saskatoon										
Central Area	31.1	63.0	5.9	100.0	1,794	20.5	78.3	1.6	100.0	2,145
Mature Suburbs	74.8	20.7	4.5	100.0	15,029	61.7	35.3	3.0	100.0	17,070
New Suburbs and Fringe	81.4	9.8	8.8	100.0	9,087	68.0	23.0	9.1	100.0	25,575
Total CMA	74.1	19.8	6.1	100.0	25,910	63.3	30.3	6.4	100.0	44,790
Saint John										
Central Area	5.9	86.6	7.5	100.0	4,041	3.0	92.7	4.8	100.0	3,475
Mature Suburbs	18.2	73.4	8.4	100.0	11,005	21.5	72.8	5.5	100.0	9,355
New Suburbs and Fringe	72.7	19.5	7.9	100.0	9,097	59.7	26.8	13.4	100.0	21,260
Total CMA	36.7	55.3	8.1	100.0	24,143	43.4	46.1	10.3	100.0	34,090
London										
Central Area	29.6	60.1	10.2	100.0	7,460	21.5	72.9	5.2	100.0	7,785
Mature Suburbs	61.0	34.5	4.5	100.0	19,557	54.2	41.1	4.9	100.0	20,720
New Suburbs and Fringe	83.8	12.2	4.0	100.0	23,547	61.0	26.5	12.7	100.0	63,275
Total CMA	67.0	27.9	5.1	100.0	50,564	56.1	33.7	10.3	100.0	91,780

TABLE 11.25
Housing type by zone (concluded)

	1961				Total dwellings	1976				Total dwellings
	Single detached	Apartments	Other	Total		Single detached	Apartments	Other	Total	
	<i>per cent</i>					<i>per cent</i>				
Halifax										
Central Area	13.3	58.8	27.9	100.0	4,091	5.6	77.8	16.7	100.0	4,215
Mature Suburbs	46.1	44.5	9.4	100.0	16,710	34.1	60.1	5.9	100.0	19,395
New Suburbs and Fringe	70.5	23.4	6.1	100.0	21,565	55.8	29.0	15.1	100.0	58,295
Total CMA	55.4	35.1	9.5	100.0	42,366	48.1	38.9	13.0	100.0	81,905
Windsor										
Central Area	42.4	47.4	10.2	100.0	6,779	27.2	65.9	7.1	100.0	8,375
Mature Suburbs	65.1	26.5	8.4	100.0	19,708	55.3	37.8	7.0	100.0	22,235
New Suburbs and Fringe	90.9	5.4	3.7	100.0	26,828	78.7	12.0	9.1	100.0	49,650
Total CMA	75.2	18.5	6.3	100.0	53,315	66.8	24.8	8.3	100.0	80,260
Victoria										
Central Area	31.2	62.6	6.2	100.0	1,346	11.9	82.9	3.9	100.0	1,810
Mature Suburbs	68.2	27.1	4.8	100.0	27,786	44.7	50.4	5.0	100.0	40,580
New Suburbs and Fringe	89.3	5.0	5.7	100.0	18,353	74.2	15.6	10.2	100.0	38,595
Total CMA	75.3	19.6	5.2	100.0	47,485	58.0	34.5	7.5	100.0	80,985
Sudbury										
Central Area	30.1	56.2	13.7	100.0	1,348	25.3	71.3	3.8	100.0	1,305
Mature Suburbs	39.3	49.3	11.4	100.0	11,197	36.0	56.2	8.2	100.0	11,730
New Suburbs and Fringe	75.7	15.2	9.2	100.0	13,710	65.9	23.6	10.4	100.0	32,660
Total CMA	57.8	31.9	10.3	100.0	26,255	57.1	33.3	9.7	100.0	45,695
Sherbrooke										
Central Area	3.9	85.8	10.3	100.0	2,467	3.6	91.3	5.1	100.0	2,240
Mature Suburbs	14.5	72.5	13.0	100.0	6,284	14.7	78.7	6.1	100.0	6,515
New Suburbs and Fringe	41.7	46.8	11.6	100.0	8,043	44.1	51.2	4.8	100.0	24,615
Total CMA	26.0	62.1	11.9	100.0	16,794	35.7	59.2	5.1	100.0	33,370
Trois-Rivières										
Central Area	7.4	74.5	18.2	100.0	3,376	5.0	88.3	6.9	100.0	3,470
Mature Suburbs	16.6	68.5	14.9	100.0	9,035	15.1	81.2	4.1	100.0	9,355
New Suburbs and Fringe	47.9	35.7	16.4	100.0	6,428	52.3	39.8	8.0	100.0	17,960
Total CMA	25.6	58.4	16.0	100.0	18,839	35.7	57.8	6.7	100.0	30,785
Kingston										
Central Area	22.6	49.2	28.2	100.0	2,661	10.8	72.9	16.5	100.0	2,975
Mature Suburbs	53.5	28.9	17.6	100.0	6,542	40.6	49.2	10.4	100.0	7,335
New Suburbs and Fringe	62.0	24.9	13.2	100.0	6,661	59.7	29.1	11.4	100.0	19,260
Total CMA	51.9	30.6	17.5	100.0	15,864	50.1	38.5	11.7	100.0	29,570

Source: 1976 Census of Canada, special tabulation.

Map 11.26

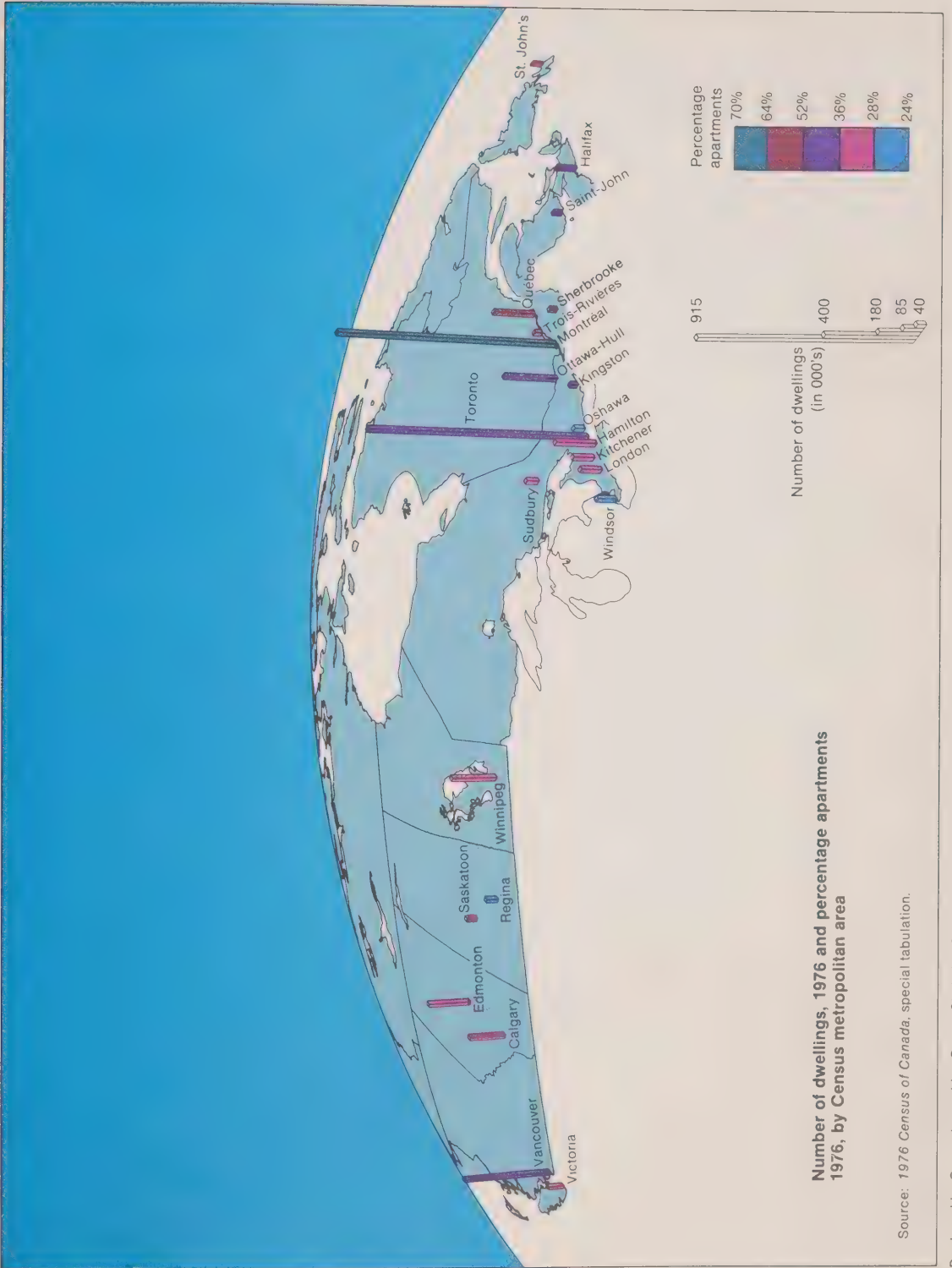


TABLE 11.27
Housing tenure by zone

	1961			1976		
	Owned	Rented	Total	Owned	Rented	Total
	<i>per cent</i>					
Toronto						
Central Area	31.4	68.6	100.0	17.6	82.4	100.0
Mature Suburbs	63.2	36.8	100.0	49.7	50.3	100.0
New Suburbs and Fringe	77.1	22.9	100.0	61.9	38.1	100.0
Total CMA	67.4	32.6	100.0	55.9	44.2	100.0
Montreal						
Central Area	7.2	92.8	100.0	5.2	94.9	100.0
Mature Suburbs	19.1	80.9	100.0	17.6	82.3	100.0
New Suburbs and Fringe	46.9	53.1	100.0	47.6	52.4	100.0
Total CMA	32.6	67.4	100.0	38.2	61.8	100.0
Vancouver						
Central Area	20.5	79.5	100.0	11.0	89.0	100.0
Mature Suburbs	68.5	31.5	100.0	51.9	48.1	100.0
New Suburbs and Fringe	80.7	19.3	100.0	70.7	29.2	100.0
Total CMA	69.7	30.3	100.0	59.4	40.6	100.0
Ottawa						
Central Area	24.6	75.4	100.0	12.7	87.5	100.0
Mature Suburbs	49.2	50.8	100.0	41.8	58.2	100.0
New Suburbs and Fringe	62.8	37.2	100.0	59.4	40.6	100.0
Total CMA	51.7	48.3	100.0	51.5	48.5	100.0
Winnipeg						
Central Area	17.9	82.1	100.0	10.9	89.1	100.0
Mature Suburbs	64.7	35.3	100.0	54.9	45.2	100.0
New Suburbs and Fringe	82.5	17.5	100.0	67.8	32.1	100.0
Total CMA	66.8	33.2	100.0	58.9	41.1	100.0
Edmonton						
Central Area	22.7	77.3	100.0	10.0	90.4	100.0
Mature Suburbs	59.3	40.7	100.0	35.6	64.5	100.0
New Suburbs and Fringe	75.0	25.0	100.0	66.6	33.4	100.0
Total CMA	65.1	34.9	100.0	55.6	44.5	100.0
Quebec						
Central Area	15.4	84.6	100.0	10.8	89.2	100.0
Mature Suburbs	31.2	68.8	100.0	27.6	72.5	100.0
New Suburbs and Fringe	57.5	42.5	100.0	53.9	46.0	100.0
Total CMA	42.3	57.7	100.0	46.1	53.8	100.0
Hamilton						
Central Area	42.3	57.7	100.0	23.3	76.8	100.0
Mature Suburbs	72.5	27.5	100.0	65.9	34.0	100.0
New Suburbs and Fringe	81.4	18.6	100.0	69.6	30.3	100.0
Total CMA	73.5	26.5	100.0	63.7	36.2	100.0
Calgary						
Central Area	22.5	77.5	100.0	4.5	95.3	100.0
Mature Suburbs	59.2	40.8	100.0	41.4	58.6	100.0
New Suburbs and Fringe	75.5	24.5	100.0	70.4	29.6	100.0
Total CMA	63.3	36.7	100.0	58.4	41.5	100.0
Kitchener						
Central Area	57.3	42.7	100.0	43.9	56.4	100.0
Mature Suburbs	68.8	31.2	100.0	54.7	45.4	100.0
New Suburbs and Fringe	75.6	24.4	100.0	62.1	37.8	100.0
Total CMA	72.3	27.7	100.0	60.3	39.6	100.0
London						
Central Area	35.5	64.5	100.0	21.5	78.4	100.0
Mature Suburbs	63.1	36.9	100.0	55.5	44.5	100.0
New Suburbs and Fringe	79.6	20.4	100.0	62.9	37.0	100.0
Total CMA	66.7	33.3	100.0	57.7	42.2	100.0
Halifax						
Central Area	19.8	80.2	100.0	10.1	90.0	100.0
Mature Suburbs	51.9	48.1	100.0	41.4	58.6	100.0
New Suburbs and Fringe	63.7	36.3	100.0	63.8	36.1	100.0
Total CMA	54.8	45.2	100.0	55.7	44.2	100.0

TABLE 11.27
Housing tenure by zone (concluded)

	1961			1976		
	Owned	Rented	Total	Owned	Rented	Total
	<i>per cent</i>					
Windsor						
Central Area	43.9	56.1	100.0	30.8	69.0	100.0
Mature Suburbs	66.4	33.6	100.0	59.1	40.8	100.0
New Suburbs and Fringe	84.1	15.9	100.0	80.9	19.2	100.0
Total CMA	72.4	27.6	100.0	69.6	30.4	100.0
Victoria						
Central Area	29.9	70.1	100.0	13.5	85.1	100.0
Mature Suburbs	67.2	32.8	100.0	48.8	51.4	100.0
New Suburbs and Fringe	80.7	19.3	100.0	75.7	24.1	100.0
Total CMA	71.4	28.6	100.0	60.8	39.1	100.0
Sudbury						
Central Area	42.0	58.0	100.0	31.4	68.2	100.0
Mature Suburbs	48.2	51.8	100.0	45.4	54.7	100.0
New Suburbs and Fringe	64.5	35.5	100.0	68.6	31.4	100.0
Total CMA	56.4	43.6	100.0	61.6	38.5	100.0
Regina						
Central Area	32.6	67.4	100.0	19.6	79.9	100.0
Mature Suburbs	71.6	28.4	100.0	64.0	36.0	100.0
New Suburbs and Fringe	73.3	26.7	100.0	72.6	27.4	100.0
Total CMA	66.6	33.4	100.0	65.2	34.7	100.0
St. John's						
Central Area	52.5	47.5	100.0	52.2	47.4	100.0
Mature Suburbs	71.0	29.0	100.0	71.5	28.0	100.0
New Suburbs and Fringe	74.4	25.6	100.0	69.8	30.3	100.0
Total CMA	69.5	30.5	100.0	68.5	31.4	100.0
Oshawa						
Central Area	59.1	40.9	100.0	45.6	54.0	100.0
Mature Suburbs	78.8	21.2	100.0	64.6	35.2	100.0
New Suburbs and Fringe	80.6	19.4	100.0	70.8	29.1	100.0
Total CMA	77.1	22.9	100.0	67.6	32.3	100.0
Saskatoon						
Central Area	30.2	69.8	100.0	19.6	80.7	100.0
Mature Suburbs	70.9	29.1	100.0	59.3	40.7	100.0
New Suburbs and Fringe	78.9	21.1	100.0	70.2	29.8	100.0
Total CMA	70.9	29.1	100.0	63.6	36.4	100.0
Saint John						
Central Area	17.2	82.8	100.0	14.2	85.6	100.0
Mature Suburbs	32.6	67.4	100.0	36.5	63.4	100.0
New Suburbs and Fringe	70.3	29.7	100.0	70.1	30.0	100.0
Total CMA	44.2	55.8	100.0	55.2	44.8	100.0
Sherbrooke						
Central Area	9.2	90.8	100.0	9.8	90.6	100.0
Mature Suburbs	29.1	70.9	100.0	28.6	71.6	100.0
New Suburbs and Fringe	49.9	50.1	100.0	51.8	48.1	100.0
Total CMA	36.2	63.8	100.0	44.6	55.3	100.0
Trois-Rivières						
Central Area	20.3	79.7	100.0	15.7	84.1	100.0
Mature Suburbs	34.5	65.5	100.0	34.5	65.3	100.0
New Suburbs and Fringe	55.1	44.9	100.0	61.2	38.7	100.0
Total CMA	39.0	61.0	100.0	48.0	51.9	100.0
Kingston						
Central Area	24.6	75.4	100.0	20.5	79.2	100.0
Mature Suburbs	53.6	46.4	100.0	45.2	54.7	100.0
New Suburbs and Fringe	55.5	44.5	100.0	59.6	40.5	100.0
Total CMA	49.5	50.5	100.0	52.1	47.9	100.0

Source: 1976 Census of Canada, special tabulation.

CHART 11.28
Housing tenure, 1976



Source: 1976 Census of Canada, unpublished data.

TABLE 11.29
Selected Housing Changes, 1961-76

	Percentage change in total housing stock 1961-76	Percentage change in number of apartment dwellings 1961-76	Percentage change in number of rented dwellings 1961-76
Toronto			
Central Area	46.9	120.2	76.5
Mature Suburbs	21.2	93.7	65.7
New Suburbs and Fringe	164.0	476.7	339.5
Total CMA	88.5	210.1	155.8
Montreal			
Central Area	-3.5	8.9	-1.3
Mature Suburbs	5.2	15.7	7.0
New Suburbs and Fringe	126.8	138.5	123.8
Total CMA	68.3	67.0	54.3
Vancouver			
Central Area	79.6	135.0	101.1
Mature Suburbs	22.9	135.6	87.7
New Suburbs and Fringe	136.0	701.1	257.9
Total CMA	78.3	220.2	139.1
Ottawa			
Central Area	23.3	67.7	43.1
Mature Suburbs	11.3	44.2	27.6
New Suburbs and Fringe	214.8	309.9	243.6
Total CMA	109.3	133.6	109.9
Winnipeg			
Central Area	11.2	30.7	20.7
Mature Suburbs	9.7	65.1	40.3
New Suburbs and Fringe	130.1	535.6	322.8
Total CMA	53.7	117.1	89.9
Edmonton			
Central Area	47.9	93.4	72.9
Mature Suburbs	34.8	161.7	113.3
New Suburbs and Fringe	157.5	272.7	244.2
Total CMA	101.9	183.0	157.3
Quebec			
Central Area	-11.6	-1.4	-6.8
Mature Suburbs	11.1	37.8	18.8
New Suburbs and Fringe	207.6	242.0	232.6
Total CMA	108.0	107.3	93.7
Hamilton			
Central Area	44.3	103.8	92.1
Mature Suburbs	4.5	53.4	29.3
New Suburbs and Fringe	106.2	347.3	235.9
Total CMA	64.0	153.8	124.2
Calgary			
Central Area	41.0	81.8	73.3
Mature Suburbs	15.4	76.8	65.4
New Suburbs and Fringe	198.4	198.5	260.7
Total CMA	97.9	107.3	124.0
Kitchener			
Central Area	8.0	36.0	42.5
Mature Suburbs	15.8	87.1	68.4
New Suburbs and Fringe	146.8	311.6	281.6
Total CMA	108.5	202.6	198.1
London			
Central Area	4.4	26.5	27.0
Mature Suburbs	5.9	26.3	27.9
New Suburbs and Fringe	168.7	481.9	388.1
Total CMA	81.5	119.4	130.4
Halifax			
Central Area	3.0	36.3	15.7
Mature Suburbs	16.1	56.8	41.5
New Suburbs and Fringe	170.3	235.5	169.1
Total CMA	93.3	114.0	89.2

TABLE 11.29
Selected Housing Changes, 1961-76 (concluded)

	Percentage change total housing stock 1961-76	Percentage change in number of apartment dwellings 1961-76	Percentage change in number of rented dwellings 1961-76
Windsor			
Central Area	23.5	71.7	52.0
Mature Suburbs	12.8	60.7	36.9
New Suburbs and Fringe	85.1	313.5	123.0
Total CMA	50.5	101.1	65.8
Victoria			
Central Area	34.5	77.9	63.1
Mature Suburbs	46.0	171.3	128.8
New Suburbs and Fringe	110.3	554.2	163.1
Total CMA	70.5	200.8	133.2
Sudbury			
Central Area	-3.2	22.9	13.8
Mature Suburbs	4.8	19.3	10.7
New Suburbs and Fringe	138.2	269.5	110.9
Total CMA	74.0	82.0	53.5
Regina			
Central Area	20.3	58.8	42.6
Mature Suburbs	6.9	87.9	35.5
New Suburbs and Fringe	101.3	147.6	106.6
Total CMA	65.5	102.5	71.7
St. John's			
Central Area	-17.4	45.0	-17.4
Mature Suburbs	15.0	45.8	11.1
New Suburbs and Fringe	165.5	326.2	213.7
Total CMA	105.3	221.6	111.8
Oshawa			
Central Area	0.5	60.1	32.8
Mature Suburbs	34.9	235.7	124.4
New Suburbs and Fringe	151.7	328.9	277.6
Total CMA	93.7	237.3	172.5
Saskatoon			
Central Area	19.6	48.5	38.1
Mature Suburbs	13.6	93.6	58.4
New Suburbs and Fringe	181.4	558.3	298.1
Total CMA	72.9	164.6	115.8
Saint John			
Central Area	-14.0	-8.0	-11.1
Mature Suburbs	-15.0	-15.6	-19.9
New Suburbs and Fringe	133.7	221.5	135.7
Total CMA	41.2	17.9	13.5
Sherbrooke			
Central Area	-9.2	-3.4	-9.4
Mature Suburbs	3.7	12.6	3.1
New Suburbs and Fringe	206.0	235.0	193.8
Total CMA	98.7	89.5	72.1
Trois-Rivières			
Central Area	2.8	21.9	8.5
Mature Suburbs	3.5	22.7	3.2
New Suburbs and Fringe	179.4	210.8	141.0
Total CMA	63.4	61.8	39.0
Kingston			
Central Area	11.8	65.6	17.4
Mature Suburbs	12.1	90.4	32.2
New Suburbs and Fringe	189.1	237.5	162.8
Total CMA	86.4	133.9	76.9

Source: 1976 Census of Canada, special tabulation.

TABLE 11.30
Housing quality: structural condition¹ and crowding,²
1974

	Percentage of dwelling units classified as "fair" or "poor"	Percentage of large households ² with less than 200 sq. ft. per person
Toronto	6.8	55.8
Montreal	18.0	68.0
Vancouver	7.7	49.5
Ottawa	8.8	54.6
Winnipeg	15.9	67.1
Edmonton	7.8	53.4
Quebec	9.4	68.8
Hamilton	7.9	56.8
Calgary	7.0	48.6
Kitchener	3.8	59.5
London	5.1	51.3
Halifax	11.2	68.1
Windsor	9.8	65.8
Victoria	5.1	40.8
Sudbury	12.8	66.7
Regina	14.2	59.4
St. John's	9.4	68.9
Saskatoon	14.1	60.7
Saint John	20.5	73.9

¹An enumerator examined the exterior of the dwelling and noted any of twelve defects ranging from sloping walls to broken windows. Depending on the number of defects present, the dwelling was rated as in "poor", "fair", or "good" condition. Since only the exterior was examined a dwelling rated in good condition might still have many interior faults.

²Large households included those with five or more persons.

Source: 1974 Survey of Housing Units, CMHC, unpublished tabulation.

TABLE 11.31
Property crimes, traffic accidents and police statistics,¹ 1975-77²

	Serious property crimes per 1,000 population	Traffic accidents			Police manpower per 1,000 population	Police vehicles per mile of public thoroughfare
		Persons killed per 1,000 population	Persons injured per 1,000 population	Car accidents per 1,000 population		
Toronto	12.9	0.05	7.4	20.9	1.94	0.17
Montreal	27.2	0.09	6.5	30.3	2.35	0.21
Vancouver	30.5	0.11	8.3	39.8	1.65	0.11
Ottawa	22.4	0.07	7.4	31.1	1.64	0.16
Winnipeg	23.3	0.87	11.6	53.4	1.80	0.07
Edmonton	32.6	0.10	4.4	36.1	1.78	0.09
Quebec	23.6	0.13	2.8	48.0	1.81	0.17
Hamilton	24.7	0.07	10.4	23.2	1.68	0.14
Calgary	24.5	0.10	2.5	37.8	1.89	0.22
Kitchener	15.3	0.10	8.9	27.2	1.49	0.07
London	17.2	0.07	11.9	31.9	1.40	0.13
Halifax	29.9	0.08	5.0	36.1	2.13	0.23
Windsor	20.1	0.11	11.4	26.3	1.91	0.10
Victoria	24.9	0.11	9.8	34.5	1.76	0.11
Sudbury	16.2	0.14	7.3	20.9	1.23	0.06
Regina	36.0	0.67	7.7	37.2	1.82	0.09
St. John's	22.0	0.06	5.0	37.3	2.45	0.18
Saskatoon	19.8	0.97	8.0	46.0	1.79	0.06
Saint John	19.1	0.14	7.7	29.8	2.31	0.08
Sherbrooke	24.1	0.10	2.0	44.2	1.78	0.10
Trois-Rivières	17.8	0.17	4.1	40.0	2.21	0.12
Kingston	23.1	0.07	7.8	24.3	1.80	0.18

¹Figures are from data collected by individual municipal police forces. In some cases the area of jurisdiction may not correspond exactly to the boundaries of the Census Metropolitan Area. In these cases, however, the difference in the population involved is very small.

²Calculations are based on three year averages of crime traffic and police data.

Source: Crime and Traffic Enforcement Statistics, Catalogue 85-205; Police Administration Statistics, Catalogue 85-204; Justice Statistics Division, Statistics Canada, unpublished data.

TABLE 11.32
Public transit,¹ 1976²

	Demand/Utilization		Supply	
	Total fare passengers carried ³	Fare passengers carried per capita ⁵	Revenue vehicle miles ⁴	Revenue vehicle miles ⁵ per capita
	000s		000s	
Toronto	364,052.0	139.5	102,728.9	39.4
Montreal	328,363.3	142.6	85,320.3	37.0
Vancouver	97,191.5	89.9	33,055.6	30.6
Ottawa	67,991.3	109.6	24,833.9	40.0
Winnipeg	55,477.3	98.9	13,965.2	24.9
Edmonton	50,476.0	104.0	14,143.0	29.1
Quebec	26,739.3	47.8	9,197.6	16.4
Hamilton	31,535.3	65.7	10,121.7	21.1
Calgary	40,748.1	86.7	13,045.4	27.8
Kitchener	10,595.4	42.2	3,724.4	14.8
London	16,387.5	68.2	5,059.9	21.0
Halifax	11,082.5	61.6	5,326.3	29.1
Windsor	7,981.4	40.6	2,756.8	14.0
Victoria	12,571.9	74.5	3,737.0	22.2
Sudbury	4,373.1	39.5	1,587.1	14.3
Regina	8,441.8	56.4	2,519.3	16.8
St. John's	2,008.7	20.5	1,181.4	12.1
Saskatoon	10,736.4	80.3	2,325.5	17.4
Saint John	3,855.9	42.5	755.5	8.3
Kingston	3,746.2	46.4	919.3	11.4

¹Public transit includes buses, streetcars and subways, but excludes commuter rail. ²Figures not available for Sherbrooke or Trois-Rivières. ³Annual fare passengers refers to fares for a one-way trip. ⁴Revenue Vehicle Miles is calculated by multiplying the total mileage of all transit routes by the frequency of service on each route on a yearly basis. It suggests, in a general way, the level of accessibility of service to customers. ⁵Figures are standardized according to the total population of the component municipalities receiving transit service.

Source: From reports of the Canadian Urban Transit Association and Urban Affairs data base.

TABLE 11.33
Availability and use of public transportation, by zone¹

	All commuters ²		Percentage of commuters to whom public transportation is perceived as being available ³	Percentage of commuters using public transportation ⁴	
	1976	1977	1977	1976	1977
	000s				
Toronto	1,221	1,227	78	32	29
Mature Suburbs	343	340	93	51	49
New Suburbs and Fringe	840	847	72	24	21
Montreal	1,102	1,089	72	32	31
Mature Suburbs	236	217	90	47 ¹	46
New Suburbs and Fringe	827	823	65	27	26
Vancouver	481	466	70	19	17
Mature Suburbs	149	139	91	28 ¹	29
New Suburbs and Fringe	305	303	59	13 ¹	10 ¹
Winnipeg	245	243	83	24	25
Mature Suburbs	75	89	84	31 ¹	31
New Suburbs and Fringe	159	144	82	19	22
Ottawa-Hull	289	290	78	28	27
Mature Suburbs	50	48	85	..	33
New Suburbs and Fringe	210	215	74	27 ¹	25
Edmonton	243	214	71	16	17
Quebec	196	170	65	15 ¹	15 ¹
Hamilton	206	217	60	16 ¹	16 ¹
Calgary	231	217	73	19	18
Halifax	95	90	61	14 ¹	16 ¹

¹Some figures should be used with caution as the estimates have a sampling variability between 16.6% and 33.5% at one standard deviation. ²Includes employed persons travelling to the same work place each day. ³Commuters were asked if public transportation to work was available. 1976 data not available. ⁴Public transportation includes buses, street cars and subway and commuter trains.

Source: *Culture statistics, travel to work, 1973-1977*, Catalogue 87-502, special travel to work surveys, Senior Advisor's Office, Statistics Canada, 1976 and 1977.

TABLE 11.34
Average door-to-door time spent travelling to work¹

	All commuters ²		Commuters travelling by private automobile ³		Commuters using public transportation ⁴	
	1976	1977	1976	1977	1976	1977
	<i>time in minutes</i>					
Toronto	26	27	22	23	37	40
Mature Suburbs	27	28	24	24	32	34
New Suburbs and Fringe	26	27	22	23	43	47
Montreal	26	27	23	24	38	39
Mature Suburbs	25	26	20	21	33	33
New Suburbs and Fringe	27	28	23	24	41	43
Vancouver	24	24	23	22	34	33
Mature Suburbs	21	22	19	19	30	32
New Suburbs and Fringe	26	25	24	24	41	39 ¹
Winnipeg	21	22	19	20	31	32
Mature Suburbs	19	20	16	18	27	26
New Suburbs and Fringe	22	24	20	21	33	36
Ottawa-Hull	21	22	18	19	30	31
Mature Suburbs	18	18	17 ¹	13 ¹	23	25 ¹
New Suburbs and Fringe	22	23	19	20	33	33
Edmonton	21	23	20	22	29	30
Quebec	17	18	16	16	32 ¹	34 ⁴
Hamilton	22	22	21	21	32 ¹	30 ¹
Calgary	22	23	19	22	27	33
Halifax	20	20	20	20	32 ¹	28 ¹

¹Some figures should be used with caution. The estimates have a sampling variability between 16.6% and 33.5% at one standard deviation.

²Includes employed persons travelling to the same work place each day.

³Private automobile includes cars, station-wagons, vans, campers, trucks, etc.

⁴Public transportation consists of buses, street cars, subway and commuter trains.

Source: Special travel to work surveys, Senior Advisor's Office, Statistics Canada, 1976 and 1977.

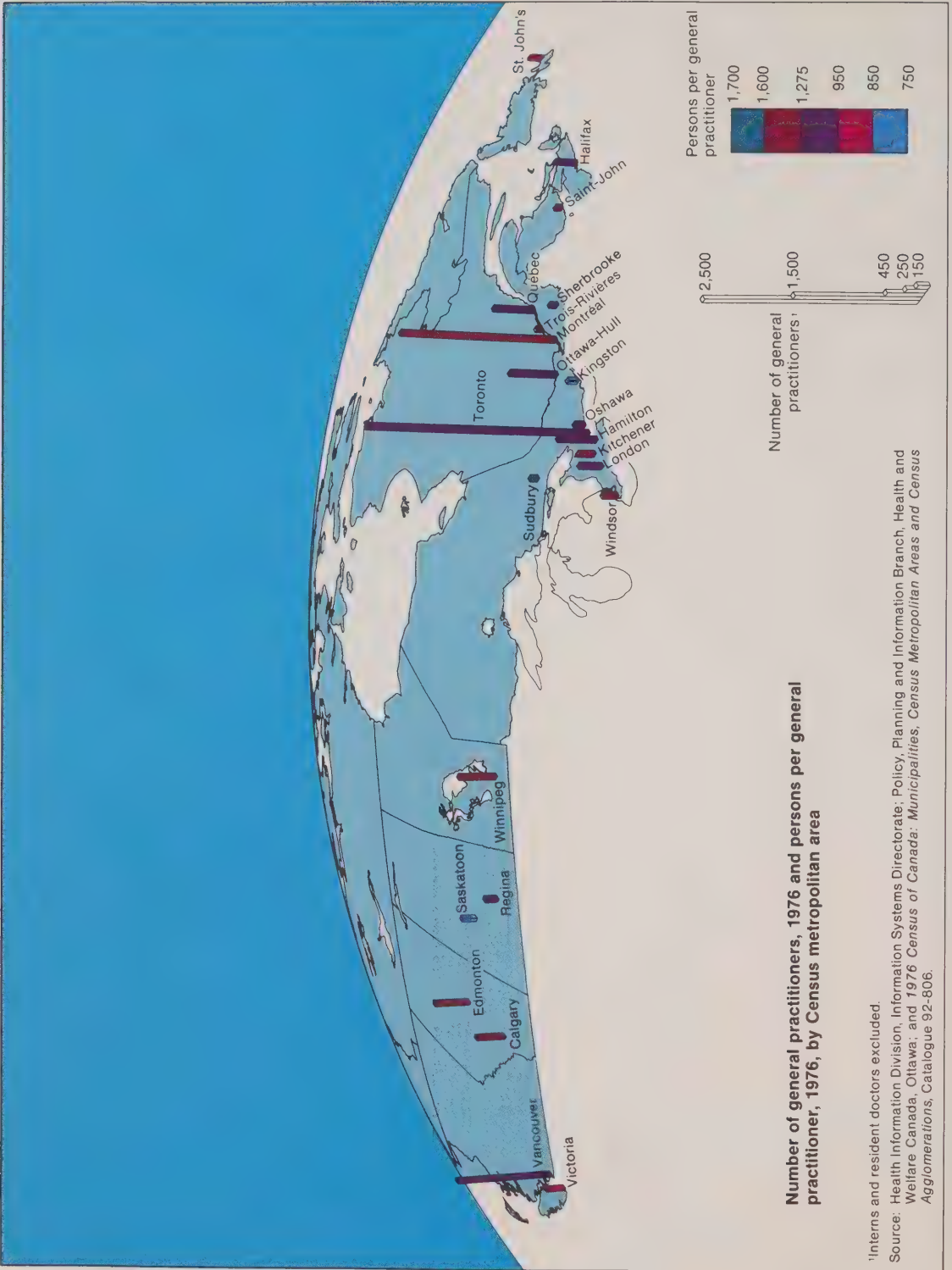
TABLE 11.35
Elementary and secondary school enrolment and staff
and pupil-teacher ratios, 1976-77¹

	Elementary and secondary enrolment	School staff	Pupil- teacher ratio
	<i>000s</i>		
Toronto	459.8	23.8	19.3
Vancouver	210.5	10.9	20.1
Ottawa	121.9	6.4	19.1
Winnipeg	117.5	5.6	20.7
Edmonton	101.9	5.1	19.8
Hamilton	70.1	3.6	19.4
Calgary	109.0	4.9	22.1
Kitchener	67.0	3.3	20.2
London	57.4	2.8	20.8
Halifax	38.4	2.1	17.9
Windsor	45.9	2.4	19.5
Victoria	27.0	1.3	20.5
Sudbury	51.6	2.6	19.7
Regina	35.0	1.5	22.9
St. John's	33.8	1.5	22.6
Saskatoon	30.2	1.4	22.3
Saint John	21.5	1.0	21.6

¹Figures are not available for Montreal, Quebec, Sherbrooke, Trois-Rivières, Kingston, Oshawa and the Quebec portion of the Ottawa CMA.

Source: *Education in Canada, 1978*, Catalogue 89-229.

Map 11.36



¹Interns and resident doctors excluded.

Source: Health Information Division, Information Systems Directorate; Policy, Planning and Information Branch, Health and Welfare Canada, Ottawa; and 1976 Census of Canada: Municipalities, Census Metropolitan Areas and Census Agglomerations, Catalogue 92-806.

