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EDUCATIONAL INEQUALITY: A COMPARISON BETWEEN CANADA AND POLAND AFTER WORLD WAR TWO

by

© Anna Holly

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled EDUCATIONAL INEQUALITY: A COMPARISON BETWEEN CANADA AND POLAND AFTER WORLD WAR TWO submitted by Anna Holly in partial fulfilment of the requirements for the degree of Master of Arts.

Supervisor

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ABSTRACT

This thesis purports to investigate the association between social stratification and educational inequality. Following Boudon's (1974) theory, an attempt was made to examine the relationship between income inequality, as an important dimension of social stratification, and the inequality of educational opportunity. The latter involves the distribution of education in the whole society (educational inequality) and the participation in higher education of the offspring of various social groups (educational mobility). According to the theory, it should be possible to observe a positive relationship between income inequality and educational inequality, and a negative relationship between income inequality and educational mobility. Present findings failed to support this theory. No systematic changes could be observed in the over-time analysis of the Canadian and Polish data. In view of the nature of the existing data, final conclusions were made with caution. It seemed, however, that the comparison of two countries during total post Second World War period should have facilitated the detection of predicted relationships, if such relationships existed. The outcomes of present investigation suggest that income inequality may be one of the factors of educational inequality and educational mobility, but the whole issue is too complex to be explained by a single factor. Other aspects of social stratification should probably be taken into consideration for a meaningful interpretation of the findings. It is also possible that changes in income distribution may influence educational inequality after a considerably longer period of time than examined here.

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CHAPTER I
INTRODUCTION

Egalitarian ideology holds that all individuals should have an equal access to educational and social opportunities. The limits to educational attainment or social advancement should be set by one's ability and desires rather than by ascriptive characteristics. In reality, however, some inequality of opportunity probably exists in all societies. Neither Western industrial nations nor Communist countries have achieved their "meritocratic" goals.

Frequently expressed concern about continuing educational inequality in industrial societies is reflected in various solutions proposed by different social scientists. Recently, a conviction that inequality of conditions is the major determinant of the inequality of opportunity may be detected in proposed or introduced changes in social stratification structure. Income inequality tends to be treated as an important and readily available indicator of social stratification (Boudon, 1974; Jencks, 1972). Moreover, a number of social scientists assumes that there is a positive relationship between income inequality and educational inequality (Boudon, 1974; Lydall, 1968; among others). Consequently, one way of reducing educational inequality would be to reduce income inequality.

The influence of the stratified social system on educational inequality can be examined in several ways. Firstly, the structure of social stratification, as it affects the distribution of education in the whole society, indicates the degree of educational inequality in absolute sense. Secondly, the relationship between social

stratification (income inequality) and educational inequality will be investigated in over-time changes of both variables. Finally, the impact of stratified structure on the process of stratification will be examined. That is, income inequality and educational inequality can be examined in relation to educational mobility. The term educational mobility refers to intergenerational comparison of parental socio-occupational status with offspring's educational attainment.

The central focus of the present investigation is the examination of the relationship between income inequality and educational inequality, and the way these two kinds of inequality influence the participation of different socio-occupational groups in higher education. In order to facilitate the detection of expected relationships, two main strategies have been adopted: a comparison between Canada and Poland, and over-time analysis of changes in both countries.

The choice of Canada and Poland for the present comparison is based on an expectation that their income distributions are sufficiently different to allow the detection of differences in the level of educational inequality, if a positive relationship between them exists. There is evidence that both Canada and Poland are stratified societies (Porter, 1965; Bauman, 1964), although different forces tend to shape social stratification in the West and in the Soviet block. Market forces may be the major determinants of inequality in the West, while political factors play a more decisive role in the Soviet system (Goldthrope, 1964). In general, Western societies tend to be perceived as more rigidly stratified than the Communist nations, as measured by status consistency[1] (Wesolowski, 1967) or by the distribution of income (Boudon, 1974). It is with respect

to the latter that the differences between Canada and Poland are most relevant to this thesis. In addition, Canada and Poland differ in so many respects that confounding effects of similar factors seem unlikely. Any differences in income and educational inequalities between these two countries should stand out clearly. Yet, the comparison is possible because some similarities between Canada and Poland can be observed. Both countries are industrial nations, both have experienced rapid economic growth and an unprecedented educational expansion in the past few decades, both are dependent upon their respective neighbours (the United States and the Soviet Union), and both tend to express egalitarian ideals.