TABLE 11.37
Retail chain stores and motion picture theatres

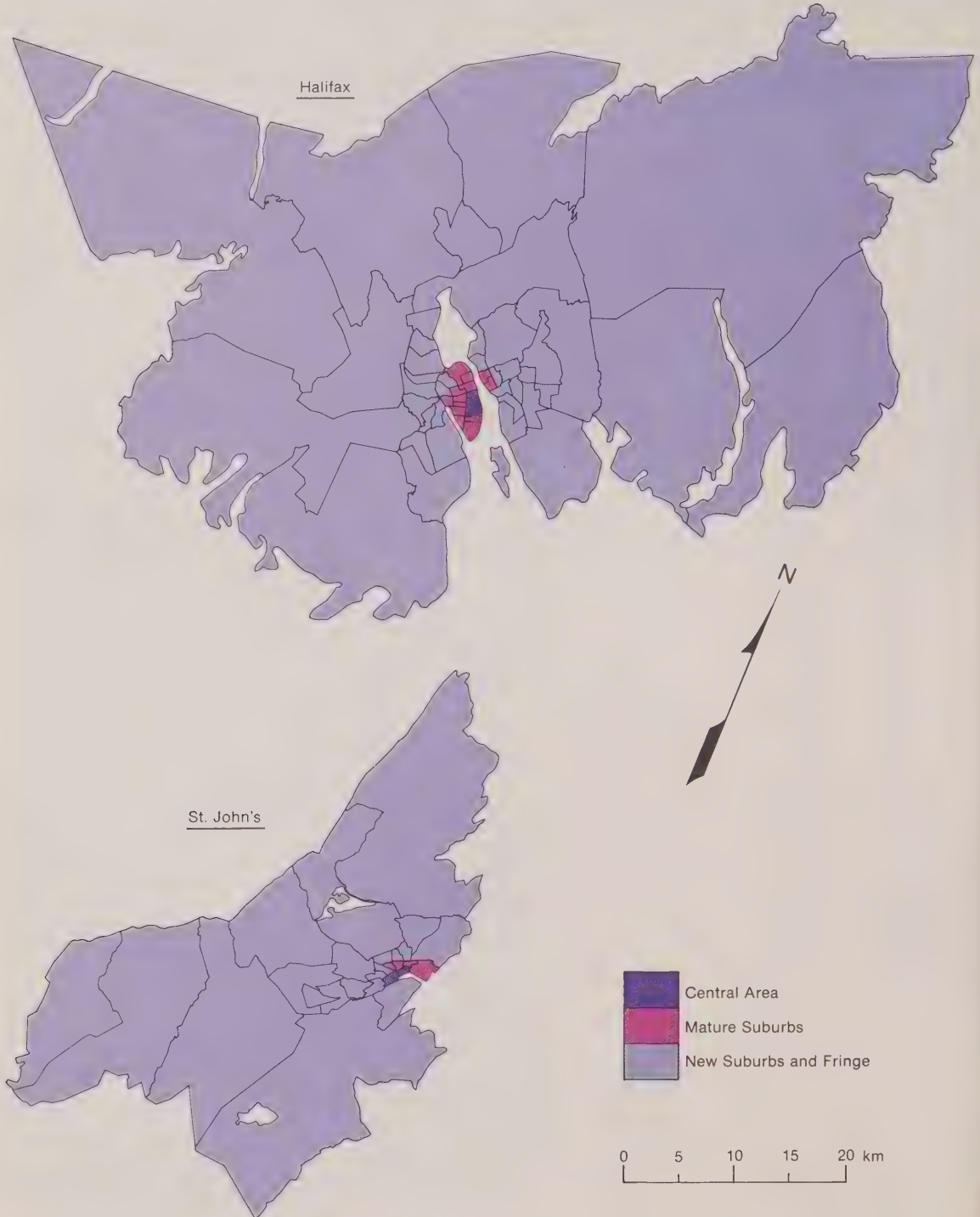
	Grocery stores 1977	Department stores 1977	Drug stores 1977	Number	Motion picture theatres (1976) Seating capacity
Toronto	566	72	111	55	49,497
Montreal	377	72	30	81	69,291
Vancouver	160	34	51	31	21,269
Ottawa	101	29	17	11 ¹	9,163 ¹
Winnipeg	144	23	19	16	12,115
Edmonton	92	21	29	20	17,286
Quebec	45	19	—	13	11,578
Hamilton	130	20	25	14	10,826
Calgary	110	19	12	17	15,125
Kitchener	84	15	10	..	..
London	68	12	24	8	6,277
Halifax	67	10	20	..	..
Windsor	42	9	23	7	6,305
Victoria	19	7	13	9	6,803
Sudbury	24	6	6	..	..
Regina	28	5	15	5	—
St. John's	11	7	8	..	..
Oshawa	35	5	12	5 ²	3,881 ²
Saskatoon	25	6	10	..	..
Saint John	13	5	1	..	..
Sherbrooke	8	5	—	6	5,155
Trois-Rivières	8	4	1	6	4,387
Kingston	21	4	4	..	..

¹Hull not included.

²Whitby not included.

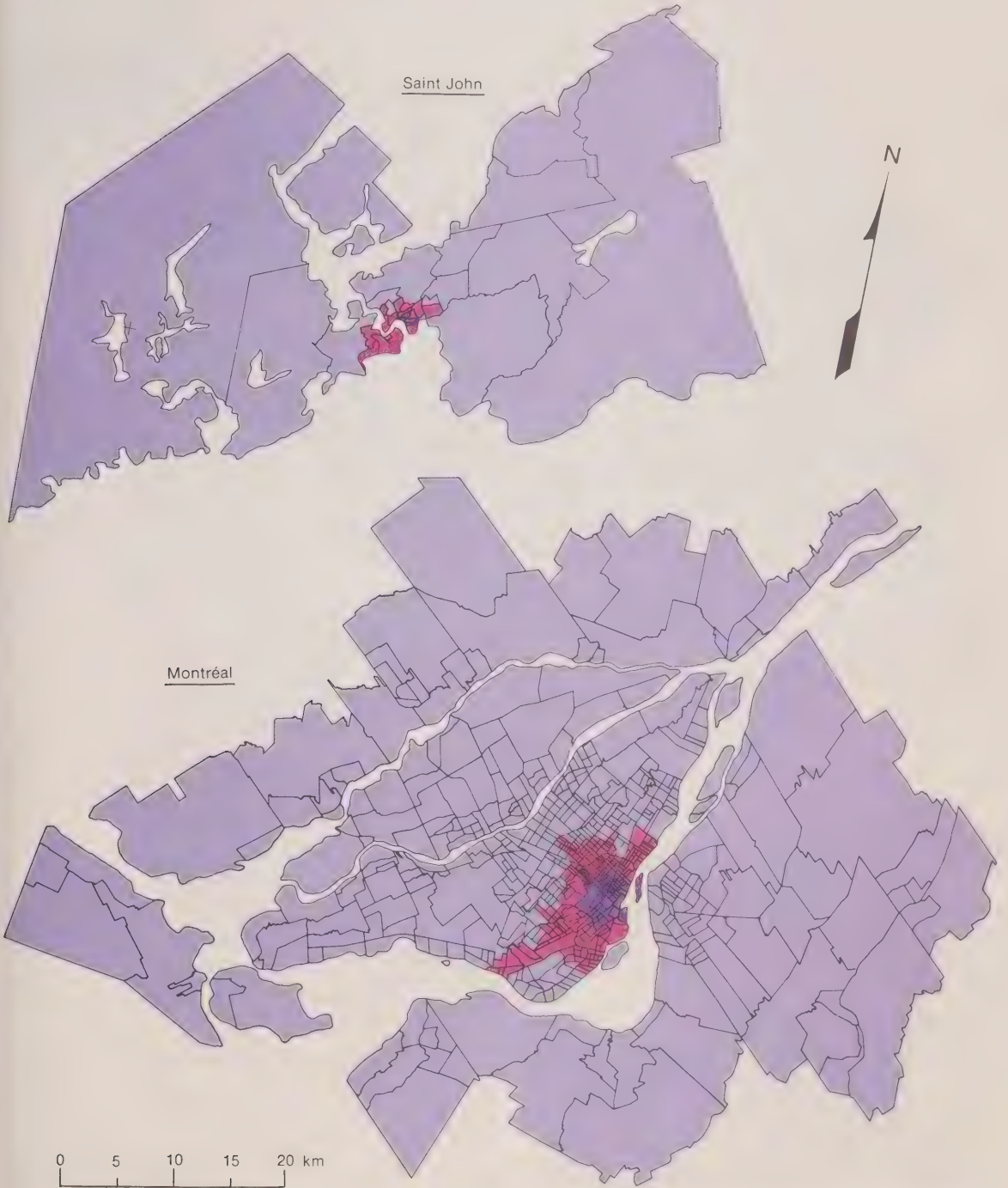
Source: *Retail Chain Stores*, Catalogue 63-210, 1977, *Motion Picture Theatres and Film Distributors*, Catalogue 63-207, 1976.

CMA zone index maps

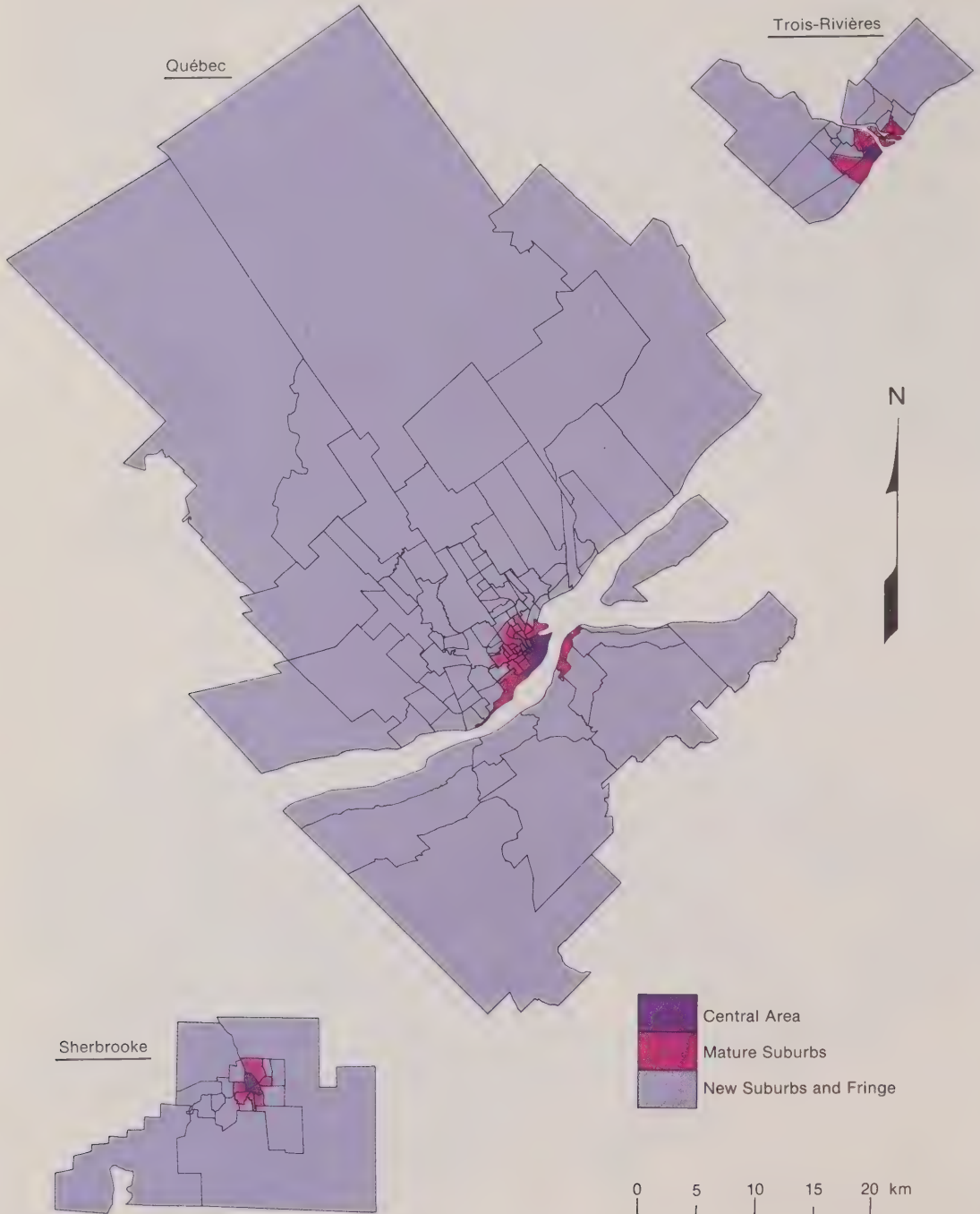


Source: 1976 Census of Canada and original research.

CMA zone index maps

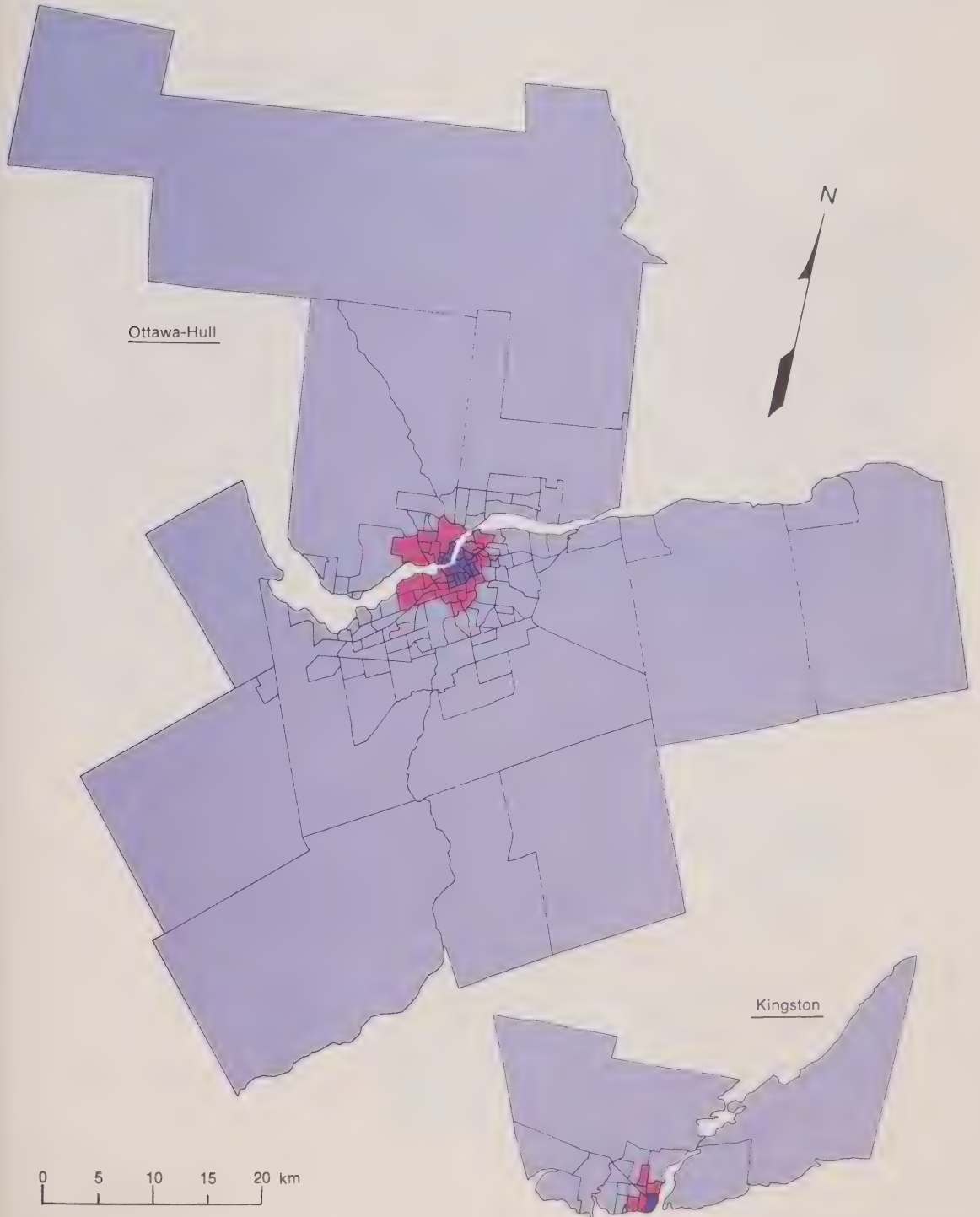


CMA zone index maps

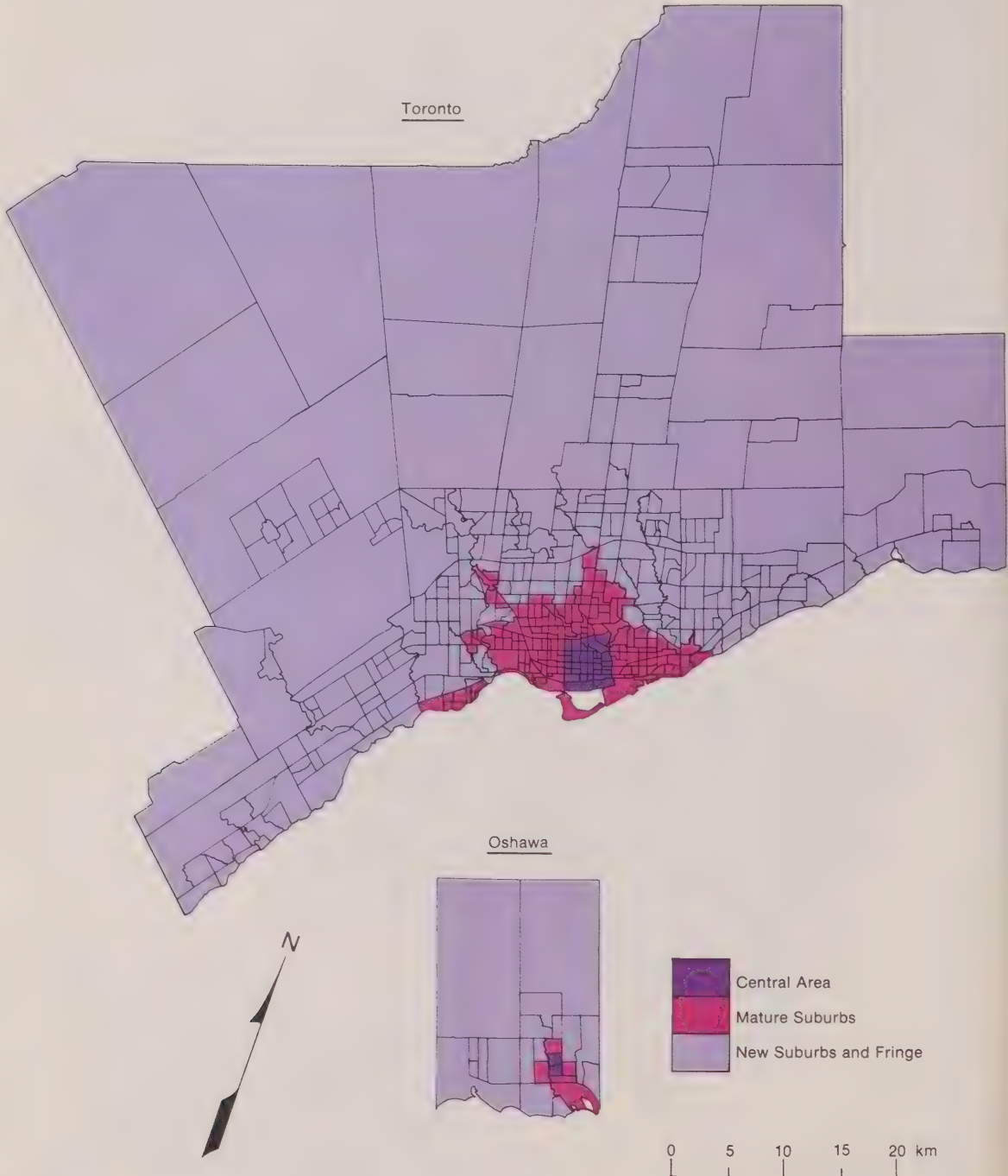


Source: 1976 Census of Canada and original research.

CMA zone index maps



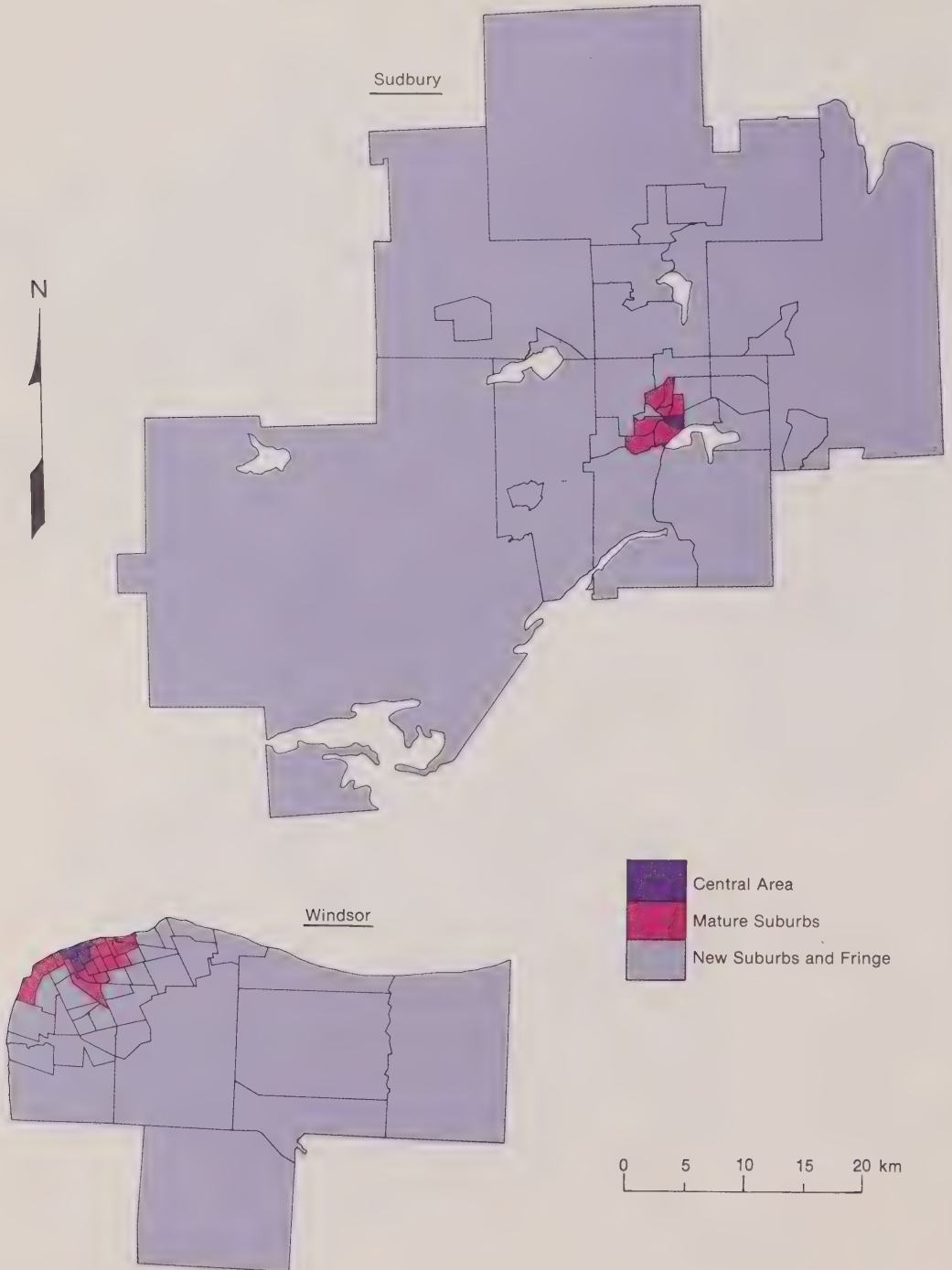
CMA zone index maps



CMA zone index maps

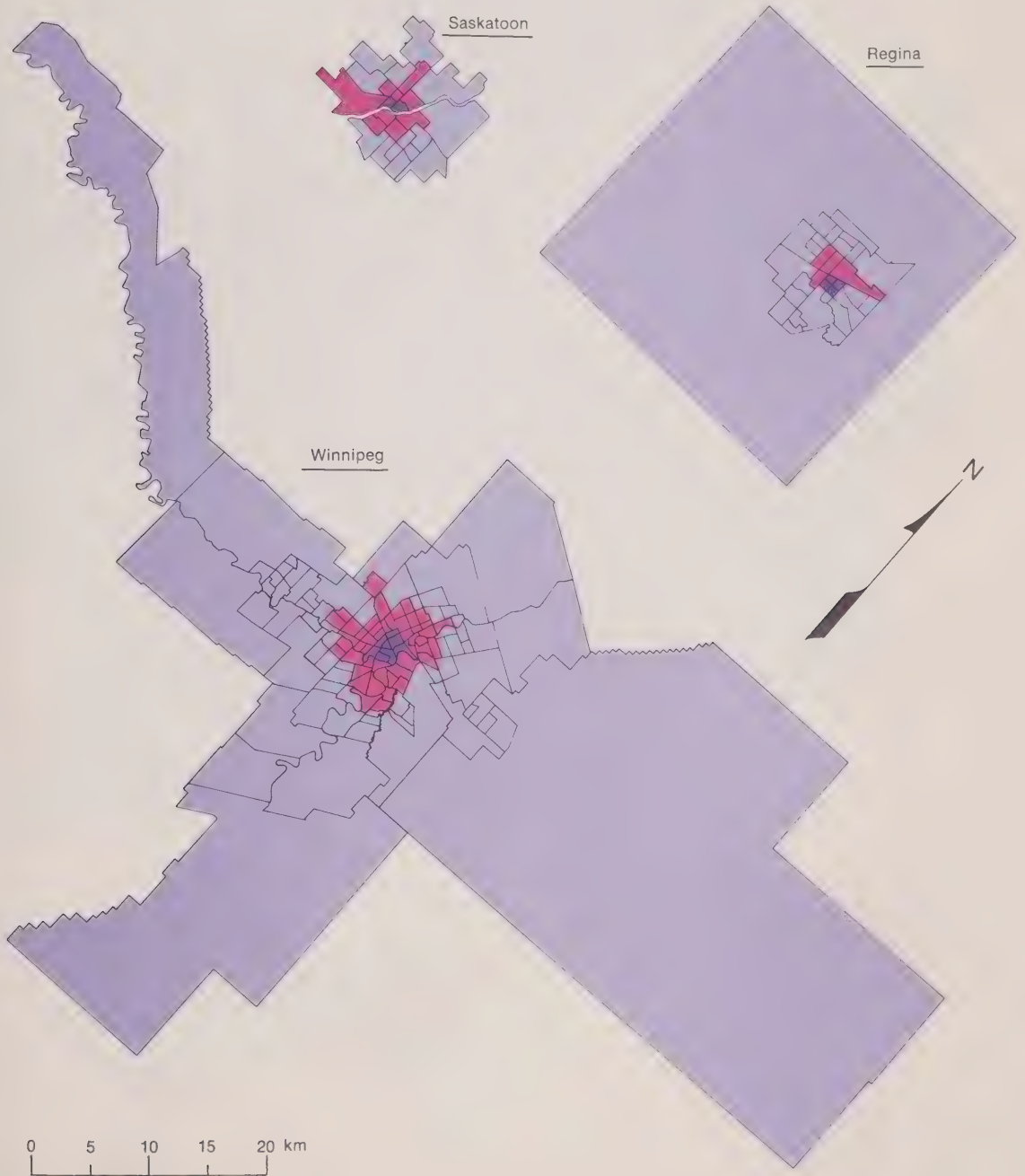


CMA zone index maps

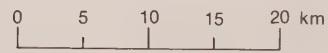
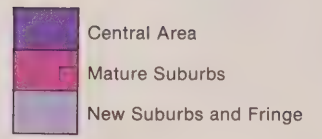
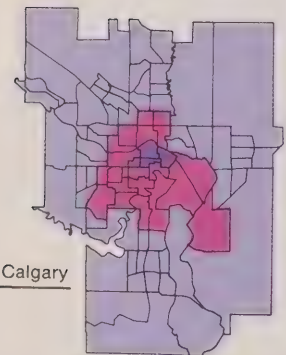
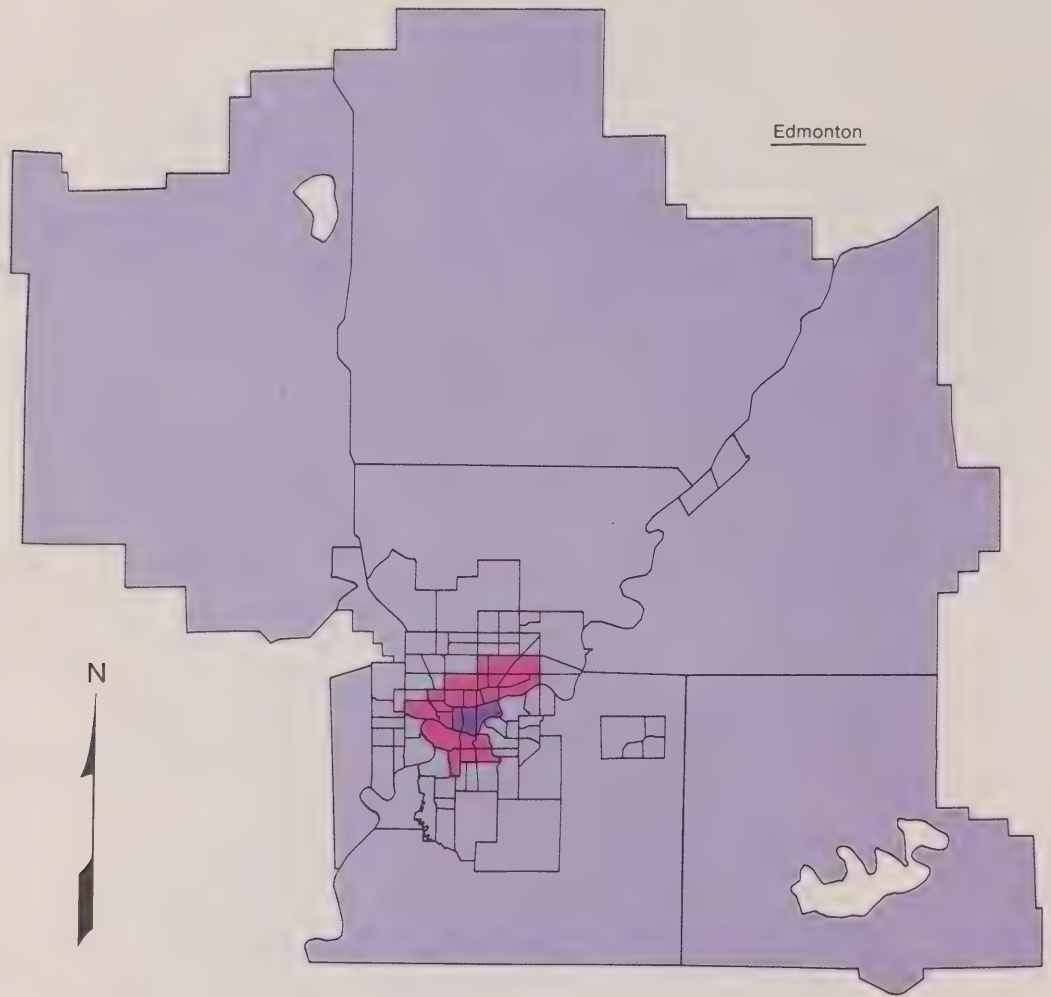


Source: 1976 Census of Canada and original research.

CMA zone index maps

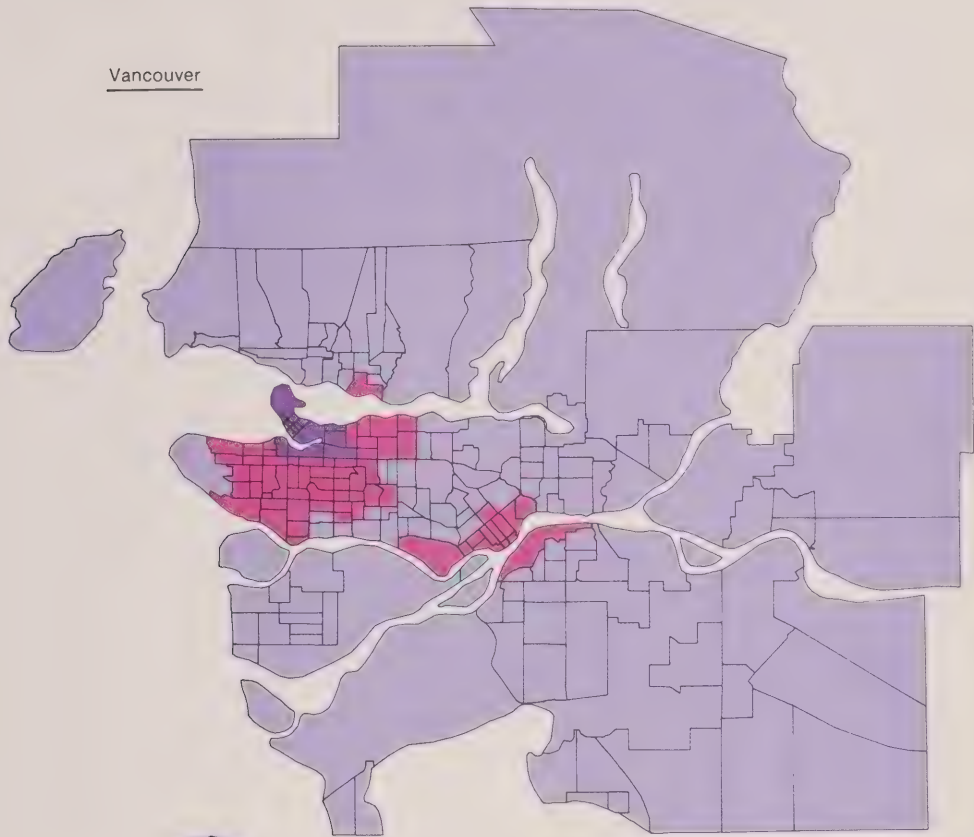


CMA zone index maps

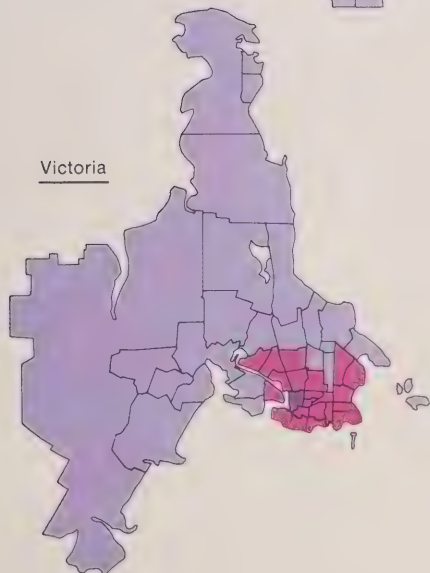


Source: 1976 Census of Canada and original research.

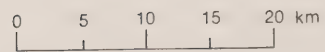
CMA zone index maps

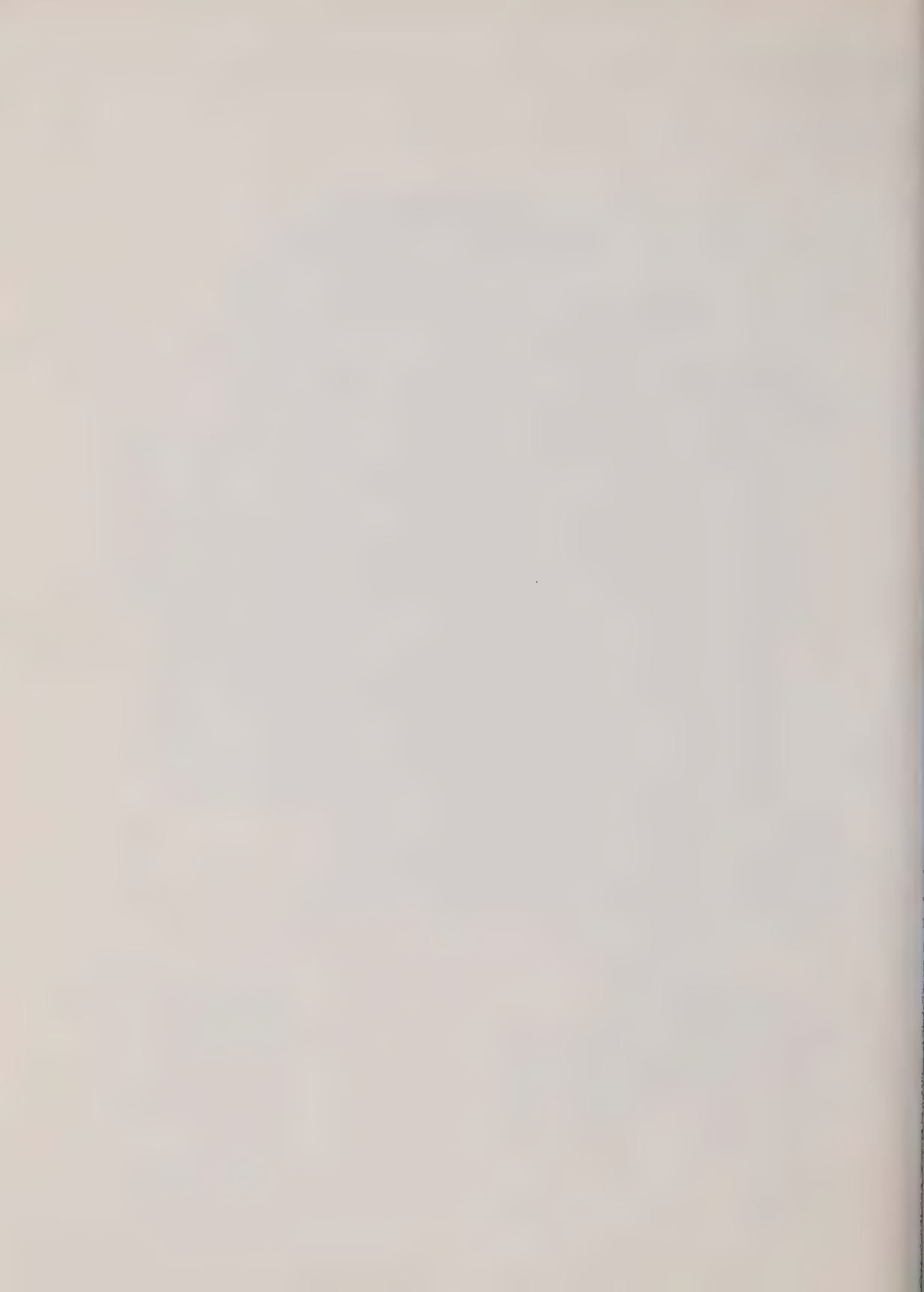


Vancouver



Victoria





The image features a halftone pattern of a globe, where the continents are represented by a denser grid of dots and the oceans by a sparser grid. The word "Environment" is printed in a clean, white, sans-serif font in the upper right quadrant of the image.

Environment

Tables, Charts and Maps

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Environment

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The text on climate variability was prepared by D.W. Phillips, Atmospheric Environment Service, Environment Canada.

Canada is the world's second largest country, with a total area of land and freshwater of almost 10 million square kilometres. A large part of this area, however, does not possess significant renewable resources. Over half (55%) of the land area of Canada can be termed wildland, that is land that is not used for agriculture and is incapable of producing forests, as shown in Table 12.1.¹ This reality is reflected in the distribution of population in Canada. Urban development is largely confined to the more productive southern margin of the country. Almost 97% of the population live within census divisions that make up only 24% of Canada's total land area.²

The introductory land resource summary, Table 12.1, serves, in part, as an organizing framework within which this chapter considers some renewable resource aspects of Canada's natural environment. After recognizing the variability of Canada's climate and the importance of climate extremes, the chapter deals with the renewable resources of freshwater, agricultural land and forests. Then endangered wildlife and renewable marine resources are touched upon.

This chapter attempts to develop an awareness that, despite Canada's size, its renewable resources are not infinite. There is a risk of placing excessive pressure on the renewable resource base in certain regions and instances. Canada's renewable resource opportunities rely on the biosphere³ which must also assimilate, store and digest the waste effluents of industrial civilization. There are real limits to the carrying or regenerative capacity of the biosphere and the consequences of misuse or overuse can be very serious.⁴

Climate Variability

Canada has a variety of climatological landscapes. Permanently frozen ice caps, windswept treeless tundra, luxuriant rain forests, hot semi-arid scrub lands, and sun-drenched grain fields are a few of the distinctive environmental scenes found in this country. The climate regions of Canada are summarized in Map 12.2.

Most of Canada lies in the zone dominated by westerly winds where migrant high- and low-pressure systems move irregularly, but generally toward the east. The general atmospheric circulation is the main factor influencing the Canadian climate, but the physical geography of North America and the proximity of large bodies of water also produce a considerable effect on its pattern. Many areas experience air from different sources every few days, leading to the variations of weather familiar to Canadians. Temperature changes of 10 to 15 Celsius degrees from one day to the next are not uncommon in winter in any region except along the Pacific Coast or in the high Arctic. The seasonal rhythms of climate are well known — for example, winters wetter than summers in coastal British Columbia; the summer precipitation maximum in the Prairie provinces; the reliable January thaw in southern Ontario; and violent Atlantic Nor'easters.

Average climate values do not tell the whole story. Short-period abnormalities and occasional daily record extremes of temperature or precipitation, for example, are to be expected as part of the normal climate. In Calgary, for instance, during January the mean daily temperature is -11°C but, in the nearly 90 years that records have been kept, the temperature has ranged from as high as 16°C to as low as -44°C . Days, months, and even seasons may be noticeably warm or cold, wet or dry.

Traditionally, economic and environmental planners have assumed that climate is relatively stable. Even for such weather-sensitive activities as agriculture, the vagaries of climate and the frightening hazards posed by persistent fluctuations have been too often ignored. The existence of climatic variability is most convincingly revealed by examining the records of individual stations over the years and decades. Simple graphs, such as Charts 12.3 and 12.4, show a highly variable climate from year to year, but also one which has minor trends or fluctuations over the decades.

Common to most long climatic time series are short duration anomalies whose effects place considerable stress on man and his surroundings. Extreme cold, droughts and flooding, and excessive or scanty snowfalls are the cause of most of today's climatic concerns; the list of social and economic consequences from unusual climate is virtually infinite in number and variety.

Not all climatic variations, however, are adverse. The short-lived drought in southern Ontario during the summer of 1978 reduced some agricultural yields by a third, yet helped generate a record amount of tourist dollars. Map 12.5 depicts the impacts of a few of the weather anomalies which occurred in Canada during 1978. Sustained cold persisted in most of the central and eastern Arctic for the first two thirds of 1978, while mild dry weather prevailed over much of populated eastern Canada in summer. Drought conditions intensified in parts of British Columbia, southwestern Ontario, and the Maritimes, reducing agricultural production, lowering water levels, and enhancing the start and spread of forest fires. The average number of ice storms, blizzards, tornadoes and intense rainstorms also occurred. For the most part, however, Canadians benefited from pleasant weather. Vacationers enjoyed periods of good touring weather while farmers across Western Canada had sufficient rain and above-normal sunshine.

Freshwater

In Table 12.1, the area occupied by freshwater bodies is shown for the regions of Canada. Canada probably has more lakes than any other country, and, in fact, Canada has or shares with the United States seven of the 14 largest lakes in the world in terms of surface area (Superior, Huron, Great Bear, Great Slave, Erie, Winnipeg and Ontario). While water stored in lakes is a valuable resource in its own right, notably in regulating the flow of rivers, streamflow data are required to gauge the amount of water available on a renewable basis. Canada's rivers discharge close to 9% of the world's renewable water supply.^{5,6}

Although Canada possesses a large share of the world's water supply, the areal distribution of this water is not uniform across the country. The regional variations in the

supply of water can be examined using Map 12.6 which depicts annual runoff.⁷ Average annual runoff varies greatly, from well over 200 cm in coastal British Columbia to less than 2.5 cm over much of the southern Prairies. As well, there are large variations in the supply of water seasonally and from year to year. In the Prairie provinces the scarcity of water for agricultural purposes can be a major problem in drier years. The largest water supplies occur in the less heavily populated Atlantic and Pacific coastal margins of the country.

In Canada the average household uses about 50 gallons (227 L) of water per day for each person, and another 1,400 gallons (6 364 L) per person per day are used for manufacturing, cooling, municipal and rural, agricultural and mining uses. This latter figure does not include the extensive use of falling water for hydroelectric power generation. As well, water transportation and freshwater fisheries are important to Canada, and water-oriented recreation is an integral part of Canadian lifestyles.

While Canada enjoys an overall abundance of freshwater, there are regional supply difficulties, notably in the Prairies and the North. With the heavy use of water for a variety of purposes, including waste disposal, shortages of clean water are occurring in some parts of the country. The Lower Great Lakes, for example, are subject to large effluent discharges from municipalities and industries as well as to pollution from agricultural and other land-use activities. In the words of Jeanne Sauvé, former Minister of Environment Canada: "the shortage of water supplies is even now a limiting factor in the economic and social development of some regions in Canada".⁸

Agricultural Land

Canada has less land that is suited for agriculture than is popularly recognized. Only about 5% of Canada's land can be classified as able to support cropland, that is capable of sustained annual production of common cultivated crops. If the area with more restricted agricultural capability is added to cropland, a total of slightly more than 10% of Canada's land can be termed arable and could support economically viable agricultural production. Most of the remaining land is unsuited for any agricultural use whatever because of adverse climatic or soil conditions. The limited areal extent of Canada's potential cropland is displayed in Map 12.7.

Most of Canada's agricultural land is located in the southern parts of the nation with only scattered pockets of agriculturally productive land occurring in more northerly regions. The Prairie provinces contain about 70% of Canada's potential cropland and together with Ontario account for roughly 85% of the total. The best land in southern Ontario is capable of producing a wide range of crops, including soybeans, soft fruits, grain, corn, vegetables and tobacco. Due to climatic and soil differences, the best land of the Prairie provinces is generally limited to producing oilseeds, root crops and grains.

In general, the spatial distribution of major population concentrations coincides with the pattern of cropland. In fact, the proximity of good agricultural land to rapidly expanding urban centres represents a major conflict in land use. The significance of this competition between agricultural and urban/speculative uses is underscored by a study of Table 12.8, in which the potential cropland within a 50-mile (80 km) radius of each Census Metropolitan Area (CMA) is tabulated. Twenty-six per cent of Canada's potential cropland is located within 50 miles of CMAs. The situation is more serious with respect to the best agricultural land, that is

land having no significant limitations for temperate climate agricultural production. More than half (57%) of the best land occurs within 50 miles of major urban centres.

Some of the farmland being converted to other uses is not required at present to satisfy Canada's domestic food consumption or to grow crops for export. Projections indicate, however, that within 50 years most of Canada's good farmland will be required simply to serve domestic needs.⁹ Loss of the best farmland will require either its replacement to the extent possible by poorer land, with associated higher costs, or increasing dependence upon imports. The by-no-means inexhaustible agricultural land resources of Canada should be managed not only in the interests of short-term profitability, but with a view to future resource requirements.

Forests

The vast forested area of Canada can be regarded as one of the world's major natural resources. About one tenth of the world's area of productive forest is located in Canada.

Forested land is a dominant feature of Canada's natural vegetation. Map 12.10 reveals the spatial distribution of the three major natural vegetation zones of Canada: forests, grassland and tundra. This natural pattern of vegetation has been much altered by man's activity. In the St. Lawrence Lowland - Lower Great Lakes area, for example, agriculture has replaced most of the natural forest cover. Similarly, agriculture has transformed the grassland region as crops have supplanted much of the natural prairie vegetation.

Wide variations in physiography, soil and climate result in the existence of eight fairly distinct natural forest regions. Map 12.10 shows the extent of these regions and lists the principal tree species occurring in each. The variety of tree species tends to decrease toward the centre of Canada and fewer species are encountered in the north than the south. The natural forests of southern British Columbia and southern Ontario are characterized as centres of species abundance. The Boreal forest region is by far the largest, stretching in a continuous belt from Newfoundland to the Rocky Mountains, and northwest to Alaska. The Boreal forest is largely coniferous in nature and occupies more than 80% of Canada's forest land.¹⁰

Table 12.9 highlights Canada's forest inventory. Well over one third (37%) of Canada's total land area can be classified as forest land, that is, land that is capable of producing stands of trees of a certain minimum magnitude.¹¹ However, the portion of the country that can be defined as productive forest land is considerably less, as a look at Table 12.9 reveals. Productive forest land is land that is capable of producing a merchantable stand of trees within a reasonable length of time. Also, some forest land is reserved for such uses as parks, game refuges, water conservation areas, and nature preserves. This further reduces the area of productive forest.

Of the total inventoried productive forest land area of 1 984 000 km², 87% is provincial Crown land, 6% is federal Crown land, and 8% is privately owned. About 375 000 km², or 19% of the total productive forest land is currently economically inaccessible. A further 12% or 240 000 km² is accessible but non-stocked, that is cutover areas and burns that have not been replanted and are lacking in tree growth. As shown in Table 12.9, the volume of softwood on economically accessible productive forest land exceeds the volume of hardwood in every province.

The large area of productive forest land in Canada does not mean that a comfortable timber surplus exists. In fact a

recent study carried out for the Forest Management Institute of the Canadian Forestry Service found the opposite to be true.¹² Many forest-based communities are in trouble today because their mills cannot secure an economic wood supply. The profile of the remaining mature forest is not as attractive as in the past. In many areas, the forest resource has been high-graded, that is only the most valuable trees have been taken, and the mix of species, log sizes and grades has deteriorated. Harvesting is often carried out with no thought for subsequent reforestation. In no province is acceptable regeneration experienced in all areas currently being cut. In fact, in Canada the backlog of unsatisfactorily stocked, burned, and cutover forest land is increasing rather than decreasing. The message is important: unless decisive action is taken to advance forest management, there will not be enough wood to meet the demands of the Canadian forest industry and maintain that industry's competitive position in world markets.

It should be borne in mind, however, that sound forest management involves more than growing trees for industrial use. There is increasing appreciation of the importance of the recreational, aesthetic and educational attributes of forests as well as the role of forests in the provision of wildlife habitat and streamflow regulation. The recognition of the multiple values of forests is fostering a broader and more realistic concept of forestry.

Endangered Wildlife

Awareness of the complexity of biological systems is growing. The ecological balances of the biosphere represent a highly ordered state, although the nature of the order is not always well understood. Increasing knowledge of ecology brings greater respect for the feedbacks and interdependencies, and potential instabilities, of the living system of which wildlife is an integral part. When a species becomes extinct or an ecological system is destroyed something irreplaceable has been lost.¹³

The impact of human activity on natural ecosystems is emphasized by the increase in the rate of species extinction. Fossil evidence indicates that in prehuman times mammal and bird species became extinct throughout the world at a rate of about three species each century. Since the 16th century, however, this extinction rate has climbed to 150 species each century.¹⁴ This increase suggests the expanding destructive potential of human activity on man's own environment. There is a need for concern about the long-term health of the biosphere and its components, such as wildlife, whether commercial gain is involved or not.

Table 12.11 records those animals now endangered throughout most or all of their Canadian range. For the purposes of this list, endangered is defined as those species or subspecies currently in danger of extinction and whose prospects of survival are in immediate jeopardy. Modern man's destruction of wildlife habitat is the major contributing factor to wildlife becoming endangered. Other factors include disposal of wastes such as sewage and toxic chemicals into the natural environment, the use of pesticides, commercial exploitation, removal of unwanted species and the introduction of competing foreign species. It can be noted that the availability of many big game species, migratory waterfowl, and fur-bearing species for the purposes of hunting, recreation, and fur production is largely undiminished and in some cases has been enhanced beyond historic levels.

The results of further encroachment on wildlife habitat will

be predicated on how well Canada can plan now in the area of habitat preservation, pollution abatement and species conservation.

Oceans

The oceans are a source of exploitable wealth that will be relied on increasingly in the future throughout the world. In addition to fisheries, emphasized in this look at Canadian renewable resources, offshore areas provide an important and growing portion of the world's oil and natural gas. Certain areas of the deep seabed, for the most part in the tropics, are rich in mineral nodules, potentially a source of four elements of major economic significance: nickel, copper, cobalt, and manganese.

Canada is bounded by three oceans and has the longest national coastline in the world, 188 000 km in length. The Atlantic Coast has a particularly broad continental shelf of nutrient-rich waters supporting some of the world's most productive fishing grounds. The extensive offshore fishing banks along the Atlantic Coast are depicted in Map 12.12. They have been exploited by some nations for more than four centuries.

Historically, marine life has been regarded as inexhaustible. The pressures placed on marine resources by modern harvesting techniques have shown this not to be so. Some of the world's most valuable fish resources, such as herring, have suffered serious declines from overfishing. Some species of whales have been severely depleted due to overexploitation, and their restoration is a matter of grave concern. The Atlantic groundfish industry of Canada, which catches and processes such bottom-dwelling species as cod, haddock and pollock, has in recent years been faced with badly depleted fish stocks due to overfishing.

The total fish catch by all nations off Canada's Atlantic Coast has been declining drastically since 1970, reaching a 25-year low in 1977. This decline reflects both reduced resource availability and recent stringent management measures associated with the extension on January 1, 1977 of Canada's jurisdiction over both foreign and domestic fisheries to 200 nautical miles offshore. While total catch off Canada's Atlantic Coast (comprising areas both within and beyond the 200-nautical-mile limit) is lower, this country's catch and its share of the total catch are increasing. In 1977, Canada accounted for 60% of the total fish catch, in contrast to the scarcely more than one third of the total recorded throughout most of the 1970s. A similar improvement in Canada's position with respect to other fishing nations is occurring on the Pacific Coast. Canada's increased area of responsibility for fisheries management represents an opportunity to rebuild fisheries severely depleted in recent years owing to lack of effective management under international arrangements.¹⁵

Table 12.13 shows the Canadian sea fisheries catch by species for the Atlantic and Pacific coasts for 1977. Canadian fishermen concentrate on a few high-value species. Four types of fish and shellfish accounted for about 70% of the Atlantic catch of fish and invertebrates by weight. On the Pacific Coast, two fish species made up about 80% of total landings. The foreign fleets operating off Canada's coasts generally fish certain large-volume but low-value species that have little market attraction for Canadian fishermen. Some concern exists that the concentration of fishing effort on particular species might have unbalancing effects on other life forms in the ocean.

As well as being subject to overfishing and any unbalancing effects of selective fishing, marine renewable resources

are threatened by pollutants from offshore oil and natural gas development, from shipping and from land-based activities.

Closing Remarks

The primary focus of this chapter is the renewable resource opportunities provided by Canada's natural environment. Canada's renewable resource endowment is finite in extent and can be depleted through misuse.

Turning very briefly to non-renewable resources, it may be noted that the important role played by mineral and energy resources in Canada's historical development has fostered the attitude that these resources will always be available in almost unlimited quantities. Canadians are now realizing that this is not the case. A prime illustration of the growing appreciation of the finite character of energy resources is the recent move by Canada toward self-reliance in energy supplies. Petroleum exports, for example, which reached their peak in 1973, are being sharply reduced. It has now been recognized that domestic supplies are needed in this country to meet future Canadian requirements. The stock of minerals is more secure, some having very large known reserves. However, the remaining reserves of some minerals are becoming of noticeably lower grade and are less accessible. The era of cheap energy is past and other mineral resources can no longer be taken for granted.¹⁶

The natural environment, in addition to supporting renewable and non-renewable resource developments, must absorb the wastes generated by all human activities. Consideration of the threats to the biosphere posed by the accumulation of wastes, and by permanent environmental restructuring, raises serious concerns. The rate of growth of the technology of industrial civilization is so great, and our understanding of ecological relationships so rudimentary, that the consequences and impacts of human activities are not clearly foreseen.

More and more, people are questioning the wisdom of economic growth based on maximum profits with minimum concern for external impacts. Resource limits and waste disposal problems, not to mention social and financial constraints, require that growth processes be managed with recognition of other needs of society, and with an appreciation of what the natural environment is capable of providing over the long term.

Footnotes

¹Were this definition of wildland broadened to encompass land that is not used for agriculture and is incapable of supporting productive forests, two thirds of Canada's land area could be so classed.

²Unpublished material from the National Geographic Mapping Division, Department of Energy, Mines and Resources. Updated using 1976 Census of Canada, Catalogue 92-831.

³Biosphere refers to the life zone of the earth, consisting of the outer sphere of the earth that is inhabited by living organisms, including the lower part of the atmosphere, the entire hydrosphere to its maximum depth (10 863 m), soils, and the lithosphere to a depth of about 2 km where some bacteria occur in conjunction with petroleum deposits. (McGraw-Hill Encyclopedia of Environmental Science, 1974.)

⁴Canada as a Conserver Society: Resource Uncertainties and the Need for New Technologies, Science Council of Canada Report No. 27, September 1977.

⁵In addition to the water obtained from lakes and rivers, about 10% of the water supplied by municipal water systems in Canada comes from groundwater sources.

⁶Canada Water Year Book 1977-1978, Environment Canada, Ottawa.

⁷Runoff is that portion of precipitation that reaches stream channels. The fraction of precipitation that forms runoff varies considerably with climate and topography. For example, precipitation in the form of rain may fall on an impervious surface such as a parking lot and reach a stream very quickly and with little loss to evaporation. On the other hand, precipitation on a pervious surface may reach a stream only after long delays in snowpack, soil moisture, or groundwater storage, and losses through evaporation may be high.

⁸Canada Water Year Book 1975, Environment Canada, Ottawa.

⁹Projections indicate under several probable future scenarios a supply/demand problem for high quality farmland within 50 years. Agricultural Land and Urban Centres, Canada Land Inventory Report No. 11, July 1977.

¹⁰Conservation in Canada: A Conspectus, Canadian Forestry Service Publication No. 1340, Ottawa, 1974.

¹¹Forest land comprises land whose primary use is for forestry and capable of producing a total wood volume of 30 m³/ha or more.

¹²Forest Management in Canada, F.L.C. Reed & Associates Ltd., Forest Management Institute Information Reports FMR-X-102/103/104, Ottawa, January 1978.

¹³Science Council of Canada, op. cit.

¹⁴Environmental Quality 1978, Ninth Annual Report of the Council on Environmental Quality, Washington, D.C.

¹⁵Canada's Fisheries: Profile, Prospects and Issues, Discussion Paper, First Ministers' Conference on the Economy, November 1978, Fisheries and Oceans Canada, Ottawa.

¹⁶Science Council of Canada, op. cit.

TABLE 12.1
Land and freshwater area, by region

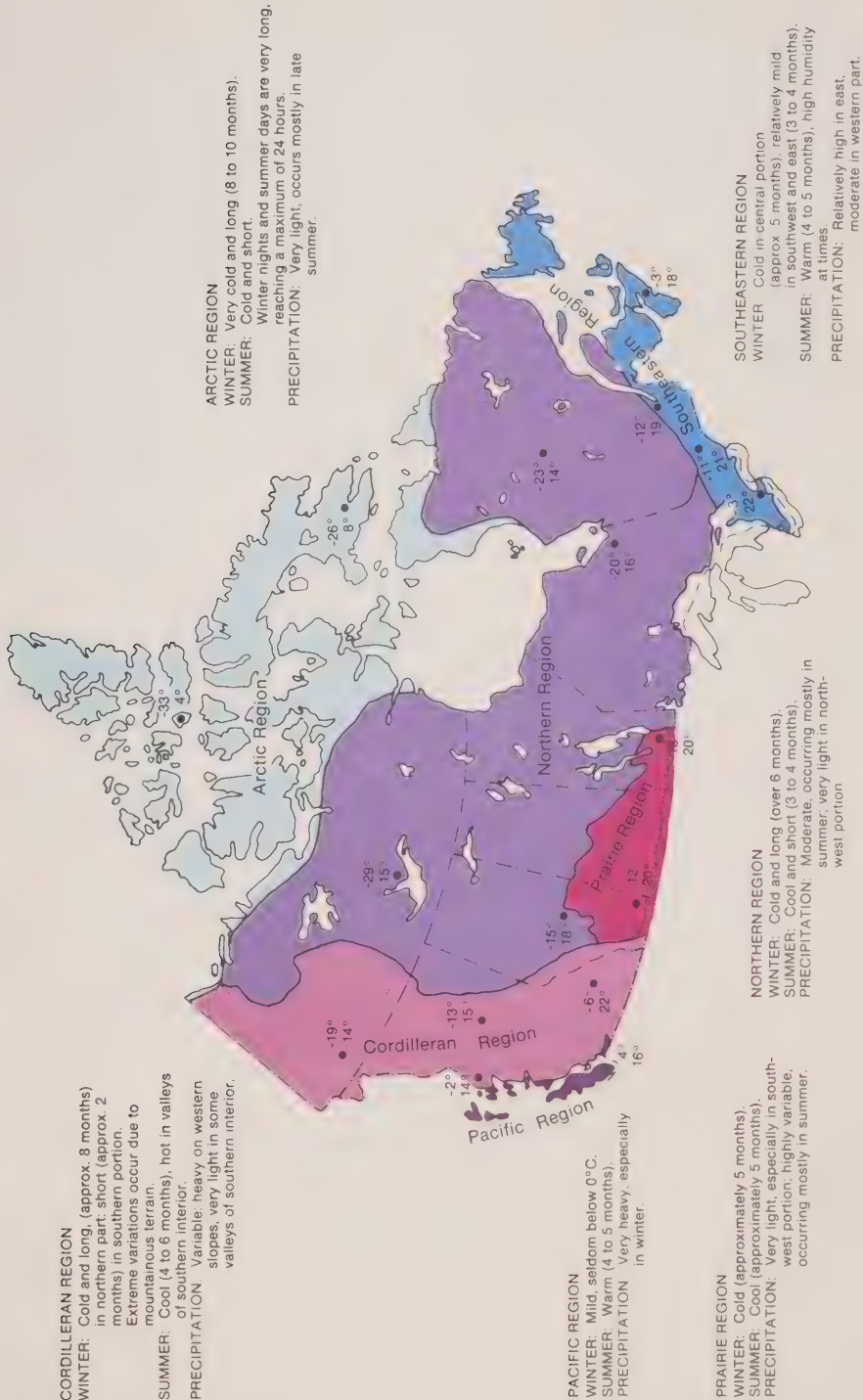
	Fresh water	Wild-land	Agricultural land	Forest land	Other ¹
	'000 km ²				
Atlantic provinces	38	37	12	448	3
Quebec	184	702 ²	41	614	2
Ontario	177	247	67	570	7
Prairie provinces	203	417	586	738	19
British Columbia	18	381	24	521	5
Yukon and N.W.T.	137	3 252	--	526	--
Canada	757	5 036	730	3 417	34

¹Urban and cleared, developed land.

²Other land included in wildland area for Quebec.

Source: Canadian Forestry Statistics 1976, Catalogue 25-202.

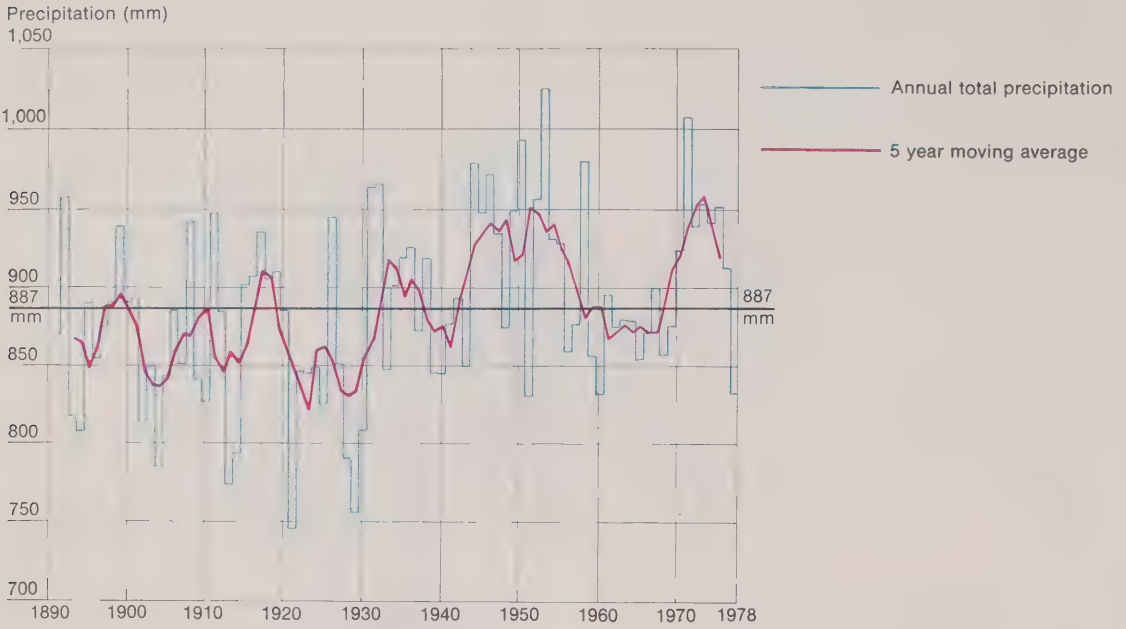
Climatic regions of Canada 1



¹Average daily temperatures at selected weather stations are shown in Celsius degrees for the months of January and July.

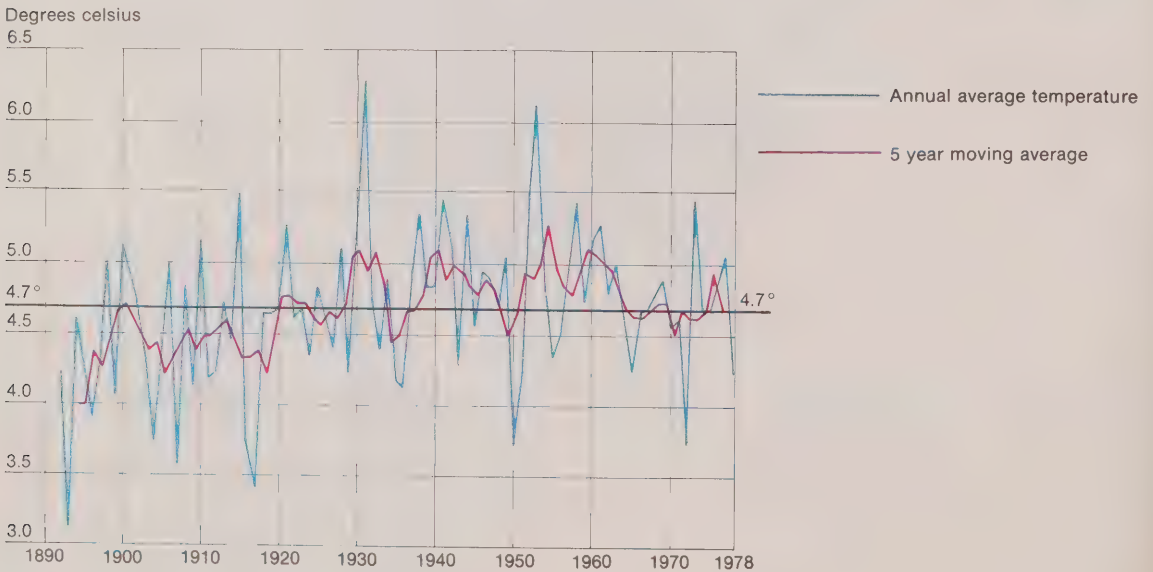
Source: National Geographic Mapping Division, Energy, Mines and Resources.

CHART 12.3
Precipitation trends in Southern Canada, 1890-1978



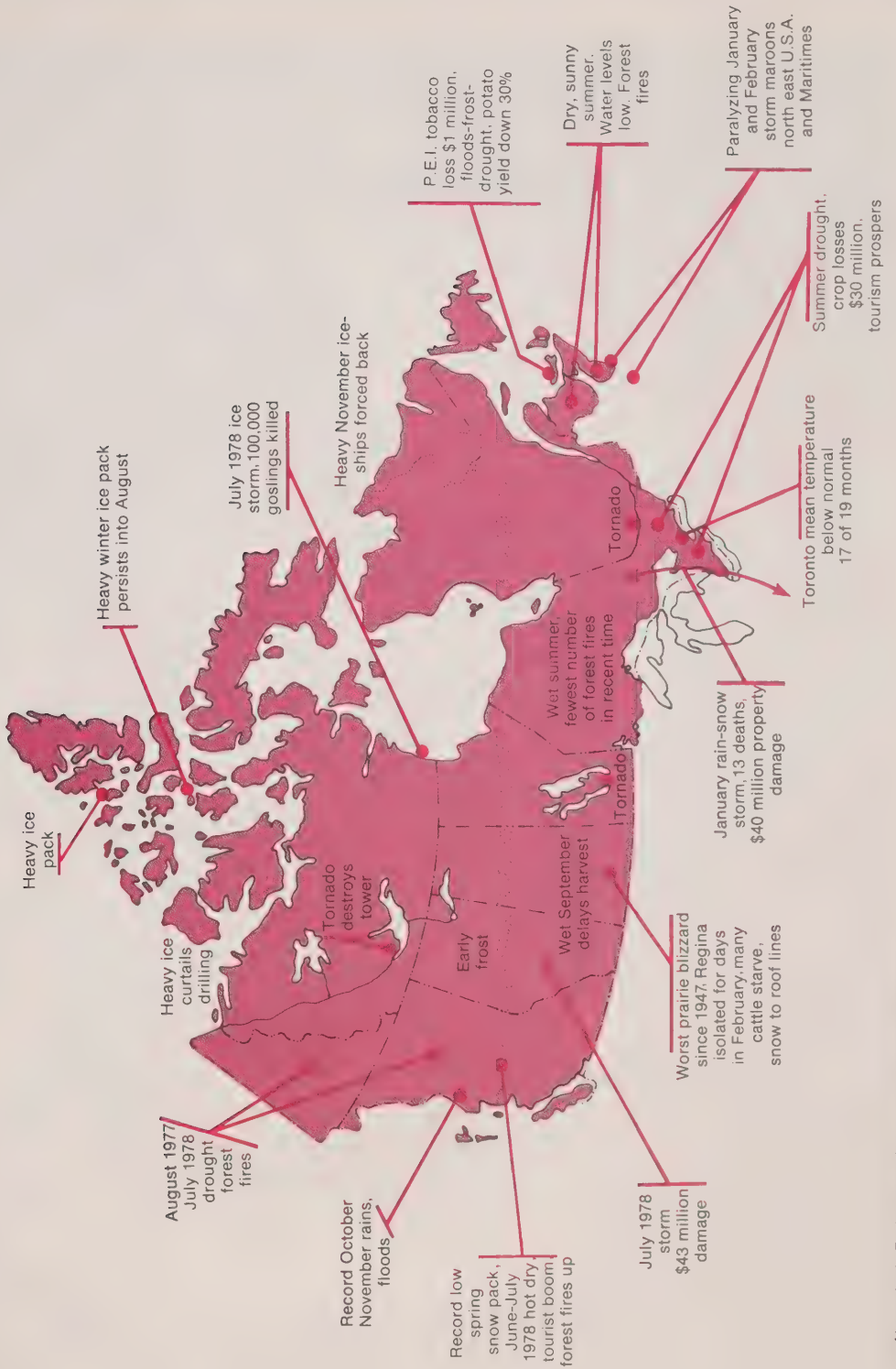
Source: Atmospheric Environment Service, Environment Canada.

CHART 12.4
Temperature trends in Southern Canada, 1890-1978



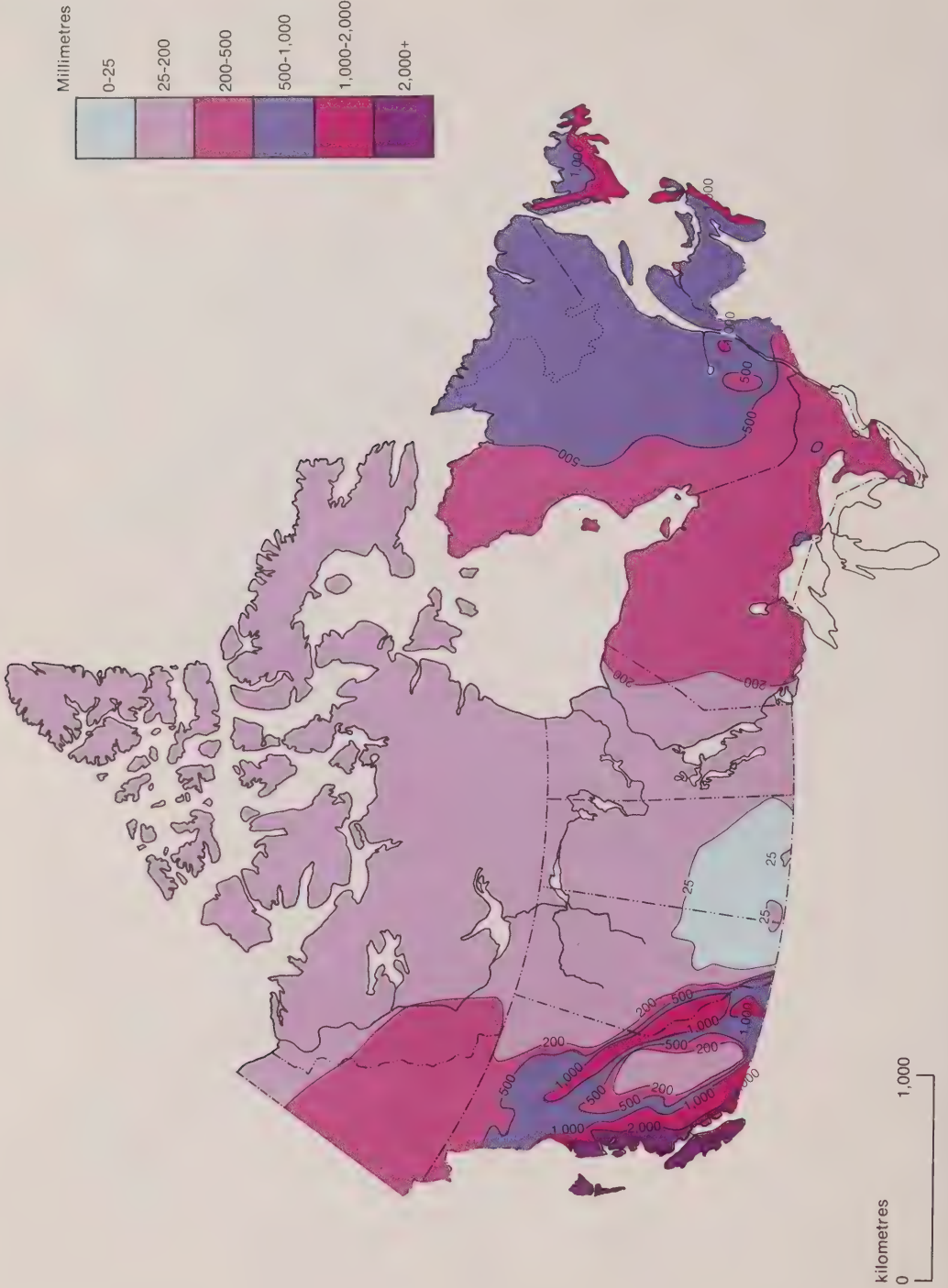
Source: Atmospheric Environment Service, Environment Canada.