In the over-time analysis an effort will be made to examine data for as long a period of time as possible (macro-time) in order to observe trends. Particular attention will be paid to co-fluctuations of variables (micro-time), that is, to the extent income inequality and educational inequality change together in year by year analyses (Czarnocki, 1975). The advantages of such a method over cross-sectional analysis must be stressed. In a cross-sectional study findings can be easily distorted and contribute to misleading conclusions (Boudon, 1974). In the over-time analysis the observable changes within and between countries should highlight any similarities and differences. In addition, over-time analyses tend to be less affected by omissions of certain elements of income than cross-sectional investigations. In view of the data available for this study, the advantages of over-time analysis are important. The comparability and particularly the reliability and validity of information (Cohn, 1978; Mieczkowski,

1972) put serious restrictions on the interpretation of the present findings.

Since social stratification of a society is reflected in the development of its educational system (Boudon, 1974), some attention must be paid to the Canadian and Polish educational systems in order to examine their respective effectiveness in increasing educational mobility among all social classes. The present research will be limited to a study of educational mobility at the post-secondary level of education, particularly university education or equivalent.[2] At this level, the impact of social stratification on the participation of students from various social backgrounds should be most illuminating.

The investigation will cover the period from the end of World War II to the present. In the case of Poland, some reference has to be made to pre-war years to detect the magnitude of change. In the case of Canada, the reference will be made to the early forties. The post-war period is of special interest because rapid educational development has been observed in both countries. Also, during this period, the educational system in Canada[3] has moved away from the colonial and rather elitiste British model towards the American, more egalitarian and open, educational system.[4] At the same time, Polish educational system has become partly reconstructed according to the Soviet model, i.e. as a centrally planned and controlled system (Szczepański, 1978).[5]

In the next chapter a review of literature pertaining to the present research will be presented, in order to develop hypotheses (Chapter II). In Chapter III selected information about Canada and

Poland will be described. CHapter IV will include sources and characteristics of data, as well as the description of measures and procedures used in the investigation. Findings and discussions will follow in Chapters V and VI, ending with conclusions in Chapter VII.

Footnotes

1. Status consistency is measured by the degree to which various aspects of social status (income, education, prestige, power) correlate with each other. Status inconsistency implies no correlation or negative correlation between various aspects of social status (Tumin, 1967).

2. The institutes of higher education in Poland include: 9 universities, 18 polytechnics, 7 agricultural academies, 5 economic academies, 12 pedagogical colleges, 10 medical academies, 6 colleges of fine arts, 7 colleges for music, 3 colleges for theatre and film, 2 naval colleges, 6 colleges of physical education, 1 college of social sciences, 2 theological academies (government supported), and one private institution, i.e. the Roman Catholic University of Lublin (Szczepański, 1978:7). In Canada, there are 66 universities (including 12 colleges of theology and 2 liberal arts colleges) and 189 non-university institutions of which 88 offer university transfer programs (Statistics Canada, Education in Canada, 1977:52, T.14).

3. There are 10 educational systems in Canada under provincial jurisdiction and two in the territories under the federal control. All, however, have three roughly comparable levels of schooling: elementary, secondary, and post-secondary (Porter, 1965).

4. The development of Canadian post-secondary institutions has been influenced by Scottish, French, and German institutions, besides the British and American (Katz, 1969).

5. Historical development of Polish institutions of higher education is described by Szczepański (1978). He says that traditional elements can still be detected in the contemporary educational system. In general, "... Humboldt's theories, which link research to teaching..." had much more influence on the development of the institutions of higher learning in Poland than the elitiste English traditions. Junior and community colleges have not been established in Poland (Szczepański, 1978:4).