MAP 12.5
Major climatic impacts in Canada, 1978



Source: Atmospheric Environment Service, Environment Canada.

MAP 12.6
Average annual surface runoff



MAP 12.7
Canada's potential cropland¹



¹Canada Land Inventory agricultural capability classes 1-3 for all provinces except British Columbia and Newfoundland where classes 1-4 are shown. Pockets outside CLI boundaries may exist but are too small to map.
Source: *Land Capability for Agriculture*, Canada Land Inventory Preliminary Report, April 1976.

TABLE 12.8
Canada's Forest Inventory, 1976

	Best land ¹	All potential cropland ²
	'000 ha	
Calgary	201	996
Chicoutimi	—	87
Edmonton	289	1 260
Halifax	—	296
Hamilton	427	1 070
Kitchener	935	1 625
London	644	1 377
Montreal	20	858
Oshawa	453	689
Ottawa—Hull	90	642
Quebec	—	209
Regina	66	1 437
Saint John	—	118
St. Catharines—Niagara	139	478
St. John's	—	1
Saskatoon	16	1 094
Sudbury	—	55
Thunder Bay	—	87
Toronto	492	943
Vancouver	2	50
Victoria	1	36
Windsor	21	374
Winnipeg	48	1 213
Total ³	2 357	11 981
Canadian total	4 146	45 471
Percentage of Canadian total within 50 miles	57	26

¹ Canada Land Inventory agricultural class 1.

² Canada Land Inventory agricultural classes 1, 2 and 3.

³ This total excludes any double counting due to overlapping 50 mile circles.

Source: *Canada's Cities and Their Surrounding Land Resource*, Canada Land Inventory Report No. 15, 1979, Ottawa.

TABLE 12.9
Canada's Forest Inventory, 1976

	Forest land		Pro- ductive forest land	Wood volume ²	
	Total ¹	Reserved		Soft- wood	Hard- wood
	'000 km ²		'000 000 m ³		
Newfoundland	338	3	85	355	43
Prince Edward Island	3	--	..	4	2
Nova Scotia	41	1	38	151	65
New Brunswick	66	2	61	482	185
Quebec	614	1	373	1 882	845
Ontario	570	--	430	2 078	1 561
Manitoba	257	6	132	222	115
Saskatchewan	140	9	80	208	166
Alberta	341	23	203	940	590
British Columbia	521	39	482	7 124	132
Northwest Territories	307	12	33	..	..
Yukon	219	..	67	73	13
Canada	3 417	96	1 984	13 518	3 717

¹ Only the total forest land column includes forest land for which inventory data are not available, i.e. Quebec, 179 000 km²; Saskatchewan, 8 000 km²; N.W.T., 200 000 km².

² Includes only that wood volume on inventoried, economically accessible productive forest land.

Source: *Canada's Forest Inventory 1976*, Forest Management Institute Information Report FMR-X-116, November 1978. *Canadian Forestry Statistics 1976*, Catalogue 25-202; *Canada Year Book 1976-77*, Catalogue 11-202.

MAP 12.10
Natural vegetation

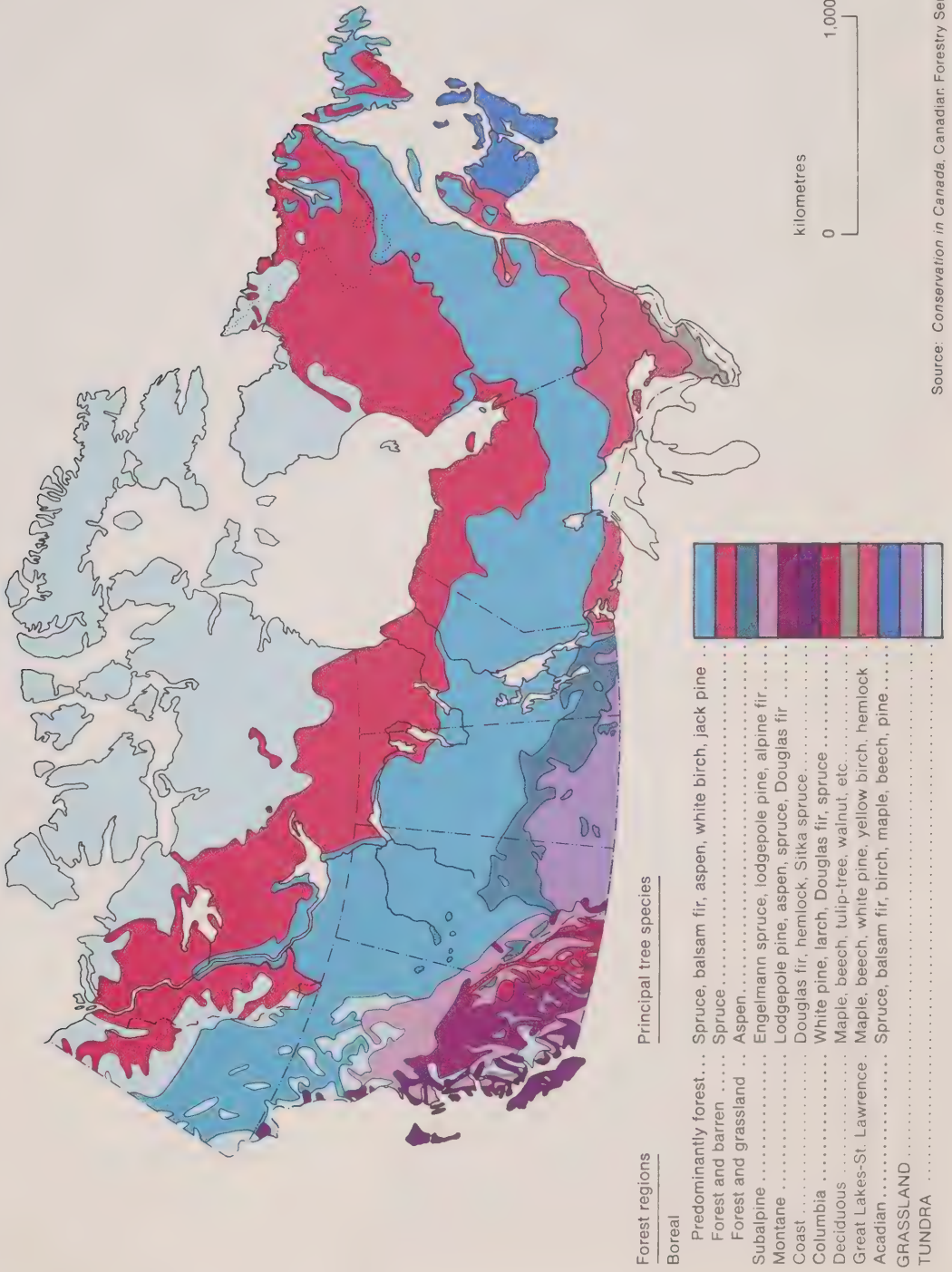


TABLE 12.11
Endangered wildlife in Canada

Mammals	Vertebrates			Fish	Invertebrates (incomplete)
	Birds	Reptiles and amphibians			Molluscs
Vancouver Island marmot <i>Marmota vancouverensis</i>	Eastern peregrine falcon <i>Falco peregrinus anatum</i>	Timber rattlesnake ¹ <i>Crotalus horridus horridus</i>		Longjaw cisco <i>Coregonus alpenae</i>	Yellow lamp mussel ¹ <i>Lampsilis cariosa</i>
Black-tailed prairie dog ¹ <i>Cynomys ludovicianus</i>	Arctic peregrine falcon <i>Falco peregrinus tundrius</i>	Blue racer ¹ <i>Coluber constrictor foxi</i>		Atlantic whitefish <i>Coregonus canadensis</i>	Gatineau tadpole snail <i>Physa gyrina latchfordi</i>
Eastern cougar <i>Felis concolor cougar</i>	Whooping crane <i>Grus americana</i>	Lake Erie water snake <i>Natrix sipedon insularum</i>		Silver chub ¹ <i>Hybopsis storeriana</i>	Mud puppy mussel ¹ <i>Simpsoniconcha ambigua</i>
Black-footed ferret <i>Mustela nigripes</i>	Eskimo curlew <i>Numenius borealis</i>	Pacific gopher snake ¹ <i>Pituophis melanoleucus catenifer</i>		Gravel chub ¹ <i>Hybopsis x-punctata</i>	Banff Springs physa <i>Physa johnsoni</i>
Sea otter <i>Enhydra lutris</i>	Greater prairie chicken <i>Tympanuchus cupido pinnatus</i>	Pigmy short-horned lizard ¹ <i>Phrynosoma douglassi douglassi</i>		Pugnose minnow ¹ <i>Notropis emilae</i>	Tan blossom pearly mussel ¹ <i>Dysnomia torulosa rangiana</i>
Northern kit fox <i>Vulpes velox hebes</i>		Eastern tiger salamander ¹ <i>Ambystoma tigrinum tigrinum</i>		Banff longnose dace <i>Rhinichthys cataractae smithi</i>	Laird Hot Springs physa <i>Physa species (undescribed)</i>
Northern Rocky Mountain wolf <i>Canis lupus irremotus</i>		Small-mouthed salamander ¹ <i>Ambystoma texanum</i>		Black rehorse ¹ <i>Maxostoma duquesnei</i>	Bean villosa ¹ <i>Villosa fabalis</i>
Wood bison <i>Bison bison athabascae</i>		Blanchard's cricket frog ¹ <i>Acris crepitans blanchardi</i>		Shorthead sculpin ¹ <i>Cottus confusus</i>	
Blue whale <i>Balaenoptera musculus</i>				Aurora brook trout <i>Salvelinus fontinalis timagamiensis</i>	
Humpback whale <i>Megaptera novaeangliae</i>					
Right whale <i>Balaena glacialis</i>					
Grey whale <i>Eschrichtius robustus</i>					

¹ Peripheral. "Peripheral" refers to a taxon, the occurrence of which is at the edge of its natural range and which is rare, threatened or endangered within most or all of its Canadian range, although not in its range as a whole.

Source: *Endangered Wildlife in Canada*, Canadian Wildlife Federation, circa 1977.



MAP 12.12

Major Atlantic and Pacific Fishing Banks

TABLE 12.13
Canada's sea fisheries catch, 1977

	Live weight
	<i>tonnes</i>
Atlantic provinces and Quebec	
Groundfish	
Cod	237 622
Small flatfish	111 081
Redfish	66 594
Haddock	26 832
Pollock	25 948
Greenland turbot	22 908
Hake	11 635
Other	12 735
Pelagic and estuarial fish	
Herring	228 993
Mackerel	22 511
Capelin	13 860
Alewife	7 698
Tuna	6 327
Other	7 639
Molluscs and crustaceans	
Scallop	116 849
Squid	38 544
Lobster	17 833
Queen crab	14 219
Shrimp and prawn	8 092
Other	5 154
Total fish and invertebrates	1 003 074
Other items	
Irish moss	22 124
Other marine plants	12 527
Seal	128,054
	<i>(number)</i>
British Columbia	
Groundfish	
Cod	10 082
Redfish	7 905
Halibut	5 334
Other	6 545
Pelagic and estuarial fish	
Herring	97 172
Salmon	65 582
Other	3 479
Molluscs and crustaceans	
All	8 722
Total fish and invertebrates	204 821

Source: *Annual Statistical Review of Canadian Fisheries*, Fisheries and Environment Canada, 1977.

The Use of Energy

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The Use of Energy

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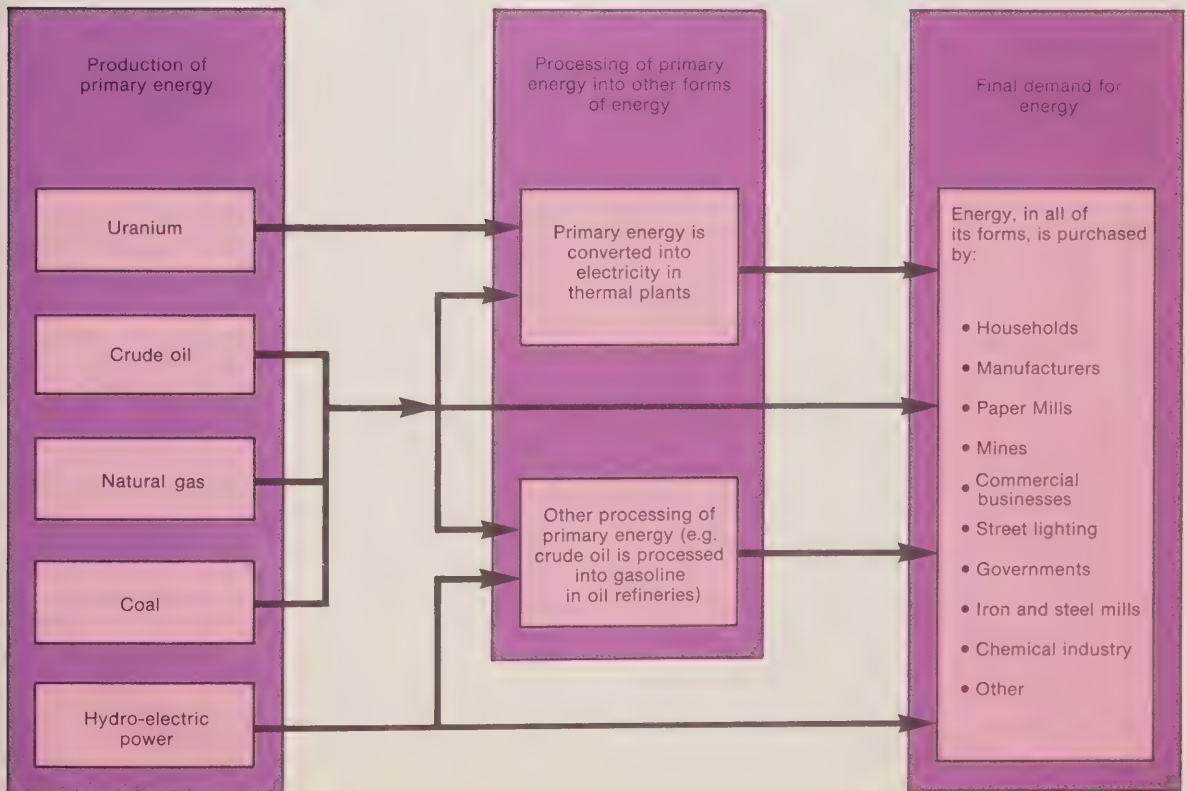
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The 1973 petroleum embargo, rising prices, brownouts and recent gasoline shortages in the United States herald an era in which we can no longer take abundant and cheap energy for granted.

This chapter introduces the concern with energy at the household level by providing a picture of present and past household energy consumption. A brief description of our present and past overall energy use is provided to add the necessary background for consideration of household energy use.

This chapter will provide some assistance in answering such questions as: How much of our lifestyle is dependent upon high energy consumption? How much energy do we use at home or going for a drive? How much energy do we really need? How much can we afford? And how did we come to be in the situation where phrases like "live better electrically" sound extravagant?

During the last several decades our homes have become heavily dependent on energy for space and water heating, lighting and refrigeration. Leisure activities have become increasingly oriented to energy consumption—travelling to distant places, vacationing in motor homes, snowmobiling, playing electronic games, and watching television. Meanwhile, factories are more automated than a generation ago while many streets and roads have become endless lines of commercial outlets selling everything from hamburgers, fried chicken and Chinese food, to automobiles and house boats.



Bringing about this transformation of our lifestyle has required vast amounts of energy. Beyond the obvious consumption habits, Canadians consume great amounts of energy in hidden ways. When we purchase an automobile for personal use, we are also purchasing the energy required to produce the steel, aluminum, plastic, and other components of the finished product. In buying potatoes, we are buying the gasoline or diesel fuel required to run the tractors, trains and trucks that are used to produce the potatoes and bring them to neighbourhood stores. Demands for energy are not always straight-forward. Many home appliances use electricity, but much electricity is generated by means of fossil fuels—coal, natural gas and petroleum—and as a result of using electricity we may be indirectly consuming other, non-renewable resources.

Supplies of coal, crude oil, natural gas and uranium are finite or non-renewable. Yet, despite rising costs and efforts at conservation in recent years, Canadian consumption of energy has continued to increase, although the rate of increase has slowed since the petroleum embargo of 1973. Canadians continue to purchase new energy-consuming devices and gadgets—colour television sets, food blenders, microwave ovens, garbage compactors and humidifiers.

The energy production industry is also a heavy consumer of energy. The mining of coal and uranium, the pumping of crude oil and the transportation of these energy sources to market require the use of energy. Energy is also expended in the search for new sources of energy and for conducting the research for energy alternatives.

In many ways, the consumption of energy has progressed hand-in-hand with the evolution of technology. Increases in human productivity and efficiency have typically resulted from the increased application of energy to machines, production lines and vehicles. In the process, the nature of human work has changed. Previously, effort and strength were the principal ingredients of production. Now, virtually every task has an associated energy-consuming dimension that has altered the physical requirements of work—strong and husky men rarely have an advantage in mechanized workplaces.

The application of energy to tasks has not been restricted to the home and the place of work. Consumers purchase services and make use of facilities that require energy, including hairstyling, dry cleaning, bowling alleys, curling rinks, movie houses, taxis and escalators.

Electricity

The generation of electricity increased rapidly in the period 1950 to 1976 from 55.5 billion kilowatt hours to 294.0 billion kilowatt hours, an increase of about 430%. Electricity made up about 16% of the energy consumed in 1976 (*Table 13.2*). Most sources of hydro power have now been exploited or are in the process of being exploited. Thus, increased reliance is now being placed on thermal sources to produce electricity for Canadian farms, homes, factories and commercial activities (*Chart 13.6*). Thermal sources of electricity are those which burn fuel to produce steam for turbines that generate electricity. The conventional sources of thermal energy have been coal, natural gas and crude oil, but in recent years, increased attention has been given to the use of nuclear energy as a means of driving steam turbines.

The fact that electrical power can be derived from a number of different energy sources and used in place of other energy materials makes it a flexible and reliable energy source for an uncertain future. Steam-generated electricity

may become even more important if the consumption of electricity continues its historical increase.

The price index for household consumption of electricity has increased since 1967 (*Chart 13.7*), but recent price increases do not seem to have induced consumers to drastically reduce their purchases of electricity.

Crude Oil

Canadian production of crude oil increased from less than 50 million barrels in 1950 to over 500 million barrels by 1975 although production fell to 460 million barrels in 1977 (*Table 13.9*). At the same time, Canadian consumption of crude oil rose from 130 million barrels in 1951 to almost 600 million barrels by 1977.

The 1973 embargo on oil to a number of western industrialized nations changed perceptions of the energy situation. People began to talk about an energy crisis because it became clear that we could no longer have as much fuel as we could use—when and where we wanted it—and this posed a threat to a lifestyle based on plentiful energy.

The most immediate effect of the recognition of the relative scarcity of energy has been a significant rise in its value. In 1977, a barrel of imported oil cost almost six times as much as in 1970,¹ and today the cost is even higher. This has had serious consequences for nations that import large quantities of oil, affecting the balance of payments and generating inflation as prices have risen to take added energy costs into account. The critical importance of these increases becomes clear when considered in conjunction with the fact that in 1976, 53.6% of the energy consumed in Canada came from oil and its byproducts² (*Table 13.2* and *Chart 13.3*).

In 1977, proven reserves in Canada stood at 6.0 billion barrels,³ however, assuming a consumption rate, equal to that of 1977 these reserves would be depleted by the mid-1980s. In 1975, however, The Geological Survey of Canada estimated that there was a 90% likelihood of the existence of 20 billion barrels plus a 50% probability of another 28 billion barrels.

Oil sands and heavy oil resources offer potential large sources of oil for the future. However, oil in these deposits is costly and difficult to recover and requires extensive upgrading before refining. Only 10% to 20% of estimated deposits may be technically recoverable in the next 50 years.

It is difficult to say just how much of the crude oil consumed in Canada is used in activities associated with Canadian households. The information available on commodities such as gasoline includes gasoline that is used for work and business purposes.

In any case, it is to be expected that domestic consumption of crude oil will ease somewhat in the years ahead. Some electric utilities and industrial establishments are switching from the use of crude oil to coal. Furthermore, increased reliance is being placed on the use of uranium for electrical generation as opposed to the use of crude oil. The mandated increases in the efficiency of automobile operation through higher miles per gallon standards should lessen the rate of increase in the demand for gasoline.

Natural Gas

Over the last several decades, the changes in the consumption and production of natural gas have been most dramatic. In 1950, Canadian production of natural gas was 67.8 billion cubic feet. None was exported and 3.3 billion cubic feet were

imported. By 1975, production of natural gas had increased to 2,446.4 billion cubic feet (a 3,500% increase), exports to 949.5 billion cubic feet, imports to 10.4 billion cubic feet, and domestic consumption to 1,507.3 billion cubic feet (a 2,000% increase). Natural gas accounted for about 26% of the energy consumed in 1976 (*Table 13.2*).

The 1977 estimate of proven natural gas reserves was 71.1 trillion cubic feet, while natural gas production for the year was 2.6 trillion cubic feet, of which 1.0 trillion were exported.⁴ In 1975, Geological Survey figures estimated, with a 90% probability, that 183 trillion cubic feet of gas existed.⁵

While overall energy production generally increased, natural gas became an important new source of energy for heating farms and homes, for producing electricity, and for helping to fuel the industrial and commercial sectors of the Canadian economy (*Charts 13.3* and *13.13*). It is likely to play an increasingly important role in Canada's energy future because it exists in substantial quantities and it has many of the same characteristics that make oil a preferred energy source.

Coal

Coal production declined through the 1950s, was stable in the 1960s and has been increasing in the 1970s (*Table 13.9*). In 1976, coal and its byproducts provided just under 5% of total energy consumed. Coal alone accounted for less than 1% of total energy consumption in 1976, down from 16% in 1958 and from more than 50% in 1948 (*Table 13.2*). Production in 1977 stood at 31.4 million tons while 34.7 million tons were consumed in Canada. In addition there are enormous reserves of coal which the most conservative estimate places at 28.9 billion tons, with another 177 billion tons possible.⁶

The decrease in the production of coal during the 1950s accompanied the substitution of fuel oil and natural gas for home heating. Since 1970, the increase in consumption can be largely attributed to the Japanese demand for coal, and to the fact that during the 1970s, utilities have been switching back to coal as a result of the substantial increase in the price of petroleum and the gradual realization that the domestic supplies of crude oil and natural gas would not likely continue to grow. As a result of the bitter medicine of higher energy costs, coal now seems to be a more attractive energy resource than has been the case for several decades.

Coal is not, however, without its attendant problems. It is more difficult to transport than oil, gas or electricity, it is dirty to handle, produces fly-ash when burned and leaves a residue that has to be disposed of after burning.

Uranium

In 1950, nuclear reactors were not used to generate electricity for sale. In 1977, nuclear energy was used to produce about 7% of Canada's electrical energy. If current and planned nuclear reactors are completed on schedule, about 15% of Canada's electrical energy will be produced with uranium by 1990.

The Consolidated Energy Picture

During the 1970s Canada has demanded very large amounts of convenient energy derived from only a few power sources. Because power had appeared so plentiful in the past, technology was developed to consume it almost as quickly as it became available and the lifestyle made possible by inexpensive power was promoted by governments, manufacturers, and utilities.

There are, however, significant differences in energy use by different sectors in the economy, and by regions, and changes taking place in either the amounts or types of fuels available will probably affect some activities and some parts of the country more than others. As *Table 13.4* indicates, in 1976, industry was the largest consumer of electricity, natural gas, coal and total energy. Transportation ranked second in total energy consumption and used more motor gasoline, diesel fuel and aviation fuel than other sectors. The domestic and farm sector ranked third in total energy consumption, but led in consumption of light fuel oil and also consumed large amounts of natural gas. The table also shows the great dependence of the transport sector on petroleum products and the predominance of oil and natural gas use in the domestic and farm sectors. In all sectors, petroleum products account for at least one third of all energy consumed.

Table 13.11 shows the extent to which provinces use more or less of certain fuels per person than Canada as a whole. The Canadian average is given a value of one in all cases; thus, the value of 4.18 for Alberta's use of natural gas indicates a much greater use of this fuel per person than in the country as a whole.

The share indexes also indicate a greater than national reliance on electricity in Quebec, British Columbia, and Yukon and the Northwest Territories. In the Atlantic provinces more than 75% of total consumption in 1977⁷ was in the form of petroleum products and this was also reflected in the share indexes in *Table 13.11*. That most of this was imported may be cause for concern in the future. Ontario was the largest overall consumer of energy (*Table 13.10*). Alberta used the most energy per person.

It appears that somehow we must reduce the upward trend in energy consumption. Faced with this fact, two companion courses of action seem obvious for the next several decades—a continuing stress on energy conservation and the search for energy alternatives.

Energy conservation can be brought about in several ways. Declining supplies of the non-renewable energy resources will lead to price increases over time. At the same time, it can be anticipated that future government policies will be designed to continue the trend toward energy conservation. Present government policies have been directed toward building code standards for thermal efficiency; a grants program for home owners who insulate their residences; increased excise taxes on heavy automobiles; mandatory fuel efficiency standards for automobiles; imposition of a gasoline excise tax of 10 cents per gallon in 1975; as well as an excise tax of \$100 on new automobile air conditioners, etc.

The result will be increased energy conservation for which the impact has been well summarized:

... If we have an average growth rate in energy consumption of 2% between now and 1990 instead of a 4% rate, the difference is equivalent to the output of six Syncrude plants plus 80% of the expected annual Canadian output of the Mackenzie Valley pipeline plus 15 Pickering-size nuclear power plants plus 10 million tons of bituminous coal. An amount worth saving!⁸

Trends in Household Work: Labour Saving and Energy Consuming

In the last three decades there has been a major change in the facilities characteristic of most Canadian homes. In 1949, about 15% of Canadian households did not have electricity while in 1952, about 36% of Canadian households did not have both hot and cold piped water; 31% did not have their own flush toilet; and about 38% did not have their own

bath or shower. Now, perhaps only 2% of all Canadian households do not have these amenities and most of us take them for granted (*Table 13.12*).

Space Heating

Not too many years ago, kitchens tended to be larger than those of today to accommodate a wood or coal cookstove. The typical kitchen, as the warmest place in the residence, had to be large enough for such activities as studying and home work, reading the newspaper, playing games, and many of the daily activities that are now scattered throughout the modern, centrally heated home.

In the early 1950s many homes did have central heating. But whether centrally heated or not, the fuel source was usually coal, coke⁹ or wood which had to be delivered and stored. Now, electric thermostats control room heat in many Canadian homes. Fuel oil and natural gas are clean burning fuels with automatic metering systems. Since it has become conventional to have central heating in our homes, all rooms of a dwelling unit are usually heated, and, as might be expected, energy consumption for space heating has increased considerably over those earlier years when only a few rooms were heated. Since coal, coke or wood are rarely used for space heating now, the household work that went with their use has declined considerably. Furnaces and stoves no longer have to be stoked with fuel, and ashes need not be removed. There were employment declines associated with the fall in production and home distribution of these fuels, but some of these have been offset by employment derived from the production, processing and delivery of natural gas and fuel oil to the homes of today.

Cooking

The modern gas or electric range has virtually eliminated the wood or coal cookstove. Almost instantly, heat can be applied to a cook pot and regulated automatically. Many modern ranges have automatic timing devices for turning the oven on and off, and to ease household work even further, many ranges have either continuous or self-cleaning ovens.

Not many years ago the fire had to be fed and stimulated into life for the tasks of cooking and baking. The heat spread all over the kitchen as well as heating the food and baking the bread. In summers the heat could be unbearable. So, many homes had "summer kitchens" or kitchens more or less removed from the house to keep the heat out of the bedrooms and other rooms during the summer.

It must also be recognized that the very role of the modern day range is under an array of challenges. Many specialized cooking appliances are now competing with the gas or electric range—microwave ovens, slow cookers, electric skillets, and electric kettles are but a few of the many examples. It should also be noted that Canadians are eating about one third of their meals outside the home in restaurants. It is projected that we will soon be eating about one half of our meals away from home.

Perhaps we ought to ask ourselves the following questions. As we eat more of our meals away from home, how important will be the task of cooking, and how important will be the necessity of having a four-burner range in every kitchen? Or conversely, with rising energy costs will we be able to continue to eat away from home to the extent we do now? What is clear, however, is that the total household work associated with cooking has declined considerably over the last generation, and given some of the current trends, it is conceivable that Canadian homes in another generation will have a very different kitchen design.

Refrigeration

In 1947 only three out of 10 households in Canada had an electric refrigerator. By 1953 this had risen to almost seven out of 10, and now, virtually every Canadian household has at least one refrigerator (*Table 13.15*).

Before the refrigerator, perishables were preserved by means of an ice box, usually a basic wooden box. It was not suitable for preserving frozen foods, and even as a cooling box for perishables, it had many limitations. From an energy perspective, the ice box itself used no energy. Heavy reliance was placed on nature. The ice was cut from lakes and rivers during the winter by hand and then stored in ice warehouses for future use in the warm weather. So, the refrigerator increased the consumption of energy and displaced a great deal of labour—that associated with cutting, storing and delivering ice.

The refrigerator has eliminated the necessity of daily shopping trips for meat, milk and similar perishables, and since most refrigerators have a freezer compartment, and many homes a separate freezer, weekly or even less frequent grocery shopping trips are now possible. Clearly, the refrigerator and freezer have increased the home consumption of energy but reduced the amount of household labour associated with their predecessor—emptying the drip pan under the ice box, daily shopping trips, and the labour saved in being able to make use of frozen foods.

Doing the Laundry

Electrification played an important role in transforming laundry into a simpler task compared to the use of washboards and hand-operated washing machines. The latter used human power to move the agitator and to turn the crank that powered the wringer. The first technological advance to laundry chores was the addition of an electric motor to its hand-operated predecessor. Even then, a considerable amount of work was involved.

Before the introduction of gas/electric clothes dryers, drying the laundry meant hanging it out to dry—or if the weather was inclement, hanging it all around the house. Now, the combination of automatic washing machines and clothes dryers make quicker work of "washday" chores. Add to this the convenience of permanent-press fabrics, and much of the traditional household laundry work has been eliminated.

This is not to ignore the fact that today people still hand wash some garments, hang clothes out to dry and iron their clothes. But a great deal of work of this sort has been made unnecessary by the use of machines and of no-iron fabrics. Traditional laundry work has been transformed at the expense of increased energy consumption.

Communications

Many changes have occurred in household communications in the last generation. In the late 1940s between 90 and 95% of Canadian households possessed at least one radio. This situation has not changed much except that now it is fairly common for households to have more than one radio (*Table 13.16*).

In the late 1940s, the television industry was in its infancy. Few householders owned a single television set. By 1953, only about one of every 10 households had a television set but by 1960 this had risen to about 81%. Now, almost every household has at least one television set (97%), 34% own two or more television sets, and about 68% have at least one colour set.

Today we see other possibilities for the future. The widespread popularity of the General Radio Service licence

and the availability of these "CB" radios at a relatively modest price have enabled many Canadians to acquire a mobile two-way communications system. This system will undoubtedly open new and unforeseen opportunities for inter-household and other communications in the future. The possible embrace of home computers, coupled with developments in fibre optics may also herald a communications revolution rivaling the birth of radio or television.

Each of the communications systems referred to above includes the added dimension of energy consumption. Nevertheless, the consumption of energy may not always be upwards in the communications field. The introduction of transistors, solid state circuitry, chips, and their successors have reduced the amount of energy consumption relative to the vacuum tubes of yesterday, and as a result the rate of growth of energy consumption for communications will be restrained by the more efficient use of energy and refined technology. Similarly, although telephones and CB radios may require energy, they may be less costly in terms of both energy and dollars, than, say, the use of automobiles, buses and aircraft to bring people together.

Technology in the Home

The above reflections on the historical perspective of work in the home have been chosen to illustrate the increased mechanization and resulting change in the character of household work. There has been a veritable revolution in household work in the last 30-40 years. In large measure, electricity and metered fuels for space and water heating have permitted this transformation. By using more energy and new tools, household workers have been able to increase their productivity and a certain amount of initial unemployment was an inevitable spin-off. The use of paid household workers (maids, butlers, cooks, and so on) most likely decreased because of labour saving devices. In other households, the technological revolution in household work meant that increased amounts of free time became available.

It should also be noted that changes in household technology and work patterns have been accompanied by a major increase in the labour force participation of women. This is discussed in more detail in chapters 1, 2 and 5.

In each of the discussions in this section on household work, the distinguishing characteristic was that of energy consumption. One of the largest energy consumers in the home is the hot water heater.¹⁰ Other major home energy consumers include hair dryers, toasters and toaster ovens, crock pots, heat tables, coffee percolators, electric hand tools, food blenders, electric garage door openers, humidifiers and dehumidifiers, air conditioners, steam irons, cassette and tape players, garbage compactors, can openers, home freezers, electric floor polishers, electric vacuum cleaners and electronic calculators. Twenty-five years ago, many of these were either not yet invented or much less common in the home.

The above comments on household work have been almost exclusively presented in the context of indoor work. Equally significant changes have occurred with outdoor work as well. Power lawn mowers (gas or electric), snow blowers, electric hedge trimmers, and electric or gas barbecues are now common outdoor equipment.

The Next Generation in Household Technology

Just what kinds of changes are likely to occur in the next 25 years? Even the most casual glances at the consumer goods markets and recent trends in other areas related to housing

indicate that substantial changes are already under way. Within about five years during the 1970s, the price of simple electronic calculators declined in price from \$100 and over to \$10 and under and home computers are being sold in department stores.

Many of today's appliances and gadgets were either unavailable or not widely owned 25 years ago. Similar examples would seem to exist today. Burglar alarms, smoke detectors, hard-wired intercom systems, and heated swimming pools may become far more prevalent over the next 25 years than they are today.

With regard to communications, we might ponder the following: Has the potential of the CB radio been realized? Is it conceivable that existing cable TV systems could acquire the promised but unrealized capability for face-to-face communications? Will the telephone be a communication device for museums—or will it become an even more powerful instrument through its inherent potential for linking the home to large computers for many tasks as yet undreamed of?

While a great deal of emphasis has been placed on the increased use of energy in the home and in home-related activities, it is also possible to speculate about the possibilities for producing energy in the home. Solar collectors and windmills are being installed by some home owners. Will these be superseded by other devices for producing energy in the decades ahead? Will there be other changes in the production and consumption of energy in the future? And will these changes make our lives easier or more difficult than they are today?

Statisticians will only measure the progression of these changes. It is far easier to measure what is and to describe what was than it is to speculate on what will be. The fullness of the latter task shall be left to the reader.

Footnotes

¹Energy Update, 1977, *Report E178-2, Energy, Mines and Resources Canada, Ottawa, 1978.*

²*This does not include oil used to produce electricity.*

³Energy in Canada, 1978, *Energy, Mines and Resources Canada, Ottawa.*

⁴Energy Update, 1977, *Report E178-2, Energy, Mines and Resources Canada, Ottawa, 1978.*

⁵Energy in Canada, 1978, *Energy, Mines and Resources Canada, Ottawa.*

⁶Ibid

⁷Ibid.

⁸Ian E. Efford, "The Role of Energy Conservation in Canada's Energy Strategy," *The Canadian Mining and Metallurgical Bulletin, December 1977.*

⁹*If most of the gas is removed from coal, the result is coke. Two characteristics of coke are that it burns with intense heat and is almost smokeless.*

¹⁰*In a 1977 report, Energy, Mines and Resources Canada assumed that consumption of energy in households for space heating and water heating were, respectively, 70% and 18% of the total. Energy Conservation in Canada: Programs and Perspectives, Report EP77-7, 1977.*

TABLE 13.1
Heat content per person of domestically available fuels
and electricity, 1870-1975¹

	Domestic production of primary energy	Domestic production of energy derived from renewable sources	Imports less exports	Heat content of domestically available fuel and electricity
	<i>millions of Btu's per person</i>			
1870	54	48	-2	52
1890	61	44	11	72
1900	63	35	14	77
1920	75	24	60	135
1929	71	27	72	143
1939	72	28	55	127
1948	67	23	108	175
1958	122	26	60	172
1961	151	26	35	186
1966	205	26	24	229
1971	304	28	-30	274
1973	374	32	-75	299
1974	363	..	-55	308
1975	331	..	-35	296

¹Maximum potential heat content of domestically available energy is defined as the simple thermal equivalents of the total production of primary energy (including those of coal, liquefied petroleum gases, natural gas, wood, hydro and nuclear electricity and of crude oil, the latter counted at 5,803 million Btu's per barrel) plus the thermal equivalent of total primary and secondary energy imports less the thermal equivalent of total primary and secondary energy exports.

Source: Urquhart, M.C., and Buckley, K.A.H., eds., *Historical Statistics of Canada*, Toronto, Macmillan of Canada, 1965; *Canadian Mineral Statistics, 1886-1956*, Catalogue 26-501; *General Review of the Mining Industry*, Catalogue 26-201; *Exports by Commodities*, Catalogue 65-004; *Imports by Commodities*, Catalogue 65-007; *Detailed Energy Supply and Demand in Canada*, Catalogues 57-207 and 57-505; *Energy Sources in Canada, Commodity Accounts for 1948 and 1952*, Catalogue 13-506; and *Energy Sources in Canada, Commodity Accounts for 1926, 1929, 1933 and 1939*, Catalogue 13-507.

TABLE 13.2
Percentage of energy consumed in various forms¹, 1870-1976

	1870	1900	1926	1948	1958	1972	1976
				<i>per cent</i>			
Aviation gasoline	...	...	...	...	0.7	0.1	0.1
Aviation turbo fuel	...	...	...	...	0.8	1.8	2.1
Still gas	...	...	...	0.3	2.0	1.9	2.0
Liquefied petroleum gases	...	...	...	0.2	0.6	1.3	1.5
Coke oven gas	...	...	1.4	1.8	0.9	0.7	0.8
Coke	...	...	4.1	2.5	3.2	2.6	2.5
Petroleum coke	...	...	0.1	0.1	0.7	0.3	0.7
Motor gasoline	...	...	4.0 ²	10.9 ²	17.7	17.8	19.1
Electricity	...	0.3	3.2	7.7	11.6	14.3	15.8
Natural gas	...	0.6	1.6 ³	3.1	11.1	25.6	26.3
Light fuel oil	...	...	...	...	11.1	11.9	9.9
Heavy fuel oil	...	...	...	...	11.1	12.3	10.0
Diesel oil	...	...	5.4	14.0	4.6	5.8	6.8
Kerosene	0.8 ⁴	1.1 ⁴	...	...	3.6	1.9	1.4
Coal and coal briquettes	6.0 ⁵	52.5 ⁵	63.4	52.4	15.8	1.1	0.6
Wood	93.2	45.5	16.8	7.0	4.5	0.6	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹Based on heat content of fuel or electricity actually consumed. For example, electric energy derived both from coal and hydro power is shown as electricity, with that derived from coal included on the basis of heat content of electricity generated, not on the basis of heat content of coal consumed in generation. Figures for 1870 and 1900 are actually the fractions of total available domestic heat content derived from the primary sources of wood, coal, crude oil, hydro power and natural gas and should be regarded as the limits set for the heat content of various possible derivatives.

²Includes naphtha.

³Includes manufactured gas.

⁴Based on heat content of domestic supply of crude oil. However, it is known that all crude oil prior to about 1910 was refined into kerosene, with other distillates rejected. (See Davis Commission Report on Canadian Energy Prospects, 1957.)

⁵A substantial portion of early use of coal involved production of coal oil and gas for street lighting.

Source: Urquhart, M.C., and Buckley, K.A.H., eds., *Historical Statistics of Canada*, Toronto, Macmillan of Canada, 1965; *Energy Sources in Canada, Commodity Accounts for 1948 and 1952*, Catalogue 13-506; *Energy Sources in Canada, Commodity Accounts for 1926, 1929, 1933 and 1939*, Catalogue 13-507; and *Detailed Energy Supply in Canada, 1958-1969*, Catalogue 57-207.

CHART 13.3
Distribution of energy consumption in various sectors of the economy by type,
1958 and 1976



Source: *Detailed Energy Supply and Demand in Canada, Catalogue 57-207, 1976*; and *Detailed Energy Supply and Demand in Canada, 1958-1969, Catalogue 57-505*.

TABLE 13.4
Total consumption of energy in various sectors of the economy by fuel type, 1976

	Coal and its derivatives ¹	Motor gasoline	Diesel fuel oil	Light fuel oil	Heavy fuel oil	Aviation gasoline and turbo fuel	Other petroleum derivatives ²	Natural gas	Electricity	Total
Energy supply industry	0.5	1.1	3.0	1.0	000,000,000,000's Btu		140.2	302.1	101.2	636.4
Transportation:										
Road	—	1,157.3	133.9	—	—	—	—	—	—	1,291.2
Rail	0.9	—	82.4	—	—	—	—	—	—	83.3
Air	—	—	—	—	—	137.4	—	—	—	137.4
Marine ³	—	—	31.3	—	60.6	—	—	—	—	91.9
Total transportation	0.9	1,157.3	247.6	—	60.6	137.4	—	—	—	1,603.8
Domestic and farm	3.9	—	55.2	428.1	22.1	—	137.0 ⁴	312.8	241.6	1,200.7
Commercial ⁵	—	—	20.4	117.0	91.8	—	18.7	313.8	243.6	805.3
Industrial	225.5	—	88.5	54.3	349.2	—	19.5	631.2	385.4	1,753.6
Losses and adjustments	8.9	12.9	3.2	7.1	0.1	0.4	-2.0	53.8	—	84.4
Total	239.2	1,171.3	417.9	607.5	611.0	137.9	313.4	1,613.7	971.8	6,084.2

¹Includes coal, coke and coke oven gas.

²Includes liquefied petroleum gases, crude oil, still gas, kerosene and petroleum coke.

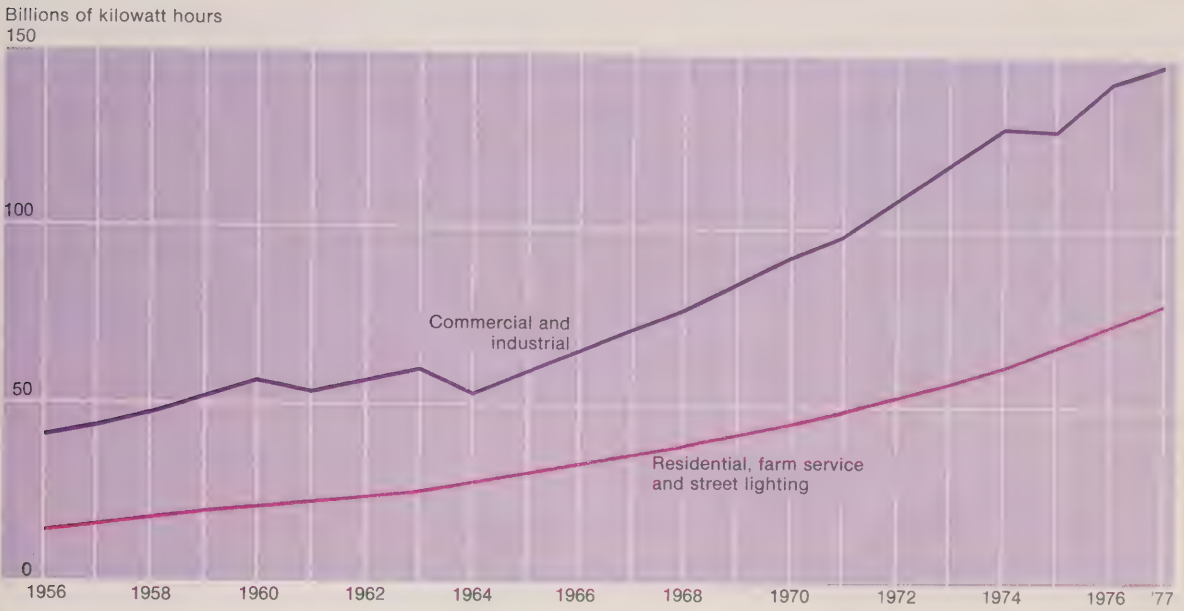
³Does not include Canadian Armed Forces' equipment.

⁴Includes an estimate of 24.7 Btu's generated from wood.

⁵Includes government.

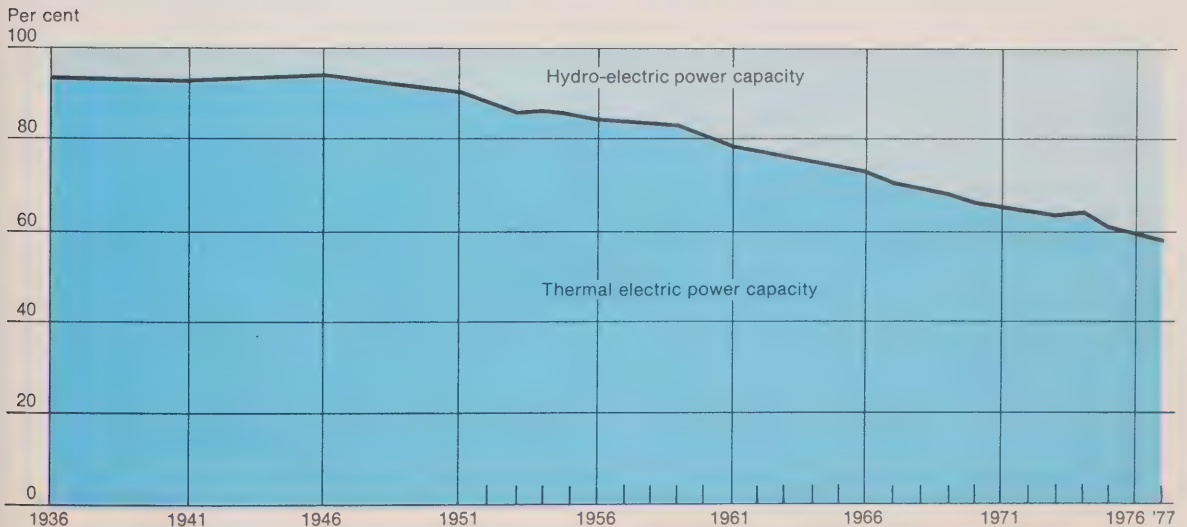
Source: *Detailed Energy Supply and Demand in Canada, Catalogue 57-207, 1976*.

CHART 13.5
Sales of electricity for residential, farm service and street lighting, and commercial and industrial uses, 1956-77



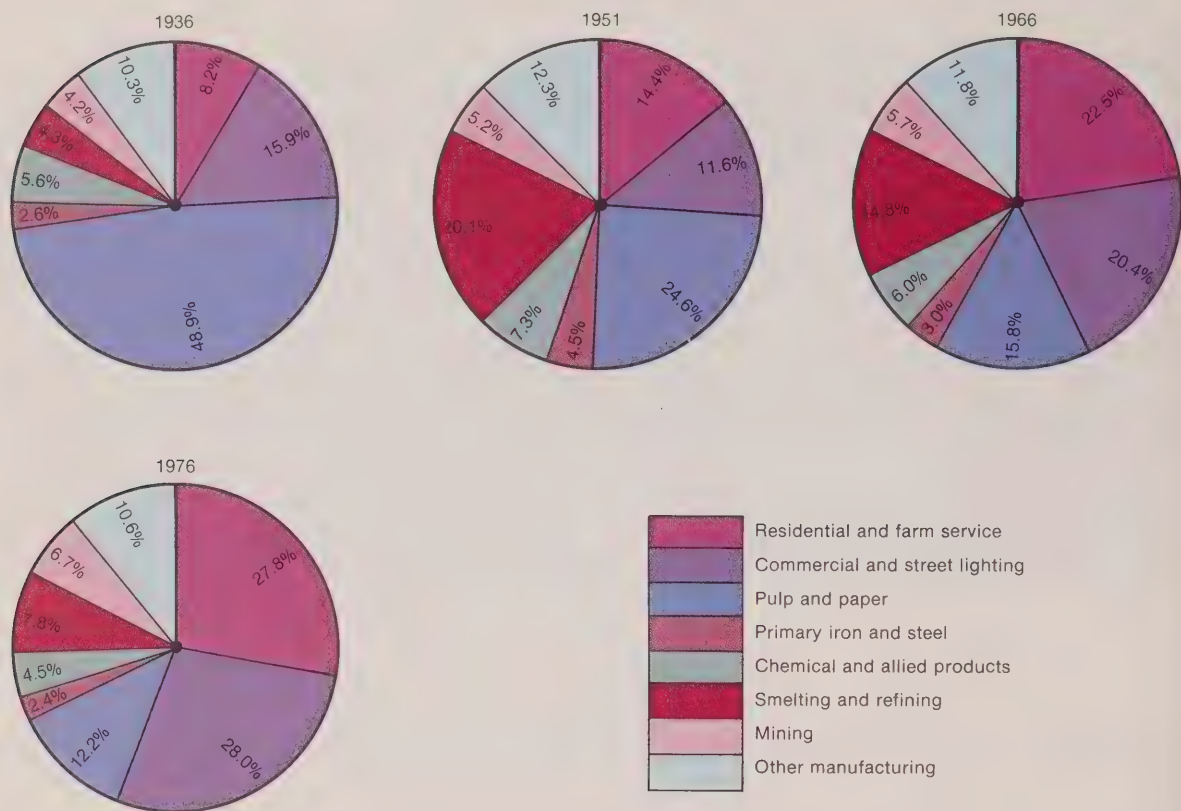
Source: Urquhart, M.C., and Buckley, K.A.H., eds., *Historical Statistics of Canada*, Toronto, Macmillan of Canada, 1965; *Electric Power Statistics*, Catalogue 57-202, 1961-77.

CHART 13.6
Hydro-electric and thermal electric power generating capacity as a proportion of total installed electrical power generating capacity, 1936-77



Source: Urquhart, M.C., and Buckley, K.A.H., eds., *Historical Statistics of Canada*, Toronto, Macmillan of Canada, 1965; *Electric Power Statistics*, Catalogue 57-202, 1961-77.

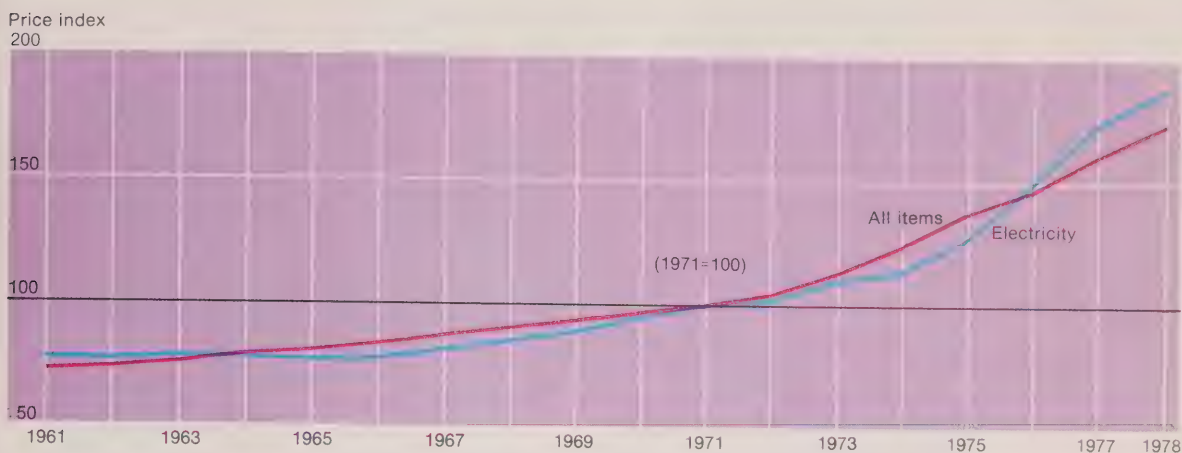
CHART 13.7
Consumption of electricity by end use,¹ 1936, 1951, 1966 and 1976



¹These figures do not include line losses, free service, unaccounted-for energy, energy used in own plant by utilities, energy exported or residual error of estimate.

Source: Urquhart, M.C., and Buckley, K.A.H., eds., *Historical Statistics of Canada*, Toronto, Macmillan of Canada, 1965; *Electric Power Statistics*, Catalogue 57-202, 1966 and 1976.

CHART 13.8
Price index of electricity and all items, 1961-78



Source: *The Consumer Price Index*, Catalogue 62-001; *Consumer Prices and Price Indexes*, Catalogue 62-010.

TABLE 13.9
Production and consumption of crude oil, natural gas and coal, 1936-77

	Crude oil		Natural gas		Coal	
	Production	Consumption ¹	Production	Consumption ¹	Production	Consumption ¹
	<i>millions of barrels</i>		<i>billions of cubic feet</i>		<i>millions of tons</i>	
1936	1.5	31.1	28.1	28.2	15.2	27.9
1941	10.1	56.9	43.5	43.7	18.2	38.1
1946	7.6	71.0	47.9	48.3	17.8	43.1
1951	47.6	130.6	79.5	83.2	18.6	45.0
1956	172.0	235.5	169.2	175.2	14.9	36.9
1961	220.8	290.0	560.8	398.2	10.3	21.7
1966	319.6	342.0	1,106.6	724.0	11.2	26.4
1971	475.6	449.7	2,028.3	1,141.3	18.4	28.8
1972	541.6	481.7	2,299.0	1,307.7	20.7	31.5
1973	635.9	543.2	2,433.7	1,427.5	22.6	26.9
1974	596.6	554.2	2,420.1	1,468.7	23.4	25.1
1975	505.1	541.2	2,446.4	1,507.3	27.8	31.8
1976	461.9	553.3	2,458.7	1,509.2	28.1	31.2
1977	462.2	587.1	2,591.0	1,591.3	31.4	34.7

¹Apparent consumption equals production plus imports less exports.

Source: Urquhart, M.C., and Buckley, K.A.H., eds., *Historical Statistics of Canada*, Toronto, Macmillan of Canada, 1965; *The Crude Petroleum and Natural Gas Industry*, Catalogue 26-213, 1961-77; *Coal Mines*, Catalogue 26-206, 1961-77.

TABLE 13.10
Total consumption of energy, by region, 1958-76

	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia, Yukon and Northwest Territories	Canada
	<i>000,000,000,000's Btu</i>					
1958	211	628	981	593	225	2,638
1961	242	737	1,125	639	257	3,000
1966	304	985	1,497	857	391	4,034
1971	450	1,239	1,835	1,104	570	5,197
1972	477	1,298	1,954	1,181	595	5,504
1973	492	1,394	2,020	1,243	630	5,779
1974	503	1,426	2,118	1,250	660	5,957
1975	474	1,396	2,054	1,324	638	5,886
1976	488	1,430	2,198	1,317	675	6,107

Source: *Detailed Energy Supply and Demand in Canada, Catalogue 57-207, 1970-76; Detailed Energy Supply and Demand in Canada, 1958-1969, Catalogue 57-505; Urquhart, M.C., and Buckley, K.A.H., eds., Historical Statistics of Canada, Toronto, Macmillan of Canada, 1965.*

TABLE 13.12
Households with hot and cold piped running water and exclusive use of flush toilets and bath or shower facilities, 1953-78

	Hot and cold piped running water	Flush toilets	Bath or shower facilities
	<i>per cent</i>		
1953	62.6	68.6	61.6
1956	68.0	73.1	66.8
1961	80.3	86.1	78.8
1966	88.4	91.5	87.1
1971	93.5	95.4	93.4
1972	93.6	96.0	94.2
1973	94.5	96.4	95.3
1974	95.7	97.2	96.2
1975	96.7	97.4	96.9
1976	97.2	98.1	97.6
1977	97.8	98.1	97.8
1978	98.1	98.0	97.3

Source: *Household Facilities and Equipment, Catalogue 64-202, 1953-78.*

TABLE 13.11
Shift in share¹ of provincial energy consumption per person, 1972 and 1976²

	Coal and its derivatives ³		Motor gasoline		Diesel oil		Light fuel oil		Heavy fuel oil	
	1972	1976	1972	1976	1972	1976	1972	1976	1972	1976
Atlantic provinces	0.83	0.65	0.89	0.88	1.37	1.63	1.01	1.60	1.76	1.72
Quebec	0.32	0.34	0.86	0.87	0.65	0.72	1.32	1.44	1.62	1.72
Ontario	2.08	2.14	1.03	1.00	0.63	0.67	1.03	0.99	0.79	0.73
Manitoba	0.59	0.73	1.02	1.02	1.48	1.32	0.36	0.34	0.24	0.30
Saskatchewan	0.23	0.15	1.37	1.46	1.85	1.87	0.35	0.32	0.18	0.01
Alberta	0.24	0.20	1.30	1.39	1.71	1.96	0.11	0.16	0.15	0.03
British Columbia, Yukon and Northwest Territories	0.31	0.20	0.99	0.95	1.77	1.48	0.68	0.58	0.65	0.83
	Aviation gasoline and turbo fuel		Other petroleum fuels ⁴		Natural gas		Electricity		Total ⁵	
	1972	1976	1972	1976	1972	1976	1972	1976	1972	1976
Atlantic provinces	1.17	1.08	1.91	1.59	—	0.01	0.70	0.79	0.92	0.84
Quebec	1.05	0.89	1.00	0.99	0.15	0.19	1.19	1.22	0.85	0.86
Ontario	0.74	0.80	0.60	0.78	1.06	1.13	0.95	0.94	0.99	1.00
Manitoba	1.21	1.43	1.46	0.70	1.18	1.05	0.95	0.98	0.91	0.89
Saskatchewan	0.45	0.06	0.54	1.59	2.07	1.78	0.65	0.63	1.09	1.12
Alberta	1.41	1.59	1.92	1.01	4.18	3.81	0.70	0.71	1.67	1.64
British Columbia, Yukon and Northwest Territories	1.44	1.37	0.86	1.15	1.16	1.09	1.32	1.20	1.02	1.01

¹A figure of 1.00 indicates that per person consumption is equal to the national average. A figure below 1.00 means that provincial consumption is below the national average; a figure over 1.00 indicates consumption greater than the national average.

²Includes consumption in all sectors of the economy. The breakdown into various energy types is done as close to the final step in consumption as they can be traced; electricity derived from all sources is shown as simple heat equivalent of electricity generated. The relative share is based on the average for Canada; thus if 20% of all Canadians were located in a certain province in which 30% of all diesel oil were consumed, the corresponding index would be 1.5% thus a number greater than 1 indicates relatively heavy use of energy.

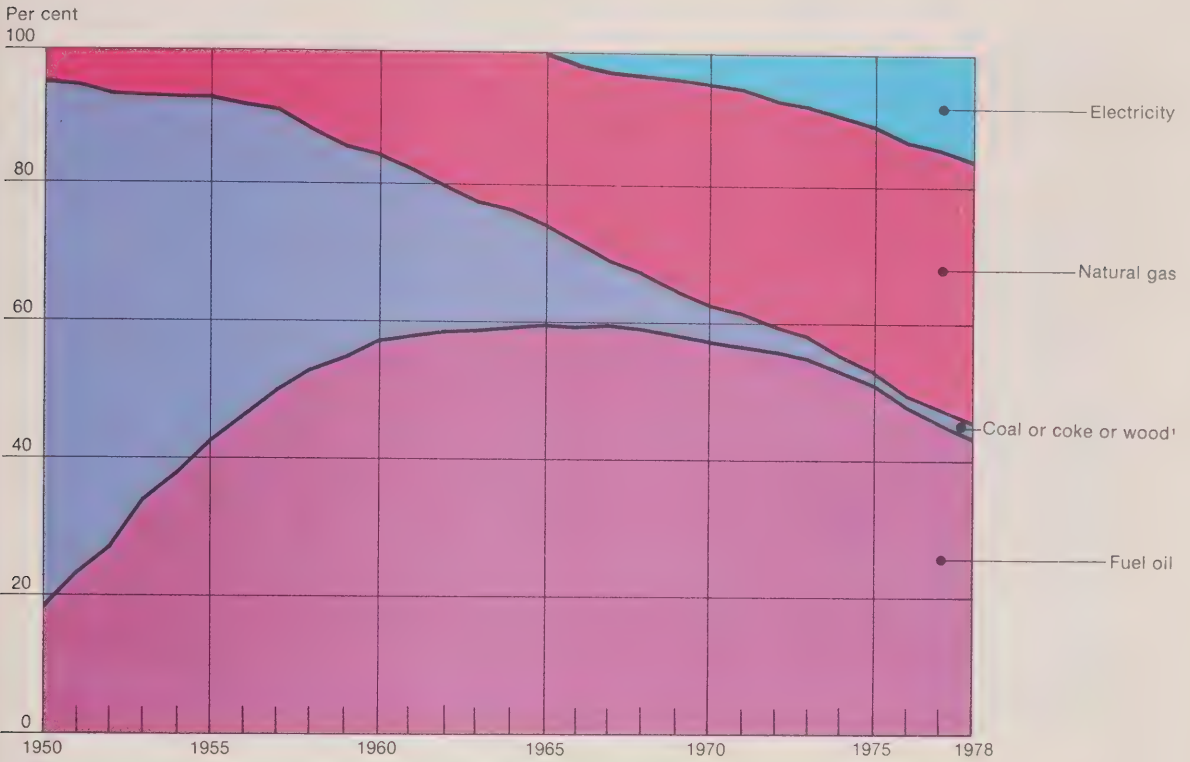
³Includes coal, coke and coke oven gas.

⁴Includes crude oil, still gas, kerosene, petroleum coke, and liquefied petroleum gases.

⁵Does not include wood used as fuel for heating.

Source: *Detailed Energy Supply and Demand in Canada, Catalogue 57-207; Household Facilities and Equipment, Catalogue 64-202.*

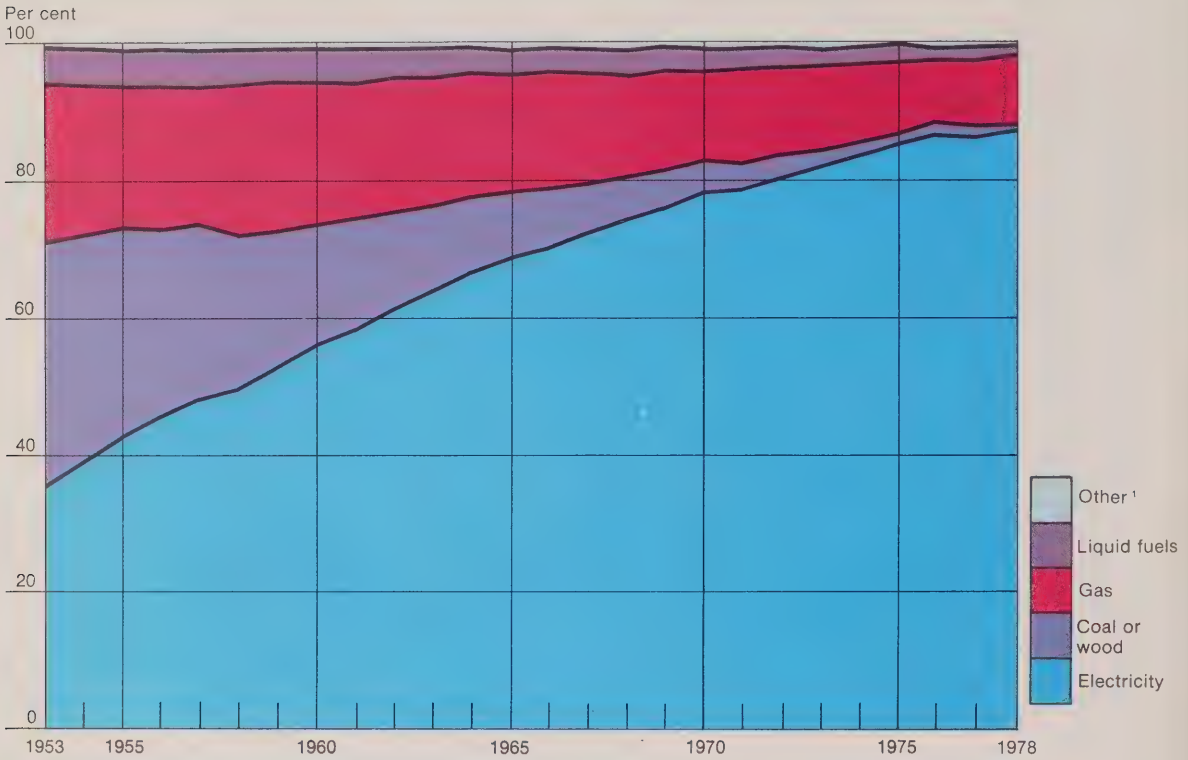
CHART 13.13
Distribution of fuels used for heating dwelling units, 1950-78



¹Includes sawdust, briquettes and, until 1965, electricity.

Source: *Household Facilities and Equipment*, Catalogue 64-202, 1950-78.

CHART 13.14
Fuels used for cooking, 1953-78



¹Includes households for which no cooking fuel was reported.

Source: *Household Facilities and Equipment*, Catalogue 64-202, 1953-78.

TABLE 13.15
Households with selected facilities, 1953-78

	Refrigerators	Home freezers	Washing machines	Clothes dryers	Dish-washers
	<i>per cent</i>				
1953	66.3	2.2	--	--	--
1956	79.1	6.8	--	--	--
1961	92.0	13.1	14.2	14.7	1.5
1965	95.8	22.6	23.1	27.4	2.7
1967	97.2	27.7	30.0	34.4	4.4
1969	98.1	30.9	36.4	40.5	6.5
1970	98.4	33.2	40.4	44.3	7.5
1971	98.2	34.0	39.4	43.1	8.6
1972	98.7	35.6	42.7	45.5	9.2
1973	98.6	37.4	44.9	47.7	10.7
1974	98.9	39.8	48.9	48.3	12.9
1975	99.3	41.8	52.1	51.6	15.2
1976	99.2	43.5	55.9	54.7	18.6
1977	99.4	47.6	59.2	56.8	21.8
1978	99.4	47.2	59.1	56.0	23.8

	Sewing machines	Vacuum cleaners	Power lawn-mowers ¹	Air conditioners	Snow-mobiles
	<i>per cent</i>				
1953	23.4	48.0	--	--	--
1956	30.8	55.3	--	--	--
1961	44.8	69.0	23.3	1.7 ²	--
1965	52.4	74.9	36.4	2.2	--
1967	55.8	78.3	38.9	3.2	--
1969	58.4	81.0	43.2	3.9	--
1970	--	--	47.0	4.3	--
1971	64.3	82.8	--	5.3	7.4
1972	--	--	48.5	5.8	8.3
1973	67.9	83.9	--	6.7	9.1
1974	--	--	49.2	10.2 ³	9.3
1975	65.4	86.5	--	12.4	10.0
1976	--	--	51.2	13.4	9.8
1977	64.2	88.7	--	15.3	10.1
1978	--	--	53.2	15.3	10.0

¹The first 4 figures in this column are for 1960, 1964, 1966 and 1968.

²Figure is for 1960.

³Figures for 1974 and subsequent years include window and central air conditioners.

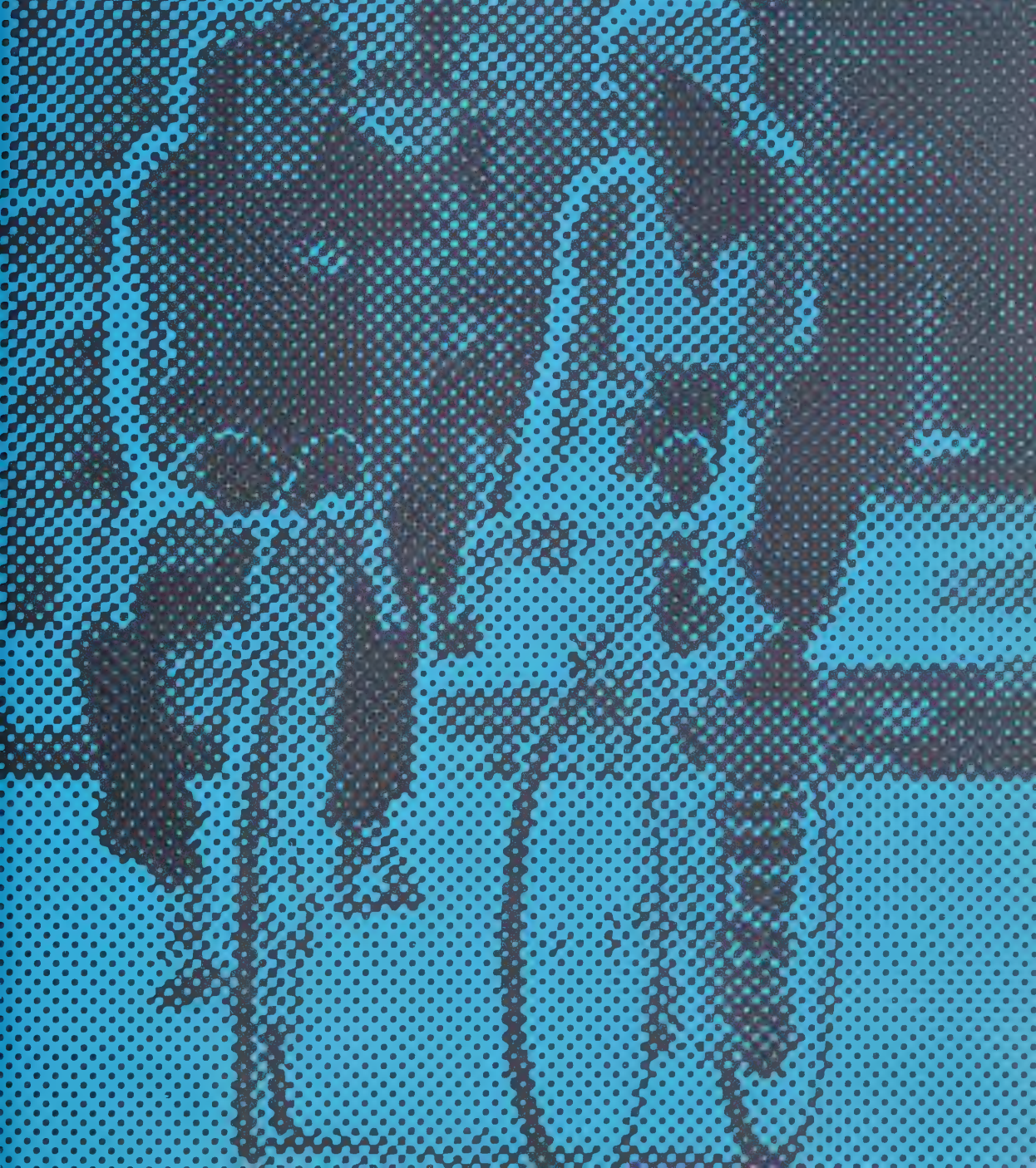
Source: *Household Facilities and Equipment*, Catalogue 64-202, 1953-78.

TABLE 13.16
Households with telephones, televisions and radios, 1953-78

	Telephones			Televisions			Radios			
	1	2 or more	Total	1	2 or more	Total	1	2 or more	Total	
					<i>per cent</i>					
1953	..	..	65.7	10.2	..	..	72.3	24.1	96.4
1956	..	..	73.7	53.6	..	..	71.7	24.3	96.0
1961	76.2	8.4	84.6	80.2	4.0	84.2	59.1	37.3	96.4	
1965	76.2	13.2	89.4	81.8	10.9	92.7	54.8	41.3	96.1	
1967	76.1	15.6	91.7	78.9	15.7	94.6	42.8	53.9	96.7	
1969	75.4	18.5	93.9	76.0	20.0	96.0	40.2	57.2	97.4	
1970	74.2	19.8	94.0	74.0	22.0	96.0	38.2	59.0	97.2	
1971	73.2	21.0	94.2	73.1	23.1	96.2	37.1	60.3	97.4	
1972	73.7	20.9	94.6	72.1	23.7	95.8	34.9	62.7	97.6	
1973	71.9	23.2	95.1	69.1	26.9	96.0	32.4	65.3	97.7	
1974	70.4	25.5	95.9	65.9	30.4	96.3	30.7	67.5	98.2	
1975	69.4	26.9	96.3	65.0	31.8	96.8	29.9	68.4	98.3	
1976	68.7	27.9	96.6	63.8	32.8	96.6	28.9	69.7	98.6	
1977	66.4	30.0	96.4	63.4	33.7	97.1	28.4	69.6	98.0	
1978	65.9	30.6	96.5	63.3	34.0	97.3	25.4	73.0	98.4	

Source: Household Facilities and Equipment, Catalogue 64-202, 1953-78.