CHAPTER II

REVIEW OF LITERATURE

Various theoretical approaches have tried to explain or predict inequality of opportunity in general, and educational inequality in particular. Earlier cross-sectional studies, for example, tended to emphasize the role of differentiated value systems among individuals from various social backgrounds in explaining educational inequality (Hyman, 1953). Environmental factors (Bernstein, 1958; Coleman, 1966), cultural deprivation and unequal "social distance" between starting points and desirable goals (Keller & Zavalloni, 1964), as well as class-specific genetic differences (Eckland, 1964), have been proposed as explanations of inequality. More recent research, particularly of the longitudinal kind, seems to shift emphasis away from cultural and value factors towards the structure of social stratification, or rather to one of its aspects, the distribution of income (Jencks, 1972; Lydall, 1968).

Two different trends can be detected in the latter research. Some social scientists maintain that greater equalization of educational opportunities would lead towards marked reduction of income inequality (e.g., Lydall, 1968). Others insist that a reduction of income inequality is required before any improvement in educational opportunities can be accomplished (Jencks, 1972; Boudon, 1974).

The access to higher education concerns individuals and societies. From the individual's point of view, formal education brings a variety of benefits to university graduates. In Canada, chances of upward mobility (Harvey & Charner, 1975), of gaining occupational prestige and economic rewards (Pineo & Porter, 1967), tend to increase with years of formal education. In Poland, university education may not

contribute greatly to an increase in monetary rewards (Wesołowski, 1967) but its prestige is high (Szczepański, 1978). Moreover, higher education is the best alternative to Party membership in social advancement.[1] Even within the Party ranks, formal education increasingly has become the major criterion for selecting political leaders (Bauman, 1964; Kolankiewicz, 1973b). From the societal point of view, education is valued for its manpower functions, for preparing an adequate number of highly skilled individuals to fill positions in complex industrial societies (Porter, 1967). How much the extension of educational systems has contributed to economic productivity is a controversial issue (Richardson, 1977; Beck, 1971). Nevertheless, societies tend to value higher education for "... creating a favorable climate for individual initiative and responsible action" (Firestone, 1969:134), and for developing cultural identity of the nation (Szczepański, 1974). Overall, education seems to be a desirable commodity in Canada and Poland, and an unequal distribution of education concerns social scientists in both countries.

Among various theories of the inequality of opportunity, Boudon's (1974) theory seems appropriate for the comparison of the inequality in the West and in Eastern Europe, and as such deserves a more detailed discussion.

Boudon's Theory of the Inequality of Educational Opportunity

Although Boudon's theory has been constructed for the Western societies, he repeatedly indicated that the comparably low level of educational inequality in the East European countries is at least partly attributable to drastic reduction in income disparities in these countries. Even if political organization in Eastern Europe "... has clearly been unable to build up 'classless societies', it has beyond doubt had equalitarian effects on the previously existing stratification systems in these countries" (Boudon, 1974:114). In addition, despite differences in educational systems, the problems of rising expectations and a growing individual demand for more education may be encountered both in the West and in Eastern Europe.

Boudon (1974) has considered earlier theoretical approaches in generating his theory of the inequality of educational opportunity (IEO). Noting the very limited success of various "compensatory" school reforms[2] and the persisting educational inequality in the industrial nations, in spite of great post World War II expansion of educational facilities, Boudon has rejected the notion that the inequality of educational opportunity can be effectively reduced without changes in social stratification structure.

With regard to the value theory, Boudon points out that it fails to account for the cases in which lower class members do attain university education. He argues that a "rationality factor" should be substituted for the "value factor". It seems unlikely that people would "... behave against their interests because of the values they are committed to, ... [Rather,] ... people behave according

to their interests in the sense that they attempt to maximize the utility of their decisions" (Boudon, 1974:111).

Boudon accepted the concepts of "cultural deprivation" and "social distance" as valid, and incorporated them into his model. Cultural differences involve what Boudon calls the primary effects of social stratification. For example, children from lower social backgrounds tend to be slower learners than those from higher social backgrounds. However, at a certain level of education all students who remain in school tend to show comparable school performance, regardless of socio-cultural origin. At this stage, cultural deprivation cannot be responsible for the fact that a higher proportion of children from low social backgrounds leave the school system.

At this point, a second mechanism of generating educational inequality may be detected, i.e. the secondary effects of social stratification. These effects are reflected in rational educational decisions, made upon due consideration of costs, benefits, and utility of further education. The three aspects of decision-making tend to vary with social background because the relative distance in mobility differs. In other words, educational decisions depend upon the original conditions of individuals from different social classes.