Public Perceptions on the Quality of Life



Tables, Charts and Maps

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Public perceptions on the quality of life

This Chapter contributed by Tom Atkinson, Research Associate, Institute for Behavioural Research, York University, Toronto

The data reported in this chapter were generated by a representative sample of approximately 3,300 Canadians interviewed in May and June of 1977. The survey was conducted by the Survey Research Centre at York University, with field work in Quebec done by the Centre de Sondage at the University of Montreal.

The research is being directed by a group at the Institute for Behavioural Research at York University with the support of the Social Sciences and Humanities Research Council.

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The phrase "quality of life" has come into such common usage in everyday discourse that any precise meaning which it may have had has been lost in the multitude of uses. It has, in short, become a cultural or political buzz-word — used to cover a variety of general, and often unspecified, conditions, circumstances and goals. Politicians campaign with slogans about improving the quality of life; joggers speak of the effects of running on their life quality; expectant mothers laud the effects of pregnancy and childbirth on the quality of their lives.

One thing that becomes clear from an examination of the usage of the phrase is that "quality of life" encompasses different things for different individuals. There is a general consensus among Canadians that the quality of life would be enhanced by good social relationships, excellent health, interesting and well-paid work, a comfortable dwelling and pleasant neighbourhood, financial security, adequate leisure time and the facilities to enjoy it, rich cultural and educational opportunities, a clean environment and so on. Our capabilities and circumstances rarely allow all of these ends to be achieved and each individual must make personal choices as to which are the most important. Some value financial security and a high standard of living; others give priority to a rewarding family life; another group strives for achievement and recognition. Each individual's quality of life is dependent on the goals which are significant to him or her. There is no single formula which defines the quality of life for all, or even most Canadians.

Understanding the phrase "quality of life" also requires a recognition of the fact that all individuals who value a given type of goal do not aspire to the same level of attainment. Some who value financial security feel that an annual income of \$20,000 would be sufficient while others are convinced that nothing less than \$50,000 would allow them to live comfortably. Some would define good health and fitness as freedom from disease and the ability to run 10 000 metres in less than 50 minutes, while others would be satisfied simply to get through the day without arthritic pain. Judgments about the quality of life involve comparisons with some set of standards. These criteria vary from one person to the next, and the same person may use different standards at different stages of life.

To rephrase John Keats, quality is in the eye of the beholder. Each person has his or her own values, needs and expectations which guide behaviour and provide standards

for the evaluation of current situations. Differences among individuals do not imply that each person's assessments are unique, but they do suggest that evaluations of the quality of life must come from the individual and not from politicians, businessmen or journalists.

How Canadians evaluate the quality of their lives is described in this chapter. Their perceptions of particular areas or domains of experience, such as their health, job and housing, are reported, as well as their assessments of life as a whole. Variations in the perceived quality of life in these areas are also examined to determine the extent to which the needs of different segments of the population are being satisfied.

The material described in this chapter is based entirely on satisfaction indicators.¹ The advantage of using satisfaction measures of the perceived quality of life is that they allow each individual to evaluate his or her current situation in terms of personal standards. These standards will include expectations, aspirations, perceptions of what others have, feelings of entitlement, and recollections of one's situation in the past. The responsiveness of these measures to the individual's needs and desires distinguishes subjective indicators from objective measures of the quality of life which simply make counts of things, such as dollars, that are presumed to lead to a high quality of life. Such objective measures are based on assumptions which can only be tested by gathering information on the individual's responses to these objective conditions.²

Satisfaction measures, however, have one shortcoming which affects their interpretation. They are, in one sense, not direct measures of perceived quality of life, but tap responses to those perceptions. Since people apply individual criteria when determining their degree of satisfaction, it is possible for high levels of satisfaction to result from low personal standards rather than high achievement. Since satisfaction is a function of the difference between an individual's perceptions of what he has and some standard for comparison, such as to what he aspires, one could at the same time evaluate the quality of one's life to be high and yet be less than completely satisfied because it was not high enough. For instance, it is not uncommon for people with sizable incomes to be dissatisfied with them, while those with much lower incomes are satisfied.

There are at least two types of satisfaction — the satisfaction of accomplishment and the satisfaction of resignation. The former results from the narrowing of the gap between one's current status and one's goals through improvements in current status. The latter stems from a reduction of the gap through the downward revision of goals to the level of the individual's current status. The preliminary findings provide very little evidence to suggest that satisfaction in Canadian society results from resignation, but the issue requires additional investigation.

Quality of life perceptions in Canada

The survey included satisfaction measures for life as a whole and for 15 specific areas of experience (called domains).

The first impression drawn from the data is that Canadians, in general, are satisfied with their lives and with the various domains of their life situation (**Chart 14.1**). In no

instance was the majority of respondents neutral or dissatisfied with a domain. The area which produced the lowest level of satisfaction was education, where only 61% of Canadians were satisfied to some degree. This evidence suggests that our society and its institutions have had some success in meeting the needs of the population and their expectations in these 15 domains.

The extent of that success, however, is qualified by the observation that in only two domains, those of marriage and children, did the majority indicate that they were "Very Satisfied" (scale values 10 and 11). In 10 domains, high levels of satisfaction were expressed by less than one third of Canadians. Those contending that society should strive to encourage high levels of satisfaction, rather than simply the avoidance of dissatisfaction, will find room for improvement in these figures. In the areas of health, personal finances, education and leisure, 25% or less of the sample characterized themselves as "Very Satisfied", and in three of those areas, the proportion "Dissatisfied" was about equal to or exceeded the percentage who were "Very Satisfied".

The ranking of the various domains indicates that aspects of social relationships dealing with marriage, children and friends were clearly more satisfying than the other domains. The single exception to this finding was the relatively low level of satisfaction with romantic relationships of those who were not married. This phenomenon is examined in detail later in the chapter.

A second group of evaluations clusters around place of residence — dwelling, neighbourhood, city, province and country. Of this group, responses to satisfaction with neighbourhood were the most positive, followed closely by city and province. People's assessments of their dwellings and of Canada as a place to live were notably lower. Another study⁹ reported that French-speaking Canadians were substantially less satisfied than English-speaking Canadians with Canada as a place to live, although they were not less satisfied with their lives in general. This English-French difference accounts for the lower ratings of Canada compared to those for neighbourhood, city and province.

Perhaps a more interesting phenomenon is the relatively low evaluation people give to their dwellings. Since individuals and families tend to move if they are dissatisfied with their places of residence, it was expected that assessments of dwelling would be at least as favourable as those of neighbourhood, city and province. The lower-than-expected ratings of dwellings are also discussed in a later section of this chapter.

Health, finances, education, and leisure received the lowest ratings. These areas are distinguished by the fact that at least 20% of the sample was less than satisfied, that is, "Neutral" or "Dissatisfied", with each. In addition, if responses to job and housework (the occupation of many women) were combined, 20% of the respondents were not satisfied with their work.

The distribution of satisfaction within the Canadian population

General Life Satisfaction: Satisfaction with life as a whole is probably the best single indicator of the quality of life. This indicator includes responses to a variety of domains which are weighted or combined to reflect the importance of each to the individual. It generates a single, individually-defined measure of life quality.

The two socio-demographic variables most strongly associated with general life satisfaction are age and family

income. Chart 14.3 shows the relationships among the three variables. Family income is divided into quintiles or fifths but has not been adjusted for family size because parallel analyses which adjusted income for family size, regional cost of living figures, and urban size produced virtually identical results.⁴

From the age and income totals in Chart 14.3, it is clear that satisfaction with income increased with age, particularly within the older groups, and that proportionally fewer people reported being neutral or dissatisfied as income increased. It is interesting to note, however, that increases in satisfaction occur with advancing age despite the fact that income decreases at the same time. Although 61% of those 65 and over are in the lowest income group, they exhibit the highest levels of satisfaction. Within the first two income categories, satisfaction increases with age; there is an increase from 26% "Very Satisfied" in the 18-34 year low-income group to 58% in the 65 and over group at the same income level. The differences are much less marked in the higher income brackets.

The importance of the relationship between age and satisfaction, which is frequently reported in this chapter, seems to result from two factors. First, aspirations appear to be more closely tied to the individual's current circumstances and the potential for improvement. Since major improvements in wealth, status and other aspects of life are not anticipated by older persons, they tend to be relatively more satisfied with what they have. A second change associated with old age is a significant increase in the amount of leisure time available to the individual as a result of retirement from the work force, and research in Canada and the United States has shown that satisfaction with leisure is one of the most important determinants of general life satisfaction. Having the time to engage in rewarding pursuits may explain the large increases in life satisfaction among those 65 and older.

The impact of income on life satisfaction is most obvious in the lower quintiles, and its major effect is to reduce the proportion of persons who are not satisfied, that is, "Neutral" or "Dissatisfied", particularly in the 35-49 and 50-64 year age groups. The percentage of 35-49 and 50-64 year olds who are not satisfied drops from about 32% in the lowest income group to around 17% in the second quintile, and to 10% and less for the three higher groups. A similar but weaker pattern is suggested for the 18-34 year old group.

Low income levels reduce the likelihood of satisfaction with life in all but the oldest group of respondents. Increasing income does not, however, increase the probability that individuals will be very satisfied. Money seems to act as a prerequisite for minimal levels of satisfaction but does not appear sufficient to produce high satisfaction levels. It is also clear that people can be quite satisfied without high incomes since there is never more than an eight percentage point difference in the proportion of the lowest and highest income groups reporting that they were very satisfied.

A separate analysis which combined data from the 1977 survey with comparable measures from 1968 and 1974 has shown that the relationships between age, income and life satisfaction found in 1977 were not the same as those evidenced in 1968. During the period 1968-77, two important changes occurred: first, the satisfaction levels of the under 35 years age groups dropped dramatically; and, second, differences in satisfaction among income groups decreased considerably. These changes should have implications for the future and serve as a reminder that the distribution of

satisfaction and other measures of the perceived quality of life are not constant over time and will require constant monitoring if an understanding of this aspect of social change in Canada is to be achieved.

Life satisfaction by age group,¹ 1968, 1974 and 1977

	Proportion of the adult population "very satisfied"		
	1968	1974	1977
	<i>per cent</i>		
Age group:			
18-19 years	...	34	26
20-29 "	43	33	29
30-39 "	33	28	33
40-49 "	32	30	35
50-59 "	34	36	36
60-69 "	42	41	46
70 years and over	60	47	57
All age groups	30	34	35

¹The effect of income differences has been controlled.

Source: Atkinson, T.H., *Trends in Life Satisfaction Among Canadians, 1968-1977*, Institute for Research on Public Policy, Montreal, 1979.

Satisfaction with Financial Situation: Each respondent surveyed was asked a series of questions about his or her income, the incomes of other family members, the family's monthly bills, and their debts and savings. Following these questions, they were asked about their level of satisfaction with their present financial situation, including total income and costs, and debts and savings. As with general life satisfaction, age and income are the two most strongly related socio-demographic factors, although income is the more strongly associated variable of the two.

The effect of income is consistent within each of the three younger age groups, with the percentage "Very Satisfied" increasing with each step up in income and the percentage "Dissatisfied" declining. Dissatisfaction, for example, dropped from 55% to 13% in the 18-34 age group while the proportion "Very Satisfied" increased from 7% to 24%. Although increasing income levels tend to produce increases in the percentages expressing high levels of satisfaction, their stronger effect is again to reduce dissatisfaction.

As with general life satisfaction, the most substantial impact of income occurs at the lower end of the scale. For each of the three age groups where data are available on all income levels, the greatest drop in dissatisfaction is between the first and second income quintiles.

Satisfaction with Dwelling: It is apparent from the data in Chart 14.5 that the major determinant of housing satisfaction is whether the dwelling is owned or rented, and not the particular type of structure. There are virtually no differences in satisfaction among tenants, who are generally less satisfied than owners of the same type of property.

This is a difficult finding to interpret, but two possible interpretations may account for these differences. The first may be that the present quality of owned dwellings is superior to those which are rented because they have been better maintained than rental properties. The second possibility is that ownership, in and of itself, leads to greater

satisfaction irrespective of the quality of the property. There are several reasons why this may be the case. Owners have an equity in their property which adds to the attractiveness of the dwelling, even if it is physically the same as a rented unit. In addition, home ownership has traditionally been a valued goal in Canadian society and the responses of those who rent may be expressions of dissatisfaction with not owning rather than with specific attributes of the dwelling. Finally, owners bear a singular responsibility for the condition of their dwelling and may tolerate some inconvenience as a result. Many renters, on the other hand, may expect the owners to maintain the property in good condition and may be more likely to express dissatisfaction if they do not.

These alternatives can be partially tested by comparing the responses of different income groups to the same type of dwelling. Assuming that families with higher incomes live in higher-quality dwellings, the first explanation involving poor quality rented dwellings leads to the expectation that satisfaction will increase with income. The second explanation related to the intrinsic value of ownership suggests that income will not be related to satisfaction.

The evidence also indicates that satisfaction does not increase with income for either owners or renters (*Chart 14.6*). Apparently the quality of the unit is a less important determinant of housing satisfaction than whether it is owned or rented. This suggests that tenants are likely to be less satisfied than owners regardless of the quality of their dwellings.

Satisfaction with Work: Job satisfaction is a research topic which has received considerable attention in the past and is a current concern of both the public and private sectors. This survey is one of the few in Canada which has assessed satisfaction with work for a nationally representative sample (*Charts 14.7 and 14.8*). Individuals who worked for pay more than 20 hours a week were considered employed and asked to rate their job satisfaction. Women who identified themselves as housewives were treated as a separate occupational category and asked to indicate their satisfaction with doing housework.

Satisfaction levels are highest in the managerial/professional and skilled blue collar occupational groups and lowest for the semi-skilled and unskilled blue collar groups. The surprising aspect of these occupational differences is the high degree of satisfaction observed in the skilled blue collar group which, along with the semi-skilled and unskilled group, has often been pictured as alienated by modern industrial working environments. The key to understanding the similarity between the managerial/professional and the skilled blue collar groups may lie in the suggestion that many skilled blue collar workers, for example, foremen, plumbers and electricians, work in largely unsupervised capacities and often determine the pace of their own work. More than any other group, they share these job attributes with many managerial and professional occupations.

The data show that high job satisfaction is slightly greater for women than for men, although the tendency has been for women to have jobs of lower status. The association between education and satisfaction is less clear. Satisfaction decreases somewhat as education increases, but the differences visible in Chart 14.8 are not very noteworthy.

It is also clear that within each occupational category, except the semi- and unskilled blue collar group, high satisfaction decreases as education increases and women are more satisfied than men. Both of these relationships point toward the importance of levels of expectation and aspira-

tions as conditioners of responses to work. Those who achieve higher levels of education usually do so to improve the category of job for which they qualify. They expect that their training will place them in better positions and are not surprised or overly satisfied when their expectations are realized. On the other hand, those with lower levels of education may not expect better jobs as a matter of course, and must often work their way into them. Their higher levels of satisfaction could result from having attained better status through hard work and, since they have no reason to expect that success will be ensured, they are highly satisfied with their improved positions.

A similar explanation may account for the differences between men and women in each educational and occupational category. Even in the 1970s, women are less likely than men to obtain better positions as a result of educational achievement. In addition, many women have had to work harder than similarly qualified men to obtain equivalent positions. Their success in attaining such positions when the expectations of success are lower than men's may lead to greater feelings of satisfaction. It is likely that these differences will decrease as women achieve greater equality and success in the work environment.

Responses of women to the question about satisfaction with housework demonstrate the effect of education on satisfaction. Those with primary school education are as satisfied with doing housework as any group of women employed outside their homes, while those with university education are less satisfied with housework than any other occupational group. As the level of education increases, women acquire the skills to function successfully in a greater variety of occupations. It is possible that housework does not provide channels for the expression of those skills, resulting in relatively low levels of satisfaction. It must be noted, however, that only 18% of the university-educated women indicate general dissatisfaction with housework.

A question arises as to whether the differential responses to housework observed for education groups are due to differences in schooling or to variations in age since better-educated women also tend to be younger. In addition, while there are small increases in satisfaction with housework as age increases, the stronger influence is education. The proportion "Very Satisfied" with housework is 24% among women with a secondary school education who are between 18 and 34 years old; 27% for those 35 to 48 years, and 30% for those 50 and over. By comparison, among those 18 to 34 years old, the proportion "Very Satisfied" declined from 42% with primary school education, to 24% with secondary school, and to 5% with university experience. Education, not age, is the primary conditioner of responses to housework.

The relationship between education and satisfaction with housework is probably the same as that between education and job satisfaction. For both men and women, increasing levels of education lead to higher aspirations and expectations about their work. Housework does not meet these expectations among higher-educated women any better than do low-skilled occupations.

Satisfaction with Marriage and Romance: Previous research on perceptions of the quality of life has generally found that marriage is the domain where the highest levels of satisfaction occur, and that satisfaction with marriage is more closely correlated with general life satisfaction than any other domain. The difficulty with these earlier studies, however, is that they have only assessed the responses of married persons, and, as suggested in Chart 14.2, the

satisfaction of unmarried people is less favourable than those who are married. To overcome this problem, married and unmarried persons were asked comparable questions concerning their romantic relationships. In addition, a distinction was made between those unmarried individuals who were seeing only one person (or one person more than others) and those who were not going out much or who had no particular person they saw more than others. The former are referred to as having a "Steady relationship" while the latter constitute the "No steady" group.

Married persons reported greater satisfaction with their relationships than those who were not married and those with steady relationships were, in turn, more satisfied than persons without steady relationships. Canadians, both men and women, continue to draw great satisfaction from marriage relationships, contrary to the impressions which other statistics, such as divorce rates, may suggest.

These data also suggest that women respond more positively or negatively than men to non-marriage relationships, even though there are no differences in the average levels of satisfaction. Among those with or without steady relationships, higher proportions of women than men were either "Very Satisfied" and "Dissatisfied". One hypothesis which would explain these differences is that women, to a greater extent than men, must confront the desirability of the institution of marriage. Those who come to prefer alternative relationships can be more satisfied with them than their male counterparts, while those who continue to desire marriage will be more dissatisfied with situations that do not hold the promise of that eventuality. Marriage and romantic relationships are probably not as central an issue to men, and as a result their responses tend to be more moderate.

The figures in Chart 14.9, which indicate much higher levels of satisfaction in marriage versus non-marriage relationships, may be misleading in one sense because they contrast young people who are not married with married persons who, on average, are considerably older. In earlier analyses it was evident that satisfaction increased with age and the relationship differences may simply be a reflection of age differences.

Data in Chart 14.10 demonstrate that although satisfaction does increase with age for those who are married or have no steady relationships, the effects of age do not account for the major differences in satisfaction among types of relationships. In all but the oldest group the difference in the proportion "Very Satisfied" is 40-45% higher for those married than for those with no steady relationship.

A final observation is that the young apparently desire marriage or marriage-like relationships to an even greater extent than older Canadians who are not married. The lack of satisfaction with no-steady relationships among the 18-34 age group is greater than in any other group.

Canada in relation to eight Western European countries

Lest Canadians be overcome with admiration for the success of their economic and social systems as highly efficient satisfiers of human needs, a comparison of the 1977 Canadian results with similar data collected in eight European countries in 1975 is illuminating because the latter study used exactly the same question and response categories as the 1977 Canadian survey; hence the results are directly comparable. A comparison of the proportion of each national sample indicating very high levels of satisfaction with life in general — that is to say, scale responses 10

and 11 — produces the ranking shown in the left-hand column of the following table.

Rank order, Canada (1977) and eight European countries (1975), according to levels of life satisfaction and levels of Gross Domestic Product per capita

Rank according to levels of life satisfaction		Rank according to Gross Domestic Product per capita	
		% very satisfied	
1	Denmark	54	Canada
2	Republic of Ireland	50	Germany
3	Belgium	36	Denmark
4	Canada	35	Belgium
5	Great Britain	29	Netherlands
6	Netherlands	27	France
7	Germany	25	Great Britain
8	France	17	Italy
9	Italy	11	Ireland

While there are several ways of using these data to compare nations, this rank-order method indicates that, although Canada scores above the mid-point for these nine countries, it is a considerable distance behind both Denmark and Ireland in terms of levels of life satisfaction.

A discussion of international differences is not the intent of this paper, but a brief comment is in order. A rank ordering of these nine countries in terms of a rough measure of their standard of living — gross domestic product per capita — yields the ranking shown in the column to the right. Clearly, there is a general similarity in the orderings of the two lists. For example, three of the top four in the life satisfaction ratings are in the top four of the list measuring standard of living, lending some support to the contention that national economic success does encourage citizen satisfaction. However, the exceptions to this rule are remarkable. The Irish are much too satisfied, given their economic situation, while the Germans are much less so than would be expected. Canada has a slightly higher gross domestic product than Denmark, but trails substantially in terms of satisfaction. The effects of economic conditions on the perceived quality of life are far from clear and warrant extensive investigation in their own right.

Conclusion

Each of the analyses presented above tells a short story about some of the factors which may influence perceptions of the quality of life in different areas or domains. An overview of the five areas leaves the impression that no single socio-demographic variable has a strong effect on satisfaction in a majority of these areas. Age and income are important in understanding satisfaction with life in general and with a given financial situation. Sex appears to affect responses to romantic relationships and to work. Education and occupation are related to job satisfaction while type of dwelling, and particularly ownership status, seem to influence housing satisfaction.

Equally impressive is the absence of strong relationships between other socio-demographic variables and perceptions of the quality of life. There were few effects of province or region in this analysis, although such differences seem to occupy much of the attention of decision-makers and political scientists. The impact of ethnicity was small and

secondary to the other effects discussed, while urban size indicators did not affect the satisfaction measures in any significant fashion.

In general, if these findings are corroborated by future surveys, it appears that attempts to improve the quality of life of Canadians, at least in the domains examined in this report, should pay scant attention to where people live. They should instead emphasize the individual's personal situation — income, age, sex, education and occupation.

A note on measuring the perceived quality of life

Two major questions had to be addressed to develop good measures of the perceived quality of life. The first is whether individuals are capable of evaluating their lives in ways which are reliable and valid. That is, does the same individual give similar responses if the identical question is asked on another occasion and second, do different measures of the perceived quality of life correlate well with each other? If the answer to either question were negative, we would be forced to conclude that Canadians do not make consistent evaluations of their lives or, if they do, adequate measures of them have not yet been found.

A number of recent studies⁵ have examined the reliability and validity of several quality-of-life measures. They demonstrate that these evaluations are made by individuals in consistent and intelligible ways, and that some, although not all, measures of the perceived quality of life have good reliability and validity. It is also clear from these analyses that evaluations of specific aspects of life such as job, housing and health have greater reliability and validity than measures of life as a whole. However, even in the latter case, the indicators are superior to almost all other measures of attitudes, opinions and values reported in the psychological and sociological literature.

The aforementioned research demonstrates that several good measures have been developed but does not indicate which of them is the most informative. During the past 15 years, several different types of questions have been used to assess perceptions of the quality of life. H.S. Cantril⁶ developed a measure called the Self-Anchoring Striving Scale which tapped the degree to which a person's current situation differed from his aspirations. N.M. Bradburn⁷ focused on affective or emotional indicators like happiness. Angus Campbell, R.E. Converse, and W.L. Rodgers⁸ stressed measures of satisfaction, as did the quality of life research in Britain.⁹ F.M. Andrews and S.B. Withey¹⁰ developed a Delighted-Terrible scale which combined some of the features of the affective and satisfaction measures.

The Canadian research described includes the Self-Anchoring Scale and a modified version of the satisfaction measures developed by Campbell and his colleagues in the United States. Both measures are suited to use in a bilingual environment because of their ease of translation, and have performed well in tests of reliability and validity.

Footnotes

¹ *The social indicator used in this analysis is perceived satisfaction — the extent to which Canadians report that they are satisfied or dissatisfied with their lives in general and in specific areas such as marriage, jobs and so on. The exact form of the question used in the survey was:*

Here is a card that I want you to use to tell me how satisfied or dissatisfied you are with your life as a whole. If you are completely satisfied with it, you say "eleven", and if you are completely dissatisfied with it you say "one". If you are neither completely satisfied nor completely dissatisfied, you would put yourself somewhere from "two to ten". The higher the number, the more satisfied you are.

In general, how satisfied or dissatisfied are you with your life as a whole? Which number on the card comes closest to how you feel?

01	02	03	04	05	06	07	08	09	10	11
Completely					Neutral					Completely
dissatisfied										satisfied

²As an example of what is meant by subjective as opposed to objective information, consider the following: "On what street is your Post Office?" or "When were you last in a Post Office?" These questions call for factual or objective responses; they describe conditions in the world that when established to be true cannot be disputed. On the other hand, "Are you satisfied with the service offered by the Post Office?" or "Is the present Postmaster General doing a good job?" are questions which ask for subjective information — opinions, evaluations, or feelings about some conditions in the world. They are indeed an individual's opinions or feelings, but they can be disagreed with or argued against by others.

³Blishen, B.R. and Atkinson, T., "Anglophone and Francophone Differences in Perceptions of the Quality of Life in Canada". Paper presented at the World Congress of Sociology, Uppsala, Sweden, 1978.

⁴The discussion presents only those variables with the strongest relationships to satisfaction. There is, for example, a relationship between ethnicity and general life satisfaction (French Canadians are somewhat

more satisfied than those from other backgrounds) but the differences are not as great as the age and income differences which are presented. In other instances, relationships between various socio-demographic factors and satisfaction are partially redundant and only the strongest one is discussed. For example, satisfaction with work is influenced by one's occupation and since some occupational groups are better paid than others, it appears that income also has a strong effect on job satisfaction. The occupation-satisfaction relationship is, however, the stronger and more interesting of the two and is, therefore, the variable discussed.

⁵See, for example, Campbell, A., Converse, P.E. and Rodgers, W.I., The Quality of American Life. New York, Russell Sage Foundation, 1976, and Andrews, F.M. and Withey, S.B., Social Indicators of Well-Being. New York, Plenum Press, 1976.

⁶Cantril, Hadley, The Pattern of Human Concerns, New Brunswick, New Jersey, Rutgers University Press, 1965.

⁷Bradburn, N., The Structure of Psychological Well-Being, Chicago, Aldine Publishing, 1969.

⁸Campbell, A., Converse, P.E. and Rodgers, W.I., op. cit.

⁹Abrams, Mark, "Subjective Social Indicators" in Social Trends, Central Statistical Office, London, 1973.

¹⁰Andrews, F.M. and Withey, S.B., op. cit.

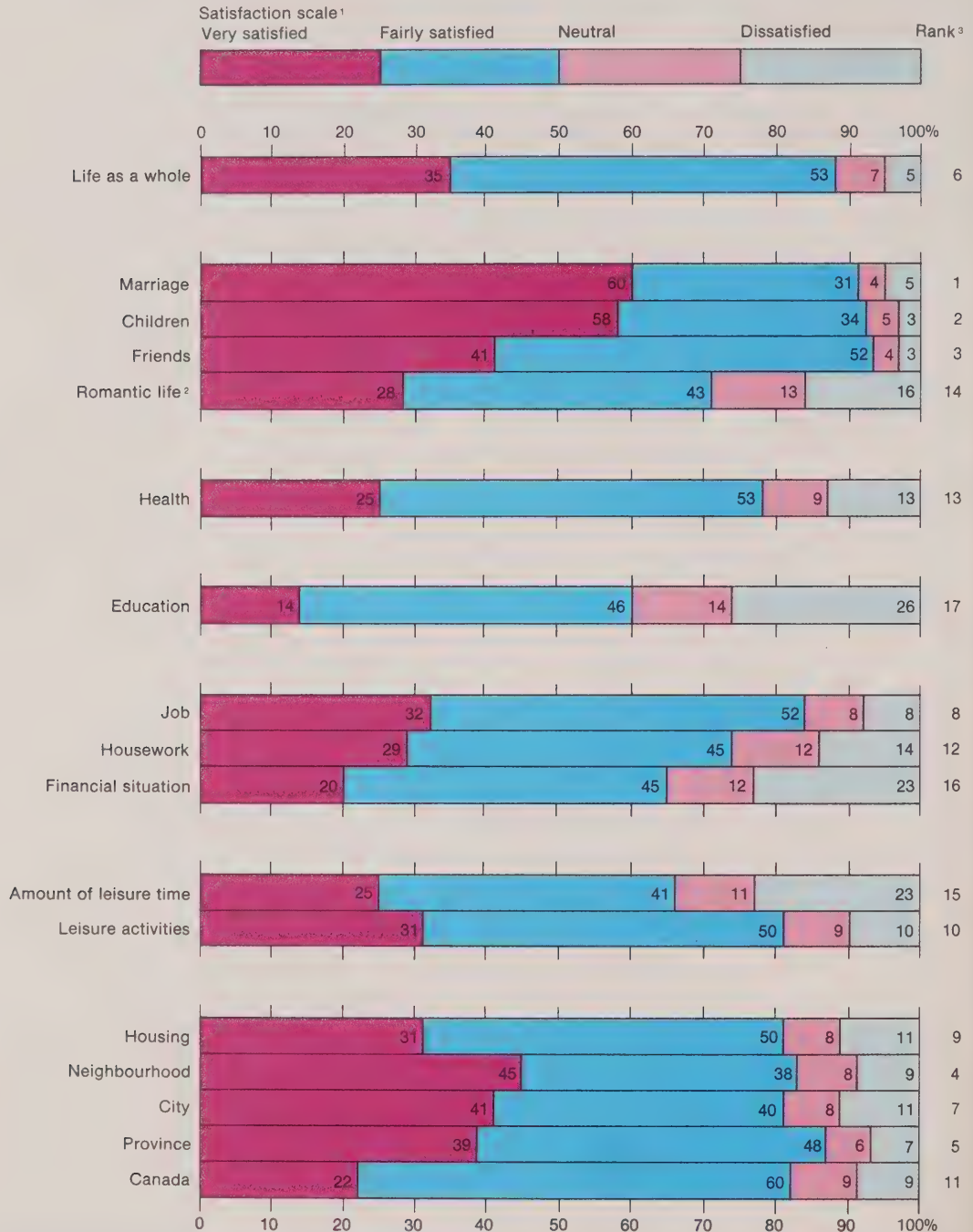
TABLE 14.1
Satisfaction with life as a whole and with major life domains

	11	10	9	8	7	Satisfaction scale ¹					Total	
						6	5	4	3	2		1
						<i>per cent</i>						
Life as a whole	16	19	26	19	8	7	2	1	1	—	1	100
Marriage	36	24	18	10	3	4	1	2	1	—	1	100
Children	33	26	17	13	5	5	1	1	—	—	1	100
Friends	17	24	25	20	7	4	1	1	—	1	—	100
Romantic life ²	10	18	17	17	9	13	5	3	3	2	3	100
Health	9	16	20	21	13	9	5	3	2	1	2	100
Education	4	10	15	18	14	14	9	6	5	3	3	100
Job	13	19	25	18	9	8	2	2	2	1	1	100
Housework	13	16	18	16	12	12	3	4	3	2	2	100
Financial situation	8	12	17	17	12	12	7	5	5	2	4	100
Amount of leisure time	12	13	16	15	10	11	8	6	5	2	3	100
Leisure activities	13	18	22	19	10	9	3	3	2	1	1	100
Housing	12	19	20	19	12	8	4	3	2	1	1	100
Neighbourhood	29	15	18	13	7	8	4	2	1	1	1	100
City	24	17	20	14	6	8	4	3	2	1	1	100
Province	19	20	24	17	8	6	2	2	1	1	1	100
Canada	9	13	23	24	13	9	4	2	2	—	1	100

¹ See Chart 14.2 and text for discussion of satisfaction scale.

² Includes only unmarried persons.

CHART 14.2
Satisfaction with life as a whole and with the major life domains

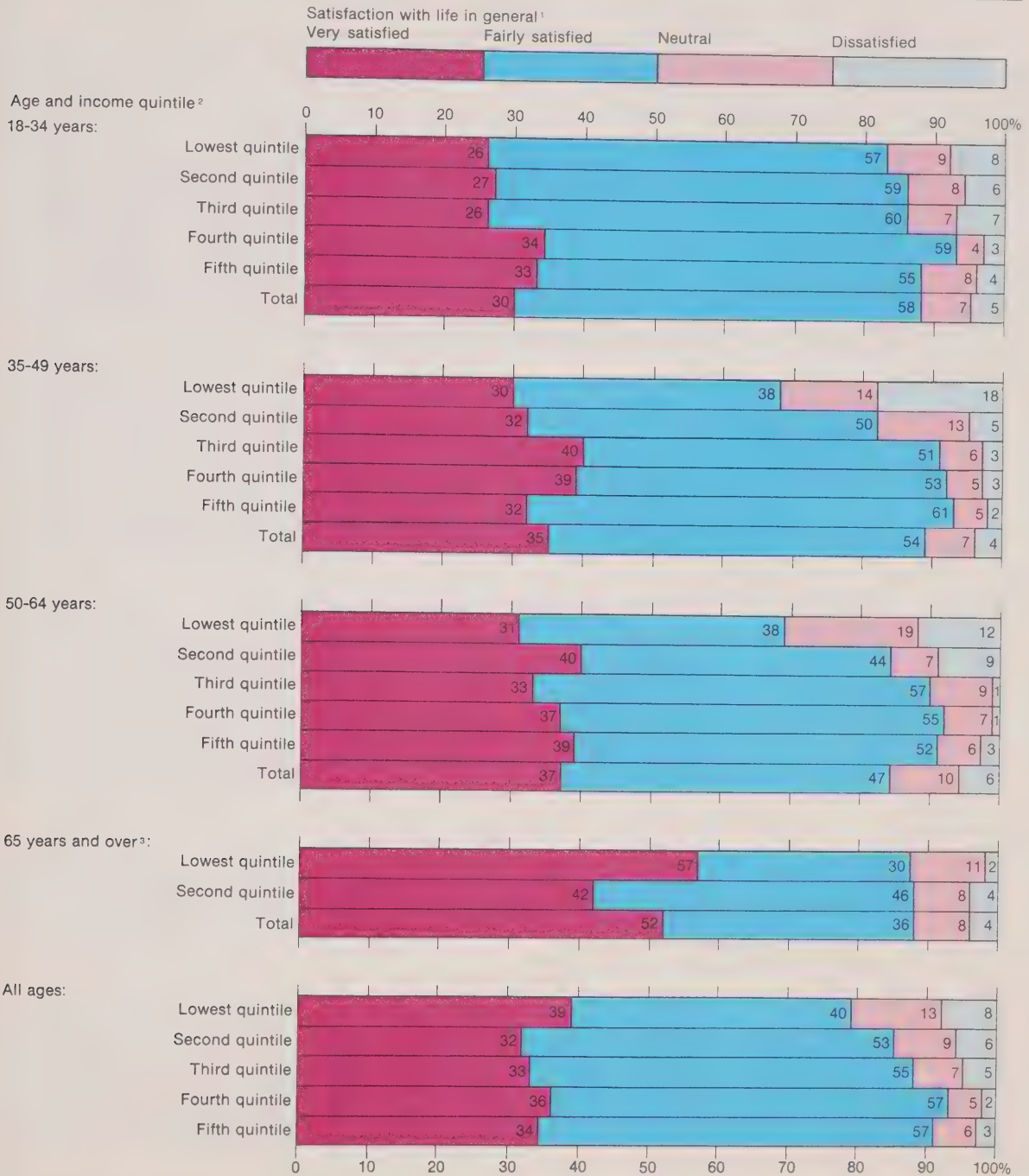


¹Those surveyed were asked to rate their degree of satisfaction on a scale of 1 to 11. "Very Satisfied" includes those who responded 10 and 11; "Fairly Satisfied" — 7, 8 and 9; "Neutral" — 6; and "Dissatisfied" — 1 to 5. Scores for each value are displayed in Table 14.1.

²Includes only unmarried persons.

³Represents the ranking of the average rating for the respective domains.

CHART 14.3
General Life satisfaction by age and income



¹See Chart 14.2 and text for discussion of satisfaction scale.

²An income quintile contains one fifth of all respondents; for example, the lowest quintile in each age group contains those persons in that age group who are among the fifth of all respondents with the lowest incomes.

³Third, fourth and fifth quintiles not included because of insufficient number of respondents.

CHART 14.4
Satisfaction with financial situation by income and age



¹See Chart 14.2 and text for discussion of satisfaction scale.

²An income quintile contains one fifth of all respondents; for example, the lowest quintile in each age group contains those persons in that age group who are among the fifth of all respondents with the lowest incomes.

³Third, fourth and fifth quintiles not included because of insufficient number of respondents.