To some extent, cultural inequalities (the primary effects) may be reduced by various educational innovations. They also tend to become attenuated over time, when comparable school performance is reached by those who continue to attend school. It is more difficult to change decision-making considerations. Secondary

effects may be more persistent than the primary because they are exponential in nature. At each point in the school system when a student must make a decision, the probability of continuing education diminishes rapidly for the youngsters from low social backgrounds. Thus the type of educational system, which in turn is affected by the structure of stratified society, exerts some influence on educational decisions. Boudon maintains that the fewer the decision-making situations ("branching points") in the educational system, the greater the probability that a student will continue education. Consequently, educational inequality should be lower when compulsory schooling is longer and school curriculum less differentiated.

Overall, Boudon claims that educational reforms are less effective in reducing educational inequality than are direct changes in social stratification systems. Income distribution should be the main target of social reforms, since it is easier to measure and manipulate than other elements of stratified systems such as the distribution of power and prestige. The reduction of income inequality would make origin social positions more comparable among the members of different social classes. That is, the relative distance from the initial points to desirable social goals would become approximately the same as far as economic stratification is concerned. Hence, the costs, benefits, and utility of remaining in school would not be as differentiated as they tend to be in the society showing high level of income inequality.

In summary, two factors proposed by Boudon merit particular attention in comparing Canada and Poland: the type of educational system, and distribution of income. Boudon emphasizes the importance of the latter. He suggests that there is a positive relationship between income inequality and educational inequality. As one increases the other would increase and conversely, as one decreases the other one should decrease. However, in contrast to Lydall (1968), Boudon sees income inequality being responsible for educational inequality, not vice versa. In short, in Boudon's theory, the equality of conditions (equal income distribution) must be accomplished first, then the equality of opportunity (educational equality) may be realized.

Distribution of Income

In theory, as discussed above, income inequality is one of the major determinants of educational inequality. If it could be shown that one of the countries in this comparison, Canada or Poland, has more equal distribution of income than the other, it should be possible to predict in which of the two the level of educational inequality would be lower. Some understanding of what affects income distribution, however, seems necessary in order to interpret the data obtained for each country.

Economic development has been proposed and studied as one of the factors affecting the distribution of income. The evidence suggests that the level of economic development and political system of a given country may have a bearing on which factors should be considered.

Cutright (1967), for example, has indicated that a greater proportion of all farms which are rented would reflect a higher level of technology in Canada and thus reduction in income inequality. A greater proportion of labour force engaged in agriculture in Poland would, on the other hand, have an opposite effect on income inequality. Lydall (1968) also has detected a positive relationship between economic development and income equality in all studied countries. He found, however, that the Communist nations are "... in relation to level of economic development, all more equal than the non-communist countries, but amongst them the more highly industrialized seem to be more equal than others" (Lydall, 1968:157).

In another cross-national study of the size distribution of income, Paukert (1973) found some trends towards narrowing inequality of this distribution during post Second World War decades. At different levels of economic development different patterns and various degrees of inequality have emerged.[3] Yet, Paukert was unable to identify "... the factors causing the differences in inequality and the changes in the pattern in the course of economic development" (1973:122).

Among those "unidentified" factors could be the "purposive political action" (Goldthrope, 1964), the state's position in the world economy (Rubinson, 1976), or the distribution of power (Bornschier & Ballmer-Cao, 1979).[4] In the first case, political action could reduce income inequality regardless of economic development. In the second case, as the state's strength increases (or dependency decreases), income inequality should decline. Conversely, as the state's strength declines (the dependency increases), income inequality should rise. Finally, depending on who holds power, income

inequality may change. For example, inequality may increase when the penetration of multi-national corporations increases, or it may decline when bargaining power of the labour increases.

Lydall's (1968) over-time analysis of income inequality is of particular interest because Lydall detected several "new" relationships in the Canadian data. As indicated in Table 1, there seems to be an association between educational inequality (Lorenz Coefficient), economic development (agricultural labour force) and the size of immigrant labour force.

Table 1. Possible Influence in Earning Dispersion in Canada

Year	Lorenz Coefficient of Education*	Per Cent of Male Labour Force (15 and over) in Agriculture	Per Cent of Male Labour Force Born Outside Canada**
1941	.294	31.5	26.5
1951	.284	19.3	20.5
1961	.286	12.2	20.5

*For males aged 14 and over, or 15 and over, in the labour force.
**Males aged 14 and over in 1941-51, and 15 and over in 1961.