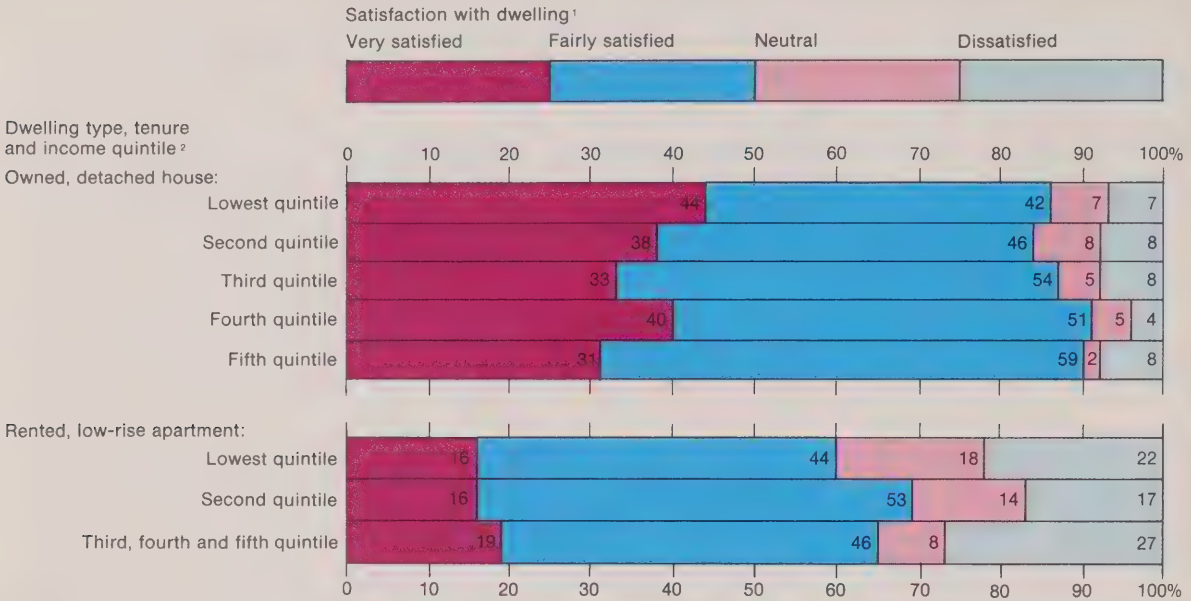
CHART 14.5
Satisfaction with dwelling by type and tenure



¹See Chart 14.2 and text for discussion of satisfaction scale.

²Includes only rented dwellings.

CHART 14.6
Satisfaction with selected dwelling types by income and tenure



¹See Chart 14.2 and text for discussion of satisfaction scale.

²An income quintile contains one fifth of all respondents; for example, the lowest quintile in each age group contains those persons in that age group who are among the fifth of all respondents with the lowest incomes.

CHART 14.7

Job satisfaction by occupation and education



¹See Chart 14.2 and text for discussion of satisfaction scale.

²Education represents highest level completed. University includes community colleges.

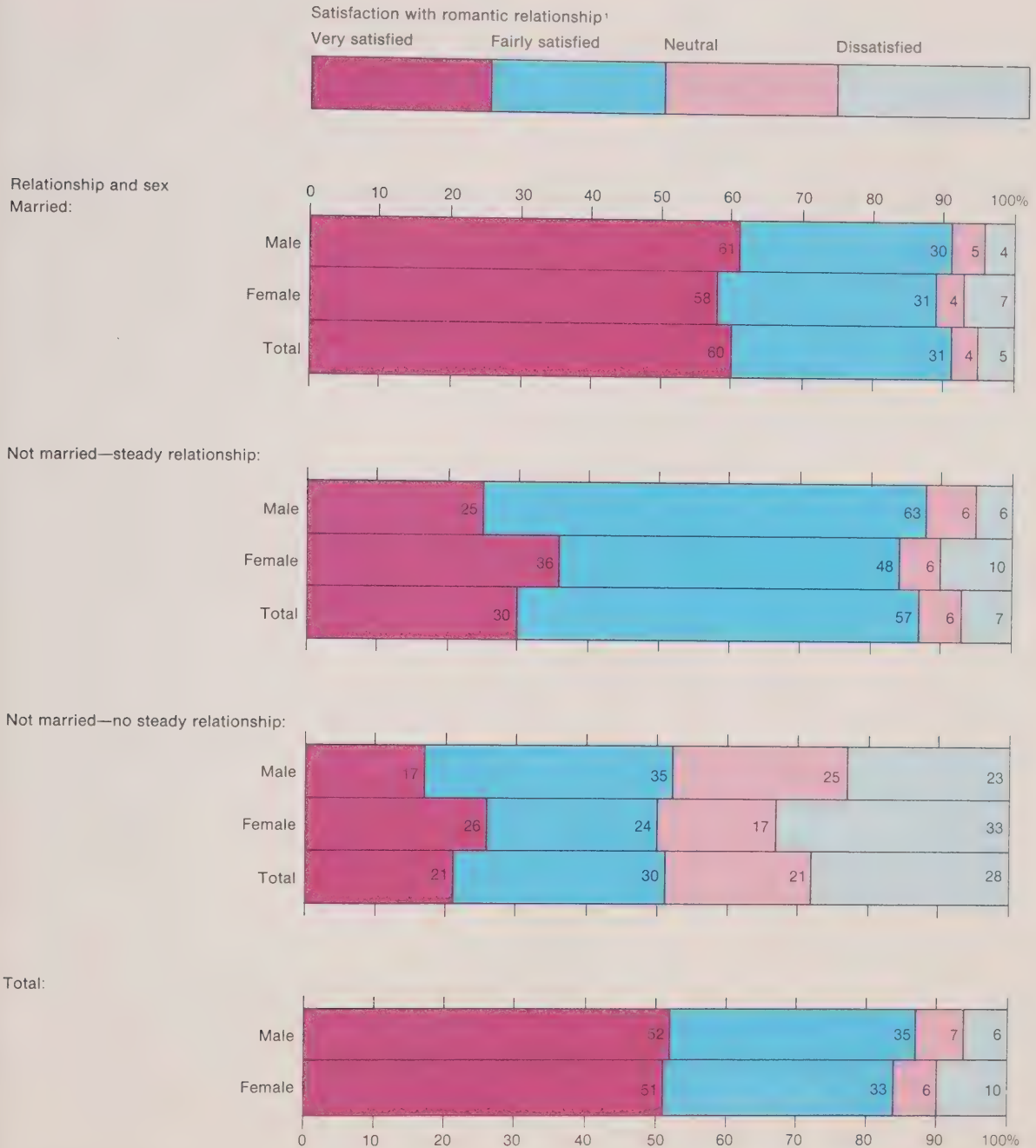
CHART 14.8
Job satisfaction by education and sex



¹See Chart 14.2 and text for discussion of satisfaction scale.

²Education represents highest level completed. University includes community colleges.

CHART 14.9
Satisfaction with romantic relationship by sex



¹See Chart 14.2 and text for discussion of satisfaction scale.

CHART 14.10
Satisfaction with romantic relationship by age



¹See Chart 14.2 and text for discussion of satisfaction scale.

²Older age groups not included because of insufficient respondents.

Vignettes of Canada and the United States



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Vignettes of Canada and the United States

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Too often, when considering social and economic developments in their own country, Canadians forget that Canada is a member of a much larger international community, and that much of what happens in Canada either reflects or is directly influenced by social forces in the wider world.

Since many aspects of change in Canada have their roots in social developments in other societies, the use of international comparative statistics may provide an additional framework within which to study changes in Canadian society. International data can function as a type of benchmark against which to measure the degree of social change in Canada, and by providing examples of similar (or dissimilar) trends can aid in the analysis, interpretation and forecasting of events in Canada.

This chapter compares Canada and the United States because of the close physical and cultural proximity between Canadians and Americans, and because the influence of the United States on Canada is far greater than that of any other country. These comparisons, however, are not in depth analyses of the characteristics of the United States and Canada. On the contrary, they should perhaps be regarded as a selection of interesting statistical snapshots of the two countries, along the lines of the social concerns dealt with in *Perspectives Canada*.

The choice of comparisons is governed by the availability of comparable data, and remains subject to a good many limitations, such as differences in data collection techniques, varying classifications and definitions related to major social phenomena, and inherent institutional differences.

Population

Canada is the largest country in the Western Hemisphere but much of its expanse is covered by mountainous regions, lakes, northern wilderness and Arctic tundra. No permanent settlement exists in approximately 89% of Canada's area, and more than half of Canada's population hugs the Canada-United States border in a narrow band across the entire country. Because of this, many Canadians are within easier reach of Americans than they are of Canadians in other regions of Canada.

Canadians are vastly outnumbered by their southern neighbours. There are roughly 10 times as many people living in the United States as there are in Canada — 23.5 million people in Canada compared to 218.5 million people in the United States in 1978 (*Chart 15.1*).

Despite the notion that the United States is a nation of immigrants, statistics from the past two decennial censuses for both countries show that Canada has a larger proportion of foreign-born people — 15% in Canada as against 5% in the United States (*Chart 15.2*). As a further indication of the different impact of immigration on the two countries, consider total immigration to the United States from 1951 to 1975 compared with that of Canada in the same period. In

the United States, the total inflow of immigrants represented only 1% of the total population in 1975, while in Canada the total inflow of immigrants accounted for nearly 17% of the 1975 population (*Table 15.3*). However, since only 15% of the total Canadian population are foreign born, it appears that many immigrants to Canada leave again.

Throughout history more Canadians have moved south than Americans have moved north. However, in the 1964 to 1975 decade, a reversal of this trend took place. Migration to the United States from Canada decreased dramatically (by nearly 80%), while movement from the United States to Canada doubled by 1974. From 1971 to 1976, more people from the United States were moving to Canada than people from Canada moving south to the United States. In 1976, migration to Canada from the United States had dropped back down to its 1966 level (*Chart 15.4*).

Canada's population is generally younger than that of the United States. Canada tends to have higher child-dependency ratios and lower aged-dependency ratios,¹ and the median age of Canadians is 27.8 years compared to 29 years for Americans (*Charts 15.5 and 15.6*). Two factors appear to affect this: first, since the early 1950s Canada's birth rate has been higher than that of the United States.

Crude birth rates in Canada and the United States 1951-77

	1951	1961	1966	1971	1977
	<i>rate per 1,000 persons</i>				
Canada	27.1	26.0	19.3	17.6	15.5
United States	24.5	23.3	18.4	17.3	15.3

Source: *United Nations Demographic Yearbook, 1951, 1961, 1966, 1971 and 1977*, New York.

The second factor is that Canada's greater proportion of immigrants, who are generally younger than the total population, also tends to deflate the median age. For example, in 1976, of the 72,000 immigrants to Canada, 65% were 29 years of age or less, whereas only 54% of the total population were aged 29 or less.

Family

Marriage rates are slightly higher in the United States than in Canada — 8 per 1,000 for Canada to 10 per 1,000 in the United States (*Chart 15.7*). This may be due partly to higher remarriage rates in the United States (resulting partly from higher divorce rates). Although Canadian divorce rates increased dramatically after 1969 when divorce laws were relaxed, the 1976 American rate of 4.8 per 1,000 population was still twice the Canadian rate of 2.4. Marital status statistics for 1971 and 1976 show that the percentage of divorced people in the United States was well over twice that for Canada. The higher divorce rates are also reflected in the greater percentage of lone-parent families south of the border (*Chart 15.9*). Since life expectancy for females is now higher than that for males in both countries, and because the American population is older, it follows that there are more widows in the United States than in Canada.

Health

Given the slightly older American population, it is not surprising to find the crude American death rate higher than the Canadian rate. The American rate stood at 8.8 per 1,000 in 1977 versus 7.3 in Canada. The infant death rate is generally regarded as the best overall measure of health care in a nation, and Canada's is slightly better than that of the United States. The Canadian rate in 1975 was 15 per 1,000 as compared to 16 in the United States (*Chart 15.11*).

Both infant mortality rates and crude death rates, however, are limited as indicators of national health. An adult population with little inclination to reproduce might still be full of sick people. Until the introduction of the Canada Health Survey in 1976, there was no overall record of sick people in Canada. The best comprehensive record of illnesses not resulting in death was the time series of reportable infectious diseases. These diseases include, among others, hepatitis, salmonella, tuberculosis, whooping cough, rubella, measles and venereal diseases. Taking all these diseases together, the American new case rate per 100,000 inhabitants is typically higher than that of Canada (*Table 15.12*); however, this is due almost entirely to the relative size of the venereal disease rate. In Canada, for example, in 1976, 68% of the cases of the selected reportable infectious diseases were cases of venereal disease. In the United States the figure was 87%. The collective disease rate for the remaining six types of diseases was higher in Canada than in the United States.

Death and disease rates provide a rough picture of the output of a health care system. They give some indication of how well a population is coping with its health care problems. On the input side, a nation's potential ability to cope with health care problems may be portrayed by the

number of available physicians. The United States has a better supply of physicians. In 1976 there were about 18 physicians for every 10,000 inhabitants in the United States, compared to about 15 in Canada (*Chart 15.13*).

Another interesting fact about health care is how much it costs. In 1975, total expenditures on health care in Canada were \$520 per person compared to \$620 in the United States (*Chart 15.14*). In Canada, governments pay approximately 75% of total health expenditures with private outlays accounting for the remainder. In the United States, governments pay 43% of the total while the private sector pays the remaining 57%. There is no doubt that the Health Insurance Programs in Canada take an enormous psychological burden off sick people and their families. Because these health expenditures are measured in different dollars, and because prices are different in the two countries, neither the quality nor the quantity of health care can be compared. Pain for pain, or cure for cure, it is really not known whether Canadians or Americans are getting a better deal for their money.

Although suicides account for a small fraction of the annual deaths in North America, the suicide rate per 100,000 inhabitants has always had a high degree of salience. In the 1964 to 1973 period, the Canadian and American rates crossed; that is, prior to 1971, American suicide rates were higher, but Canadian rates have been higher since that date. In any case, the North American rates seem to run about half the size of that other peaceful kingdom, Sweden.

Education

Accessibility to higher education has sometimes been measured by the percentage of the relevant age group enrolled in post-secondary institutions. Such data for Canada and the United States seem to put Canada at a disadvantage. However, it is difficult to assess how much these figures are affected by the differences in the educational systems, not only between the two countries, but also between the provinces within Canada. In 1976, for example, 19.4% of the 18- to 24-year-olds in Canada were enrolled in post-secondary institutions compared to 23.8% of the same age group in the United States (*Table 15.15*).

The increased participation in higher education with respect to women has been quite dramatic in the 1960s and 1970s. Women's participation in post-secondary education has been similar in both countries, but Canada still awards fewer university degrees to women at the Masters and Ph.D. levels. Canadian women, however, caught up with American women in the proportion receiving bachelor and first professional level degrees in the period 1962-76 (*Tables 15.16 and 15.17*).

As a further consideration of education in the two countries, it is worthwhile to note responses to the following Gallup question: "On the whole, would you say that you are satisfied or dissatisfied with your children's education (if childless, the education children are getting today)?" Since 1966, North Americans have become less satisfied with their children's education (*Chart 15.18*). In 1976, only 61% of Americans and 51% of Canadians answered this question with "satisfied". It may be, however, that such attitudes ebb and flow like the tides, for it is possible to find reports from teachers in medieval schools lamenting the stupidity of the children and the worthlessness of the schools.

Suicide rates in Canada and the United States, 1970 and 1974



Source: *Vital Statistics, Deaths*, Catalogue 84-206, 1974; *United Nations Demographic Yearbook*, 1974 and 1975, New York.

Work

In a world in which able-bodied people are expected to work,

unemployment is an undesirable state of affairs. Canada's total unemployment rate has climbed in the 1970s, and in 1978, was higher than that for the United States. However, unemployment rates for women are virtually the same for both countries (*Chart 15.19*).

Labour force participation rates for both countries were much the same for men from 1970 to 1978, hovering at just over 77%. The participation rate for women has been typically higher in the United States in the past, but Canada's female participation rate had almost caught up by 1978 (*Table 15.20*).

Income and expenditures

Median family incomes for both countries show a drastic change between 1965 and 1976. Median incomes increased by 55% from 1965 to 1976 in Canada, while they increased by only 19% in the United States during the same period (*Chart 15.21*).

According to a study comparing the tax systems between the two countries, the total tax burden (expressed as a percentage of Gross National Product) is somewhat higher in Canada than in the United States. This is also true of the indirect tax burden. However, total personal taxes as a percentage of personal income are nearly equal in the two countries. Comparisons, however, are extremely difficult, as both tax systems hide many institutional differences and, in addition, these statistics do not permit any judgments about the benefits people receive in the two countries (*Table 15.22*).

Additional indicators of living standards show that Americans consume more than do Canadians; in the United States, people have more cars, more television sets and more telephones per 1,000 persons, and their consumption of energy per person is higher than for Canadians (*Table 15.23*).

Crime and safety

The popular news media in North America give the impression that the United States is a particularly violent society while Canadian streets are somewhat safer. The images are partly a function of the dominant big-city influence; that is, what happens in New York is more likely to be reported than what happens in small-town America, but generally the facts tend to bear out the popular media impressions.

Crime rates reveal that there are about three times as many reported murders and rapes in the United States than in Canada, and two and one half times more robberies, as well as more car thefts per 100,000 population (*Table 15.24*).

National public opinion polls taken in Canada and the United States provide some opportunity to compare the opinions of the two populations on perceived safety from victimization. The following question has been asked repeatedly in both countries: "Is there any area around here — that is, within a mile — where you would be afraid to walk alone at night?". The surprising thing about the responses in the two countries is their similarity (*Chart 15.25*). In the United States in 1973, 41% of respondents in a national sample answered "yes", compared to 37% of a national Canadian sample the following year. The result is an interesting case of two countries with fairly distinct reported crime rates, but with similar rates of reported feelings of insecurity about walking local streets at night.

In 1969, the following question, that was put to national

samples in both countries, was: "In your opinion, what should be the penalty or prison sentence for the following crimes: 'dope' peddling, armed robbery, arson and passing bad cheques?". In every case, about twice as many Canadians as Americans favoured giving offenders long prison sentences.

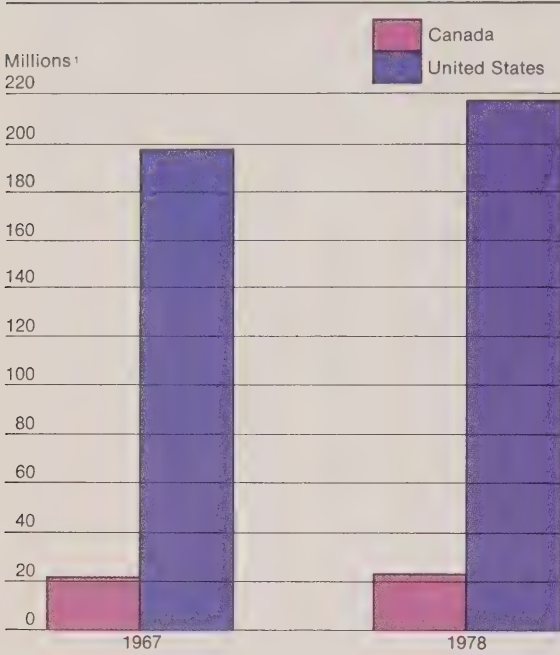
Statistics on military force and personnel, as expected, show a higher commitment to defence on the part of the United States than Canada. Ten out of every 1,000 inhabitants were part of the armed forces personnel in the United States compared to approximately three out of every 1,000 in Canada in 1975 (*Chart 15.27*). Military expenditures in Canada represented 2% of GNP and cost \$127 per person, while in the United States, they amounted to 6% of GNP and cost \$390 per person in 1975.²

Footnotes

¹Dependency ratios represent the ratio of persons under 15 years of age (young) and 65 years and over (old) to the population 15-64 years of age.

²Figures from the international comparisons chapter in Statistical Abstract of the United States, 1977, and are based on U.S. 1974 dollars.

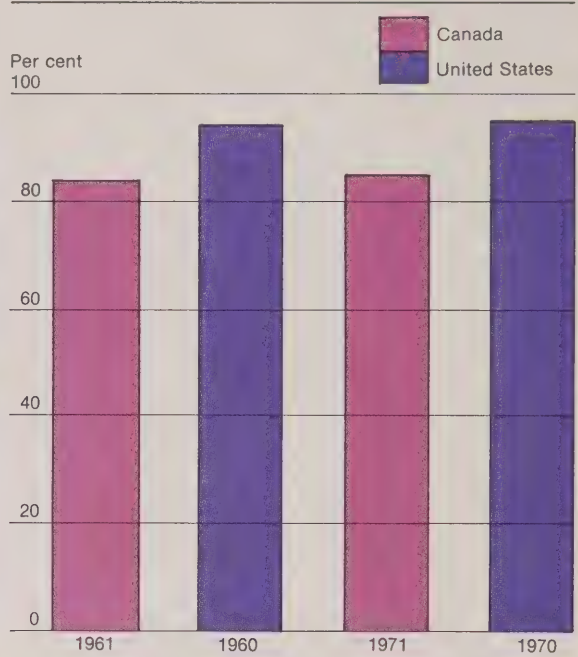
CHART 15.1
Population of Canada and the United States,
1967 and 1978



¹Figures are mid-year estimates.

Source: *Main Economic Indicators*, O.E.C.D., Paris, 1979.

CHART 15.2
Proportion of the Canadian and American populations
that is native born, 1960-61 and 1970-71



Source: *Place of Birth and Citizenship of Canada's Population, 1971 Census of Canada, Profile Studies, Catalogue 99-711*, by M.V. George; *Statistical Abstract of the United States, 1974*, U.S. Department of Commerce, Washington, D.C.

TABLE 15.3
Immigration to Canada and the United States, 1951-75

	1951-60	1961-70	1971-75	1951-75
Immigration (in thousands):				
Canada	1,575	1,410	835	3,820
United States	2,515	3,322	1,936	7,773
Immigrants as a percentage of population at end of period:				
Canada	8.8	6.6	3.7	16.7
United States	1.4	1.6	0.9	1.3

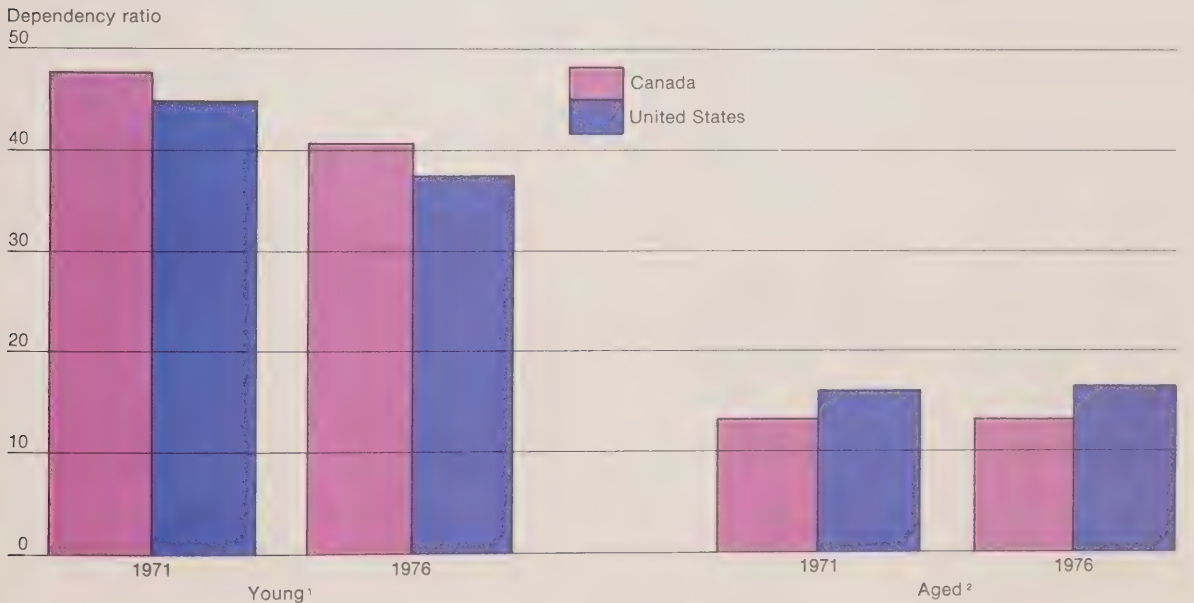
Source: *Immigration Statistics*, Department of Manpower and Immigration, 1976; *International and Interprovincial Migration in Canada*, Catalogue 91-208, 1977; *Estimates of the Population for Canada and the Provinces*, Catalogue 91-201; *Social Indicators 1976*, U.S. Department of Commerce, Washington, D.C.

CHART 15.4
Migration between Canada and the United States, 1964-1975



Source: *International and Interprovincial Migration in Canada*, Catalogue 91-208; *Immigration Statistics*, Department of Manpower and Immigration, Ottawa, 1964-1976.

CHART 15.5
Dependency ratios in Canada and the United States, 1971 and 1976

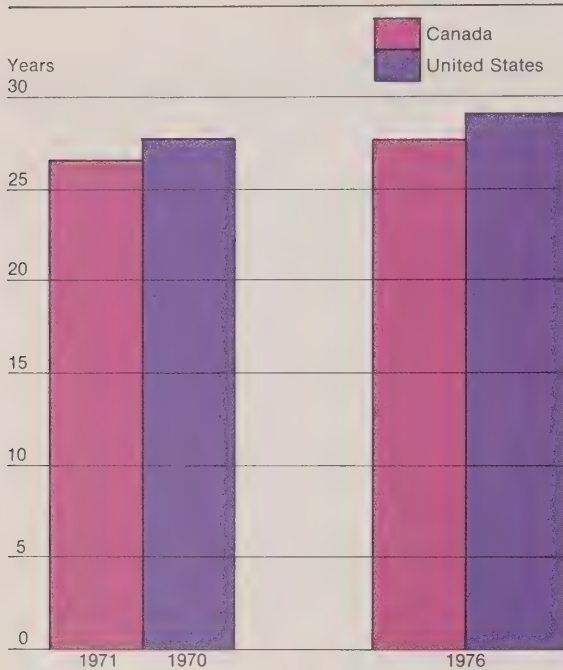


¹Represents the population under 15 years of age as a percentage of the population aged 15-64 years.

²Represents the population 65 years and over as a percentage of the population aged 15-64 years.

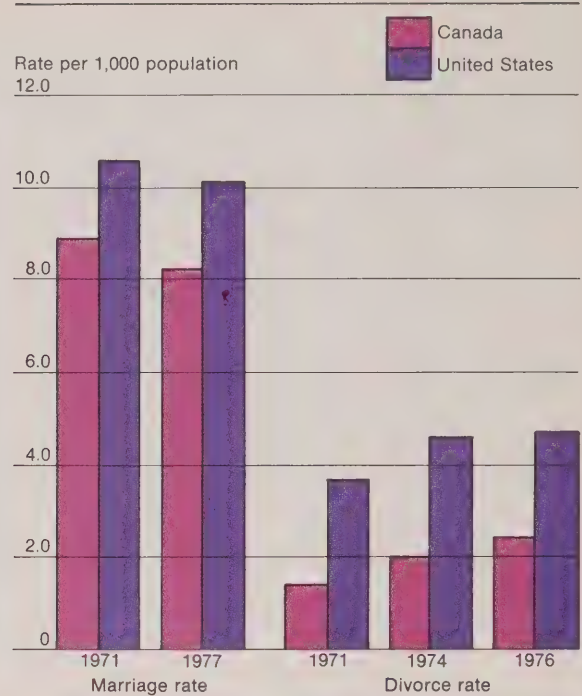
Source: *1971 Census of Canada*, Catalogue 92-772; *1976 Census of Canada*, Catalogue 92-832; *Health, United States, 1978*, U.S. Department of Health, Education and Welfare, Publication No. 78-1232, Washington, D.C.

CHART 15.6
Median age of Canadians and Americans,
1970-71 and 1976



Source: 1971 Census of Canada, Catalogue 92-716; 1976 Census of Canada, Catalogue 92-832; United States Current Population Reports, Series P20, No. 307, U.S. Department of Commerce, Washington, D.C., 1977.

CHART 15.7
Crude marriage and divorce rates in Canada
and the United States, 1971-77



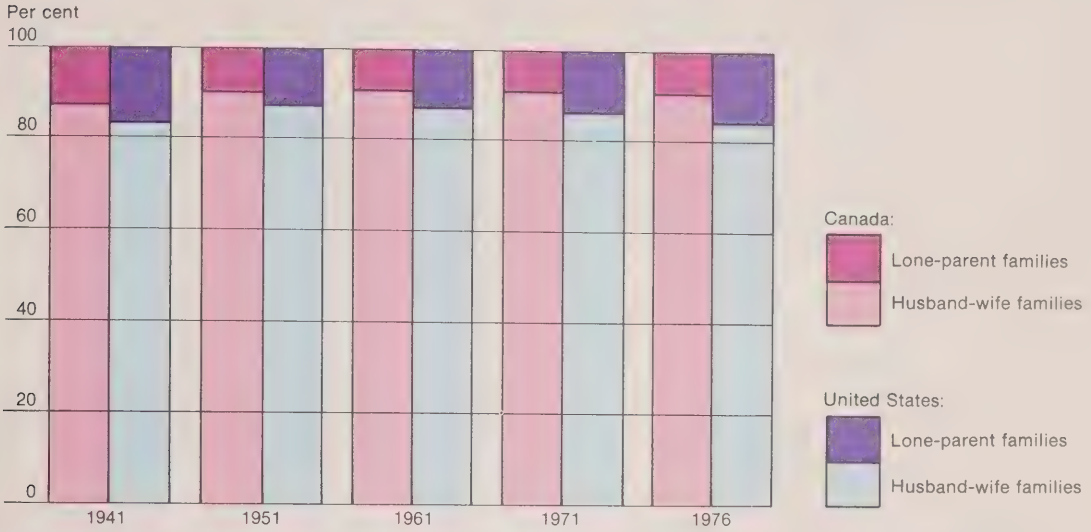
Source: Vital Statistics, Marriages and Divorces, Catalogue 84-205, 1976 and 1977; Statistical Abstract of the United States, 1977, U.S. Department of Commerce, Washington, D.C.

TABLE 15.8
Marital status of the Canadian and American population
14 years of age and over, by sex, 1971 and 1976

	Canada		United States	
	1971	1976	1971	1976
	<i>per cent</i>			
Males:				
Single	31.6	31.4	28.8	29.8
Married	64.9	64.9	65.8	64.3
Widowed	2.5	2.3	2.8	2.3
Divorced	1.0	1.4	2.5	3.6
Total	100.0	100.0	100.0	100.0
Females:				
Single	25.0	24.6	22.5	23.0
Married	63.9	63.5	61.5	60.0
Widowed	9.8	9.9	12.5	11.8
Divorced	1.3	2.1	3.6	5.2
Total	100.0	100.0	100.0	100.0

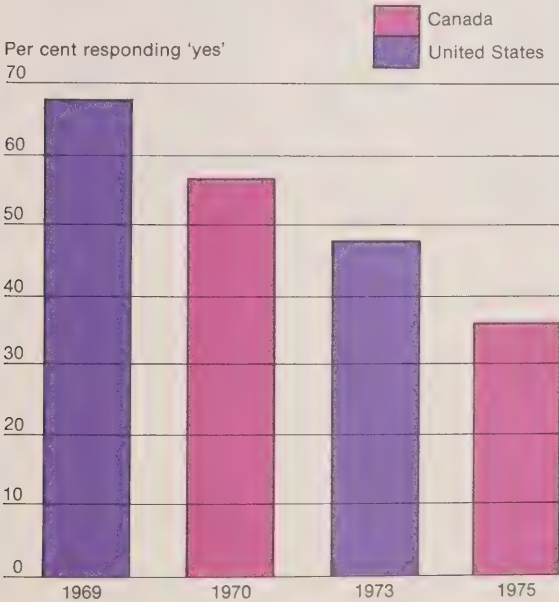
Source: Unpublished data from Housing and Families Group, Census Characteristics Division, Statistics Canada, U.S. Current Population Report, Series P. 20 No. 225, and P. 20 No. 306, U.S. Department of Commerce, Washington, D.C., 1971 and 1977.

CHART 15.9
Husband-wife and lone-parent families in Canada and the United States, 1941-76



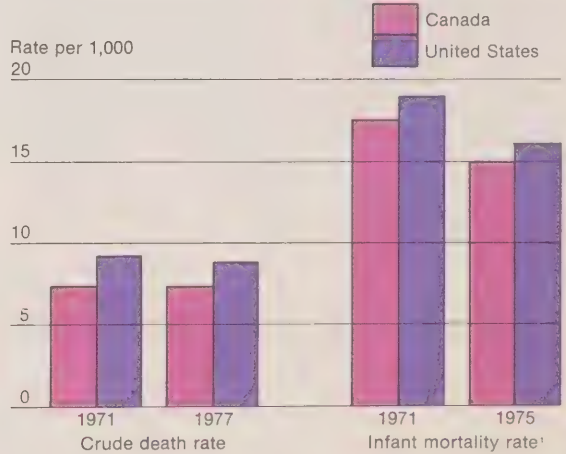
Source: 1941 Census of Canada, Vol. I; 1951 Census of Canada, Vol. III; 1961 Census of Canada, Catalogue 93-516; 1976 Census of Canada, Catalogue 93-822; United States Current Population Reports, Series P-20, No. 313, U.S. Department of Commerce, Washington, D.C., 1977.

CHART 15.10
Attitudes toward sexual permissiveness: responses to the question "do you think it is wrong to have sex relations before marriage?"



Source: The Gallup Opinion Index, August, 1973; Toronto Star, March 29, 1975.

CHART 15.11
Crude death and infant mortality rates for Canada and the United States, 1971-77



¹Rate per 1,000 births.

Source: Vital Statistics, Deaths, Catalogue 84-206, 1977; 1976 Statistical Year Book, United Nations, New York; United Nations, Monthly Bulletin of Statistics, Vol. XXXIII, No. 2, New York, February 1979.

TABLE 15.12
Reported cases of selected notifiable diseases in
Canada and the United States, 1976

	Canada	United States
	<i>rate per 100,000 population</i>	
Infectious hepatitis	18.3	22.6
Salmonella infections	12.9	10.7
Tuberculosis	11.4	15.0
Whooping cough	13.2	0.5
Rubella (German measles)	18.4	5.8
Measles	40.4	19.2
Venereal diseases	246.9	504.2

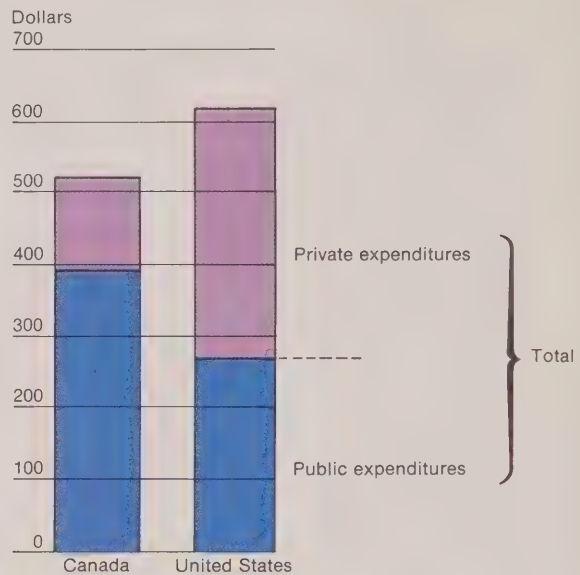
Source: *Annual Report of Notifiable Diseases*, Catalogue 82-201, 1976; *Health, United States, 1978*, U.S. Department of Health, Education and Welfare, Washington, D.C.

CHART 15.13
Physicians per 10,000 persons in Canada
and the United States, 1970 and 1976



Source: Canada Health Manpower Inventory, 1976 and 1977, Health and Welfare Canada; *Health, United States, 1978*, U.S. Department of Health, Education and Welfare, Washington, D.C.

CHART 15.14
Per person health expenditures in Canada
and the United States, 1975



Source: Unpublished data, Health Economics and Statistics Division, Health and Welfare Canada; *Health, United States, 1978*, U.S. Department of Health, Education and Welfare, Washington, D.C.

TABLE 15.15
Post-secondary enrolment rates for Canada and the
United States, by sex, 1968-76

	Canada			United States		
	Male	Female	Total	Male	Female	Total
	<i>per cent of population aged 18-24 years</i>					
1968	19.9	12.8	16.4	27.5	18.0	22.8
1969	22.0	13.5	17.3	27.9	18.4	23.2
1970	21.9	14.3	18.1	28.2	18.9	23.6
1971	22.3	14.6	18.5	28.0	19.1	23.6
1972	21.8	14.9	18.4	27.3	19.5	23.4
1973	22.0	15.8	18.9	27.0	19.9	23.5
1974	21.5	16.7	19.1	26.9	20.4	23.7
1975	21.6	17.6	19.6	28.2	21.3	24.8
1976	21.2	17.7	19.4	26.1	21.6	23.8

Source: *Out of School — Into the Labour Force*, Catalogue 81-570, 1978; *Social Indicators, 1976*, U.S. Department of Commerce, Washington, D.C.

TABLE 15.16
Women as a percentage of total full-time, post-secondary enrolment, Canada and the United States, 1968, 1971 and 1976

	Canada	United States
1968	38.9	39.2
1971	39.5	40.3
1976	45.1	44.9

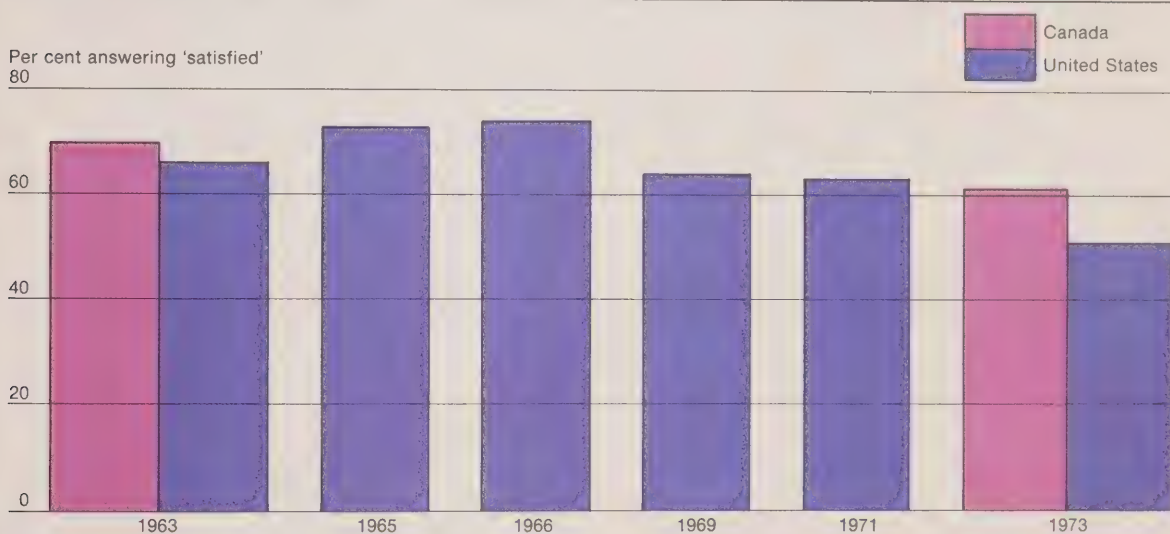
Source: *Out of School — Into the Labour Force*, Catalogue 81-570; *Social Indicators, 1976*, U.S. Department of Commerce, Washington, D.C.

TABLE 15.17
Proportion of university degrees awarded to women in Canada and the United States, 1962, 1970 and 1976

	1962	1970	1976
	per cent		
Bachelor's and first professional degrees			
Canada	27.8	38.0	44.6
United States	38.7	41.8	44.9
Masters degrees			
Canada	18.1	22.0	29.9
United States	32.8	40.1	45.3
Doctorates			
Canada	8.1	9.3	15.5
United States	10.7	14.3	22.9

Source: *Education in Canada, 1978*, Catalogue 81-229; *Social Indicators, 1976*, U.S. Department of Commerce, Washington, D.C.

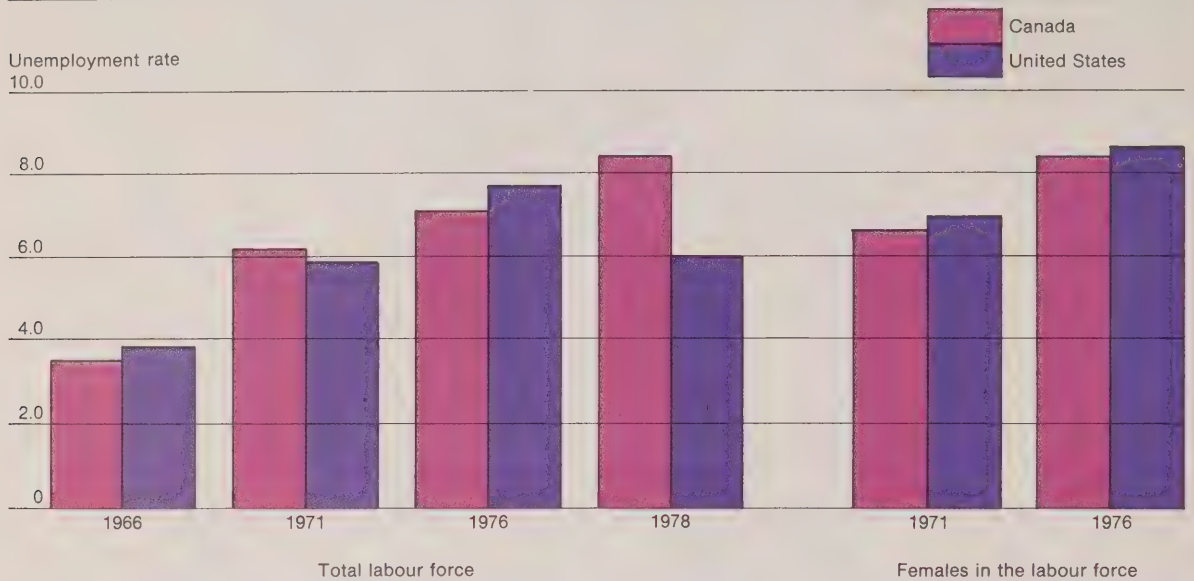
CHART 15.18
Attitudes toward education: responses to the question 'are you satisfied or dissatisfied with your children's education?'¹



¹Persons without children were asked to evaluate the education children in general were receiving.

Source: *CIPO* No. 305, November 1963; No. 328, May 1968; No. 343, September 1970; No. 360, July 1973; *AIPO* No. 675, July 1963; No. 715, August 1965; No. 734, September 1966; No. 777, March 1969; No. 836, August 1971; No. 878, September 1973.

CHART 15.19
Unemployment rate, Canada and the United States, 1 1966-78



¹Canada's unemployment rate is for persons 15 years of age and over while the United States unemployment rate is for persons 16 years of age and over.
Source: *Historical Labour Force Statistics Actual Data, Seasonal Factors, Seasonally Adjusted Data, Catalogue 71-201, 1978.*

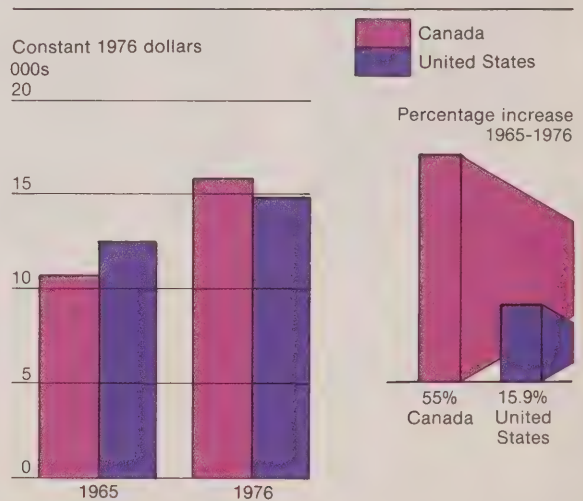
TABLE 15.20
Labour force participation rates in Canada and the United States,¹ by age and sex, 1970-78

	Canada			United States		
	Male	Female	Total	Male	Female	Total
1970	77.8	38.3	57.8	79.7	43.3	60.4
1976	77.6	45.2	61.1	77.5	47.3	61.6
1978 ²	77.9	47.8	62.6	77.7	48.4	62.3

¹Participation rates are for persons 16 years of age and over for the U.S. and for persons 15 years and over for Canada. Both countries rates do not include institutionalized persons and members of the Armed Forces.
²The U.S. figures are for 1977.

Source: *Historical Labour Force Statistics, Actual Data Seasonal Factors, Seasonally Adjusted Data, Catalogue 71-201, 1978; Employment and Training Report of the President, Washington, D.C., 1978.*

CHART 15.21
Median family income, Canada and the United States 1965 and 1976



Source: *Family Incomes, Catalogue 13-208, 1976; Statistical Abstract of the United States, U.S. Department of Commerce, Washington, D.C., 1977.*

TABLE 15.22
Taxes in Canada and the United States

	Total taxes		Total indirect taxes			
	Canada	United States	Canada		United States	
			<i>percentage of GNP</i>			
1972	32.1	29.7	13.8			9.3
1973	31.9	29.7	13.3			9.1
1974	33.0	30.4	13.9			9.0
1975	32.2	28.7	12.8			8.9
1976	32.1	29.7	12.7			8.7
1977	31.9	30.1	12.6			8.6
			<i>Personal taxes as a percentage of personal income</i>			
	1972	1973	1974	1975	1976	1977
Canada:						
Personal income tax	13.59	13.58	13.82	13.22	13.54	13.55
Social security taxes	1.27	1.25	1.44	1.50	1.57	1.53
Estate and gift taxes	0.27	0.21	0.15	0.11	0.09	0.09
Total	15.13	15.04	15.41	14.83	15.20	15.17
United States:						
Personal income tax	12.29	11.74	12.21	10.97	11.69	12.14
Social security taxes	2.94	3.26	3.39	3.28	3.28	3.27
Estate and gift taxes	0.70	0.60	0.52	0.49	0.50	0.58
Total	15.93	15.60	16.12	14.74	15.47	15.99

Source: *National Income and Expenditure Accounts*, Catalogue 13-001, 1977; *Survey of Current Business, The Tax Systems of Canada and the United States*, Department of Finance, Ottawa, 1978.

TABLE 15.23
Selected indicators of standard of living, Canada and the United States, 1974-76

	Canada	United States
Private consumption per person (in U.S. dollars — 1976)	4,780	5,110
Passenger cars per 1,000 persons (1974) ¹	374	598
Telephones per 1,000 persons (1975)	572	695
Television sets per 1,000 persons (1974)	366	571
Energy consumed per person (in kilograms — 1975)	9 880	10 999

¹ Figure for the United States is for 1975.

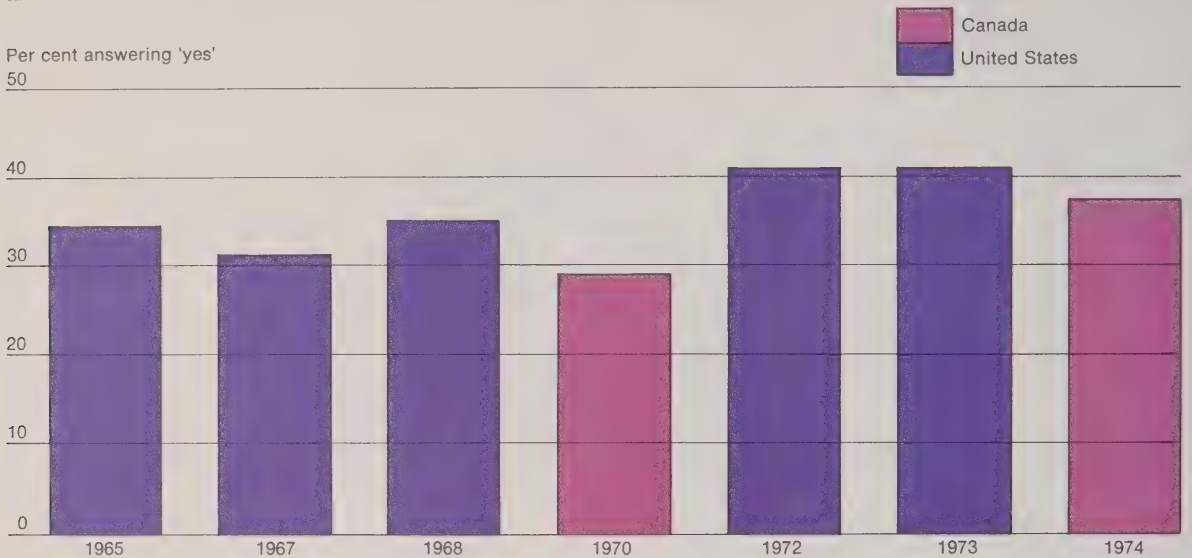
Source: *OECD Economic Surveys, Canada*, Paris, 1978; *Statistical Abstract of the United States, 1977*, U.S. Department of Commerce, Washington, D.C.

TABLE 15.24
Crime rates for selected offences, Canada and the United States, 1975

	Canada	United States
	<i>rate per 100,000 persons</i>	
Murder and manslaughter	3.1	9.6
Rape	8.1	26.3
Robbery	93.4	218.2
Theft of motor vehicle	398.2	469.4

Source: *Crime and Traffic Enforcement Statistics*, Catalogue 85-205, 1975; *Social Indicators, 1976*, U.S. Department of Commerce, Washington, D.C.

CHART 15.25
Attitudes toward personal safety: responses to the question 'is there any area within a mile of home where you would be afraid to walk alone at night?'



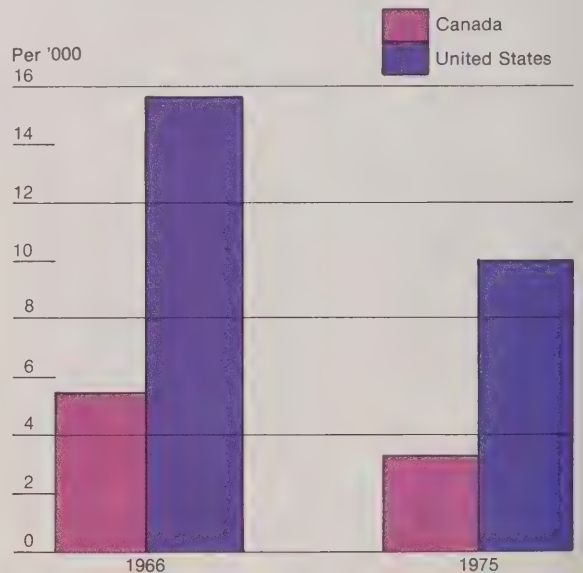
Source: *AIPO* No. 709, April 1965; No. 749, August 1967; No. 768, September 1968; No. 861, March 1972; *NORC* No. 9002, March 1973; *CIPO* No. 343, September 1970; *Toronto Star*, December 28, 1974, p. B3; H. Erskine, "The Polls: Fear of Violence and Crime," *Public Opinion Quarterly*, Spring 1974, p. 137.

CHART 15.26
Attitudes toward justice: persons favoring long jail sentences (over ten years) for selected crimes, 1969



Source: *CIPO*, June 1969.

CHART 15.27
Armed forces personnel per 1,000 population, 1966 and 1975



Source: *Statistical Abstract of the United States, 1977*, U.S. Department of Commerce, Washington, D.C.

Further Readings

1. <http://www.fishbase.org>

2. <http://www.fishbase.org/SpeciesCatalogue.php>

3. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa>

4. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

5. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

6. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

7. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

8. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

9. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

10. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

11. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

12. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

13. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

14. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

15. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

16. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

17. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

18. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

19. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

20. <http://www.fishbase.org/SpeciesCatalogue.php?genus=Channa&species=Channa>

Further readings

Chapter 1

POPULATION

Breton, R., Armstrong, J., and Kennedy, L., *The Social Impact of Changes in Population Size and Composition*, Employment and Immigration Canada, Ottawa, 1974.

George, M.V., *Population Growth in Canada: 1971 Census of Canada, Profile Studies*, Catalogue 99-701, Statistics Canada, Ottawa, 1976.

Grant, E.K., and Vanderkamp, J., *The Economic Causes and Effects of Migration: Canada, 1965-71*, Economic Council of Canada, Ottawa, 1976.

Henripin, J., *Immigration and Language Imbalance*, Employment and Immigration Canada, Ottawa, 1974.

Kalbach, W.E., *The Effect of Immigration on Population*, Employment and Immigration Canada, Ottawa, 1974.

Kalbach, W.E., and McVey, W.W., *The Demographic Bases of Canadian Society*, McGraw-Hill Co. of Canada Ltd., Toronto, 1971.

Kralt, J., *Language in Canada: 1971 Census of Canada, Profile Studies*, Catalogue 99-707, Statistics Canada, Ottawa, 1976.

Kubat, D., and Thornton, D., *A Statistical Profile of Canadian Society*, McGraw-Hill Ryerson Ltd., Toronto, 1974.

Marsden, Lorna, *Population Probe: Canada*, Copp Clark, Toronto, 1972.

Stone, L.O., *The Frequency of Geographic Mobility in the Population of Canada: 1971 Census of Canada, Analytic Study*, Catalogue 99-751, Statistics Canada, Ottawa, 1977.

Stone, L.O., and Fletcher, S., *Migration in Canada: 1971 Census of Canada, Profile Studies*, Catalogue 99-705, Statistics Canada, Ottawa, 1977.

Stone, L.O., and Marceau, C., *Canadian Population Trends and Public Policy Through the 1980s*, Institute for Research on Public Policy, McGill-Queen's University Press, Montreal and London, 1977.

Chapter 2

FAMILY

Balakrishnan, T.R., Kantner, J.F., and Allingham, J.D., *Fertility and Family Planning in a Canadian Metropolis*, McGill University Press, Montreal, 1975.

Boyd, Monica, "The Forgotten Minority: The Socio-economic Status of Divorced and Separated Women", in Marchak, P., ed., *The Working Sexes*, University of British Columbia Institute of Industrial Relations, Vancouver, 1977.

Davis, Kingsley, "The American Family in Relation to Demographic Change", *Population Reprint Series*, Reprint No. 425, International Population and Urban Research Institute of International Studies, University of California, Berkeley, California, 1974.

Glick, P.C., and Norton, A.J., "Marrying, Divorcing and Living Together in the U.S. Today", *Population Bulletin*, Vol. 32, No. 5, Population Reference Bureau, Washington, D.C., 1977.

Holmes, J., *Incomes of Canadian Families: 1971 Census of Canada, Profile Study*, Catalogue 99-726, Statistics Canada, Ottawa, 1977.

Ishwaran, K., ed., *The Canadian Family* (revised), Holt, Rinehart and Winston, Toronto, 1976.

Larson, Lyle E., ed., *The Canadian Family in Comparative Perspective*, Prentice-Hall, Scarborough, Ont., 1976.

Peters, J., "Divorce in Canada: A Demographic Profile", *Journal of Comparative Family Studies*, Vol. 7, No. 1, Summer, 1976.

Pryor, Edward T., "Family Income and Stratification in Canada: A Demographic Profile", in Wakil, P., ed., *Marriage, Family and Society, Canadian Perspectives*, Butterworth, Toronto, 1975.

Veevers, Jean, *The Family in Canada, 1971 Census of Canada, Profile Study*, Catalogue 99-725, Statistics Canada, Ottawa, 1977.

Wakil, Parvez, ed., *Marriage, Family and Society: Canadian Perspectives*, Butterworth, Toronto, 1975.

Wargon, Sylvia T., "Using Census Data for Research on the Family in Canada", *Journal of Comparative Family Studies*, Vol. 3, Spring, 1972.

"Census Data and Social Analysis: A Canadian Example", *Journal of Comparative Family Studies*, Vol. 5, Spring, 1974.

"The Study of Household and Family Units in Demography", *Journal of Marriage and the Family*, August 1974.

Chapter 3

HEALTH

Child Abuse and Neglect, Report to the House of Commons by the Standing Committee on Health, Welfare and Social Affairs, Ottawa, 1976.

Friedman, K.M., *Public Policy and the Smoking-Health Controversy: A Comparative Study*, Lexington Books, New York, 1975.

Health and Welfare Canada, *Nutrition, a National Priority*, Ottawa, 1973.

Josie, G.H., ed., *World Health Organization International Collaborative Study of Medical Care Utilization - Report on Basic Canadian Data*, University of Saskatchewan, Regina, 1973.

Lalonde, Marc, *A New Perspective on the Health of Canadians*, Health and Welfare Canada, Ottawa, 1974.

Mansfield, N.J.H., "Mother's Little Helper? Amphetamine and Barbiturate Abuse", *Canada's Mental Health*, 17(5), 1969.

Simpson, H.M., Warren, R.A., Page-Valin, L., and Collard, D., *Analysis of Fatal Crashes in Canada, 1976, Focus: The Impaired Driver*, Traffic Injury Research Foundation of Canada, Ottawa, 1978.

Smith, E.S.O., "Preventable Mortality: The Price of Neglect", *Proceedings of the 65th Annual Meeting of the Canadian Public Health Association*, June 1974.

U.S. Department of Health, Education and Welfare, *Healthy People*, Washington, D.C., 1979.

Chapter 4

EDUCATION

Carlton, R.A.N., "The Dilemma of Bilingual Education: Parallelism or Integration", in Mann, W.E., ed., *Canada: A Sociological Profile*, Copp Clark Publishing Company, Toronto, 1971.

Education, Change and Society: A Sociology of Canadian Education, Gage, Toronto, 1977.

Chaiton, A., and McDonald, N., eds., *Canadian Schools and Canadian Identity*, Gage, Toronto, 1977.

Harvey, E.B., *Occupations, Graduates and the Labour Force*, Ontario Institute for Studies in Education, Toronto, 1975.

Harvey, E.B., and Lennards, J.I., *Key Issues in Higher Education*, Ontario Institute for Studies in Education, Toronto, 1973.

Hutcheon, P. Duffy, *The Sociology of Canadian Education*, Reinhold, Toronto, 1975.

Lawr, E., and Gidney, R., eds., *Educating Canadians: A Documentary History of Public Education*, Van Nostrand and Reinhold, Toronto, 1973.

Lockhart, A., "Educational Policy Development in Canada: A Critique of the Past and a Case for the Future", in Carlton, R.A., Colley, L., and MacKinnon, W.J., eds., *Education, Change and Society*, Gage, Toronto, 1977.

Martin, W.B.W., *Canadian Education: A Sociological Analysis*, Prentice-Hall, Scarborough, Ont., 1978.

Morrison, T., and Burton, A., eds., *Options: Reforms and Alternatives for Canadian Education*, Holt, Rinehart and Winston, Toronto, 1973.

Ostry, Sylvia, ed., *Canadian Higher Education in the Seventies*, Information Canada, Ottawa, 1972.

Peitchinis, S.C., *Financing Post Secondary Education in Canada*, University of Alberta, Calgary, 1971.

Chapter 5

WORK

David, Jean-François, and Lux, André, *Employment Income in Canada*, Catalogue 99-720, Statistics Canada, Ottawa, May 1978.

Gover, David E., *Job Search Patterns in Canada*, Special Labour Force Studies Series A, No. 10, Catalogue 71-525, Statistics Canada, Ottawa, November 1975.

Kuman-Misir, L., *Industrial Trends in Canada, 1951-1971*, Catalogue 99-716, Statistics Canada, Ottawa, April 1978.

Maki, Dennis R., *Search Behavior in Canadian Job Markets*, Special Study No. 15, Economic Council of Canada, October 1971.

Monk, H., *Labour Force Participation in Canada*, Catalogue 99-712, Statistics Canada, Ottawa, March 1978.

Montigny, G., *The Occupational Composition of Canada's Labour Force*, Catalogue 99-718, Statistics Canada, Ottawa, March 1978.

Rafiq Kah, C.A., *Unemployment in Canada*, Catalogue 99-713, Statistics Canada, Ottawa, March 1978.

Simpson, S.K., and Cromie, M., *Where Canadians Work*, Catalogue 99-719, Statistics Canada, Ottawa, April 1978.

Zatko, J.A., *The Industrial Structure of Canada's Labour Force*, Catalogue 99-715, Statistics Canada, Ottawa, February 1978.

Chapter 6

INCOME AND CONSUMPTION

Adams, I., Cameron, W., Hill, B., and Penz, P., *The Real Poverty Report*, M.G. Hurtig, Edmonton, 1971.

Armstrong, D.E., Friesen, P.H., and Miller, D., "The Measurement of Income Distribution in Canada: Some Problems and Some Tentative Data", *Canadian Public Policy*, 11:4, Autumn, 1977.

Cloutier, J.E., *The Distribution of Benefits and Costs of Social Security in Canada, 1971-1975*, Economic Council of Canada, Discussion Paper No. 108, Ottawa, 1978.

Hamilton, R., and Pinard, M., "Poverty in Canada: Illusion and Reality", *The Canadian Review of Sociology and Anthropology*, 14:2, May 1977.

Henderson, D.W., and Rowley, J.C.R., *The Distribution and Evolution of Canadian Family Incomes, 1965-1973*, Economic Council of Canada, Discussion Paper No. 91, Ottawa, 1977.

Johnson, Leo A., *Poverty in Wealth: The Capitalist Labour Market and Income Distribution in Canada*, New Hogtown Press, Toronto, 1974.

"Illusions or Realities: Hamilton and Pinard's Approach to Poverty", *Canadian Review of Sociology and Anthropology*, 14:3, August 1977.

Love, R., and Wolfson, M.C., *Income Inequality: Statistical Methodology and Canadian Illustrations*, Information Canada, Ottawa, 1976.

Love, R., and Oja, G., "Low Income in Canada", *The Review of Income and Wealth*, XXIII(1), March 1977.

Maslove, A.M., *The Pattern of Taxation in Canada*, Economic Council of Canada, Ottawa, 1973.

McWhinney, I., and Champion, H.E., "The Canadian Experience with Recall-Diary Methods in Consumer Expenditure Surveys", *Annals of Economic and Social Measurement*, 111(2), 1974.

Chapter 7

SOCIAL SECURITY

Bird, R.M., *The Growth of Government Spending in Canada*, Canadian Tax Papers No. 51, Canadian Tax Foundation, Toronto, 1970.

Health and Welfare Canada, *Social Security Statistics, Canada and Provinces, 1950-51 to 1977-78*, Information Systems Directorate, Policy, Planning and Information Branch, Ottawa, 1979.

Information Canada, *Social Security in Canada*, Catalogue H13-1/20, Ottawa, 1974.

Johnson, A.W., "Canadian Social Security Review, 1973-75, The Central Issues", *Canadian Public Policy* 1:4, Autumn 1975.

Perry, David B., "The Federal-Provincial Fiscal Arrangements Introduced in 1977", *Canadian Tax Journals*, July-August 1977.

Statistics Canada, *Social Security National Programs, 1978*, Catalogue 86-201, Ottawa, 1978.

Willard, Dr. J.W., "The War on Poverty", *The Journal of the American Public Welfare Association*, 1966.

Chapter 8

LEISURE

Dumazedier, J., *The Sociology of Leisure*, Elsevier, Amsterdam, 1974.

Kaplan, Max, *Leisure Theory and Policy*, Wiley, New York, 1975.

Leisure, Lifestyle and Lifespan, Saunders, Philadelphia, 1979.

Krauss, R.G., *Recreation and Leisure in Modern Society*, Goodyear, Santa Monica, 1978.

Milton, B.G., *Social Status and Leisure Time Activities: National Survey Findings for Adult Canadians*, Canadian Sociology and Anthropology Association Monograph Series, No. 3, Montreal, 1975.

Meyer, P.A., *Recreation: A Study of Satisfaction and Substitutability in Recreation Available to Residents of Urban British Columbia*, Ministry of Recreation and Conservation, Vancouver, B.C., 1978.

Ng, D., Smith, S., Stewart, T., and Wardle, L., *Canadian Catalogue of Leisure Research Completed in 1976 and 1977*, Ontario Research Council on Leisure, Toronto, 1978.

Ontario Research Council on Leisure, *Methods and Techniques for Recreation Research and Leisure Studies*, Toronto, 1977.

Roberts, K., *Contemporary Society and the Growth of Leisure*, Longman, London, 1978.

Robinson, J.P., *How Americans Use Time: A Social-Psychological Analysis of Everyday Behaviour*, Praeger Publishers, New York, 1977.

Szalai, A., Converse, P., Feldheim, P., Scheuch, E., and Stone, P., *The Use of Time*, Mouton, The Hague, Netherlands, 1972.

Chapter 9

CRIME AND JUSTICE

Blanchard, J. and Cassidy, R.G., *Crime and the Criminal Process in Canada: 1880-1970 and Beyond*, CANJUS Project No. 21, Ministry of the Solicitor General, Ottawa, 1975.

Boydell, C.L., Gridstaff, C.F., and Whitehead, P.C., eds., *Deviant Behavior and Societal Reaction*, Holt, Rinehart and Winston, Toronto, 1972.

Cassidy, R.G., and Hopkinson, R.G., *Information and Statistics on the Canadian Criminal Justice System: Problems and Recommendations*, CANJUS Project No. 12, Ministry of the Solicitor General, Ottawa, 1974.

Greenaway, W.K., and Brickey, S.L., *Law and Social Control in Canada*, Prentice-Hall of Canada Ltd., Scarborough, Ont., 1978.

Hagan, J., *The Disreputable Pleasures: Crime and Deviance in Canada*, McGraw-Hill Ryerson Ltd., Toronto, 1977.

Law Reform Commission of Canada, *Studies on Imprisonment*, Ottawa, 1976.

MacDonald, L., *The Sociology of Law and Order*, Book Center, Montreal, 1976

McGrath, W.T., ed., *Crime and Its Treatment in Canada* (2nd Edition), Macmillan of Canada, Toronto, 1976.

Silverman, R.A., and Teevan, J.T., eds., *Crime in Canadian Society*, Butterworth and Co. (Canada) Ltd., Toronto, 1975.

Vaz, E.W., and Lodhi, A.Q., *Crime and Delinquency in Canada*, Prentice-Hall of Canada Ltd., Scarborough, Ont., 1979.

Walker, Nigel, *Crimes, Courts and Figures: An Introduction to Criminal Statistics*, Penguin Books, Middlesex, 1971.

Chapter 10

THE INDIANS AND MÉTIS OF CANADA

Adams, H., *Prison of Grass: Canada from the Native Point of View*, New Press, Toronto, 1975.

Dosman, J.E., *Indians: The Urban Dilemma*, McClelland and Stewart Ltd., Toronto, 1972.

Indian Claims Commission, *Indian Claims in Canada*, Queen's Printer, Ottawa, 1975.

Jeness, D., *The Indians of Canada* (Seventh Edition), Queen's Printer, Ottawa, 1967.

Nagler, Mark, *Natives Without a Home*, Longman Canada Ltd., Don Mills, Ont., 1975.

Nagler, M., ed., *Perspectives on the North American Indians*, The Carleton Library, No. 60, McClelland and Stewart Ltd., Toronto, 1972.

Northern Frontier, Northern Homeland; The Report of the McKenzie Valley Pipeline Inquiry: Volume I, Ottawa, 1977.

Patterson, P.E., *The Canadian Indian: A History Since 1500*, Collier-Macmillan Canada Ltd., Toronto, 1972.

Pitsoolak, D., and Eber, D., *People from Our Side: An Inuit Record of Seekooseekaak - The Land of the People of Cape Dorset, Baffin Island*, M.G. Hurtig Ltd., Edmonton, 1975.

Stanbury, W.T., *Success and Failure: Indians in Urban Society*, University of British Columbia Press, Vancouver, 1975.

Survey of Métis and Non-Status Indians: National Demographic and Labour Force Report, The Native Council of Canada and the Native Employment Division, Canada Employment and Immigration Commission, Ottawa, 1977.

Wood, K.S., *An Approach to Social Reporting in the Canadian North*, Institute of Public Affairs, Dalhousie University, Halifax, 1974.

Chapter 11

URBAN PROFILES

Bourne, L.S., and D.A. Griffith, *Spatial Organization of Urban Land Use*, Paper 69, University of Toronto, Toronto, 1975.

Chapin, F. Stuart, *Human Activity Patterns in the City: Things People Do In Time and In Space*, Wiley-Interscience, New York, 1974.

Gertler, Len and Crawley, Ron, *Changing Canadian Cities: The Next 25 Years*, McClelland and Stewart, Toronto, 1976.

Herbert, D.T., and Johnston, R.J., *Social Areas in Cities*, John Wiley, New York, 1976.

Jackson, John N., *The Canadian City: Space, Form and Quality*, McGraw-Hill Ryerson Ltd., Toronto, 1973.

Laconte, Pierre, ed., *The Environment of Human Settlements: Human Well Being in Cities*, Pergamon Press, Oxford, 1976.

Mercer, John, "On Continentalism Distinctiveness and Comparative Urban Geography: Canadian and American Cities", *Canadian Geographer*, Vol. XXIII, 2, Summer 1979.

Ministry of State for Urban Affairs, *Urban Indicators: Statistical Profiles of Quality of Life for Canadian Cities*, Ottawa, 1978.

Organization for Economic Co-operation and Development, *Urban Environmental Indicators*, Paris, 1978.

Organization for Economic Co-operation and Development, *For Better Urban Living*, Paris, 1978.

Proceedings of a Symposium: Suburbia, Costs, Consequences and Alternatives, Urban Studies Programme, York University, Downsview, Ont., 1977.

Ray, D. Michael et al, *Canadian Urban Trends*, Copp Clark Publishing, Toronto, 1977.

Yeates, Maurice, *Main Street, Windsor to Quebec City*, Macmillan Company of Canada Ltd., Toronto, 1975.

Chapter 12

ENVIRONMENT

Allen, Thomas B., *Vanishing Wildlife of North America*, The National Geographic Society, 1974.

Canadian Environmental Advisory Council, *State of the Canadian Environment, Annual Review, 1976*, Ottawa, 1978.

Energy, Mines and Resources Canada, *The National Atlas of Canada*, (Fourth edition revised), The Macmillan Company of Canada Ltd., Ottawa, 1974.

Environment Canada, *Canada and the Human Environment*, Ottawa, 1972.

Environment Canada, *Canada's Special Resource Lands*, Map Folio No. 4, Lands Directorate, Ottawa, 1979.

Hare, F.K., and Thomas, M.K., *Climate Canada*, Wiley Publishers of Canada Limited, Toronto, 1974.

Maim, J.S., and Carlisle, A., eds., *Conservation in Canada: A Conspectus*, Canadian Forestry Service Publication No. 1340, Ottawa, 1974.

McBoyle, G.R., and Sommerville, E., eds., *Canada's Natural Environment: Essays in Applied Geography*, Methuen, Toronto, 1976.

Organization for Economic Co-operation and Development, *The State of the Environment in OECD Member Countries*, Paris, 1979.

Statistics Canada, *Human Activity and the Environment*, Catalogue 11-509, Ottawa, 1978.

Warkentin, John, ed., *Canada; A Geographical Interpretation*, Canadian Association of Geographers, Methuen, Toronto, 1968.

Chapter 13

THE USE OF ENERGY

Argue, Robert, *Renewable Energy Resources: A Guide to the Literature*, Energy, Mines and Resources Canada, Catalogue M23-13/77-5, Ottawa, 1978.

Biswas, Asit K., *Energy and the Environment*, Environment Canada, Catalogue En.36-509/1, Ottawa, 1974.

Currie Warwick & Partners Ltd., *Energy Consumption Statistics: A Report to the Office of Energy Conservation, Energy, Mines and Resources Canada, Ottawa, 1974.*

* Energy, Mines and Resources Canada, *Energy in Canada: An Overview*, prepared for the 1978 meeting of the International Executive Council of the World Energy Conference, Catalogue M23-13/78-8, Ottawa, 1978.

Energy, Mines and Resources Canada, *Electric Power in Canada*, Catalogue M24-5/1978, Ottawa, 1978.

Energy, Mines and Resources Canada, *Energy Update, 1978*, Catalogue M23-13/78-2, Ottawa, 1978.

Gander, James, and Belaire, Fred, *Energy Futures for Canadians*, Report of a Study Prepared for Energy, Mines and Resources Canada, Catalogue M23-12/78-1, Ottawa, 1978.

Energy Futures for Canadians (Summary), Catalogue M27-21/1978, Ottawa, 1978.

Chapter 14

PUBLIC PERCEPTIONS ON THE QUALITY OF LIFE

Andrews, Frank, and Inglehart, Ronald, "The Structure of Subjective Well-Being in Nine Western Societies", *Social Indicators Research*, Volume 6, No. 1, January 1979.

Andrews, Frank, and Withey, Stephen, *Social Indicators of Well-Being; American Perception of Life Quality*, Plenum Press, New York, 1976.

Kennedy, Leslie, Northcott, Herbert, and Kenzel, Clifford, "Subjective Evaluation of Well-Being: Problems and Prospects", *Social Indicators Research*, Vol. 5, No. 4, October 1978.

Strumpel, B., ed., *Subjective Elements of Well-Being*, papers presented at a seminar of the OECD, Paris, May 1972, Paris, 1974.

Chapter 15

VIGNETTES OF CANADA AND THE UNITED STATES

The American Assembly, Columbia University, *The United States and Canada*, Prentice Hall, Englewood Cliffs, N.J., 1964.

Department of Finance, *The Tax Systems of Canada and the United States; A Study Comparing Levels of Taxation on Individuals and Business in the Two Countries*, Ottawa, November 1978.

Moffet, Samuel E., *The Americanization of Canada*, University of Toronto Press, Toronto, 1972.

Sell, Kenneth D., and Sell, Betty H., *Divorce in the United States, Canada and Great Britain; A Guide to Information Sources*, Gale Research Co., Detroit, 1978.

6th Seminar on Canadian-American Relations, University of Windsor, December 1964.