Source: Lydall, 1968:226, Table 7.9.

In the first decade, 1941-51, all tended to decrease simultaneously. When the proportion of immigrants stabilized (1951-61), educational inequality slightly increased. Lydall relates these findings to income inequality which decreased rapidly between 1941 and 1951 but later showed an increase. Lydall interprets his findings in the following manner. Education is a means to achieve economic progress. Economic development, in turn, reduces income inequality.

The quantity and quality of immigrants in the labour force intervene in this process. When proportionally fewer immigrants join the labour force, and the reliance on skills and education of immigrants diminishes, more native-born Canadians tend to receive more education and educational inequality decreases. When an opposite trend occurs, that is, when the proportion of immigrants in the labour force increases and the reliance on immigrants' skills is rising, educational inequality tends to increase.

With regard to Poland, also included in Lydall's study, the available data allowed him to state only that "... Polish dispersion - of manual as well as of all employees - declined significantly from 1957 to 1960, after which there was little change" (Lydall, 1968:198). Overall, income inequality seems slightly higher in Canada than in Poland but when Lydall grouped the countries in the rank order of dispersion, both Canada and Poland fell into the same, relatively low category.

Education as a major factor of income distribution has been also suggested by the findings of a recent Canadian study (Love, 1979). In this study, some inter-provincial differences in income inequality could be detected.[5] Similar findings were reported in a Polish study of income distribution in five major cities (Szafnicki, 1971). An increase in inequality during 1960s could be noticed in all five cities but more so in those which had lower initial (1960) levels of inequality (e.g., Łódź) than in those with high initial levels (e.g., Warsaw, Cracow).[6]

All in all, several points should be noted in the subsequent analysis of data. Income distribution may be influenced by: the

level of economic development, the state of economic dependency on other countries, direct political action, distribution of power, immigration policies, and regional factors.

Hypothesis I

At this point, a hypothesis pertaining to the relationship between the structure of inequality (income distribution) and educational inequality may be developed. It has been implied that Boudon's (1974) theory of IEO seems most vigorous and comprehensive and possibly applicable to East European societies. On this basis we predict:

1. a positive association between the two types of inequality, and
2. a causal relationship in which income inequality should influence educational inequality. So many factors are argued to have an impact on income inequality that some over-time fluctuations of inequality should be expected in both Canada and Poland.

HYPOTHESIS I:

Over time, changes in income inequality and educational inequality should occur "simultaneously" or within a short lag, and they should be in the same direction. To satisfy this hypothesis, observable trends in educational inequality should closely follow corresponding trends in income inequality in both Canada and Poland.

Education and Social Mobility

Educational mobility may be treated as a form of intergenerational mobility in which parental occupational position is compared to offspring's educational attainment. It is also a form of educational inequality since it involves the concept of representativeness of various social classes in higher education. In order to understand why some social classes tend to be overrepresented and other underrepresented in higher education, the role of education in upward mobility should be determined.

It seems that educational expansion by itself is not necessarily related to higher rates of upward mobility. In the United States, where educational system is highly developed, some evidence indicates that educational attainment of an individual has greater influence on his occupational achievement than social origin (Blau & Duncan, 1967).[7] However, Anderson (1961) failed to detect a clear relationship between education and social mobility in his study of three countries (the United States, Sweden, and the United Kingdom).[8] Moreover, industrial societies that differ considerably in their respective educational expansions (Smytrasiewicz, 1974) show similar amount of social mobility (Lipset & Zetterberg, 1956).

In a recent study of eleven nations, Hazelrigg and Garnier (1976) have observed differences in the degree to which educational attainment versus social inheritance affects occupational mobility across nations. However, these differences tend to be neutralized by changes in demands for talent and skills in the labour market. When educational attainment becomes less dependent on paternal occupation, more individuals tend to attain higher levels of education.

At the same time, there is usually an increase in demand for highly skilled labour. Consequently, to move upwards in the occupational ladder, an individual needs more education than he would require when the enrolment in universities was lower. Under such circumstances, the reduction of educational inequality tends to have little, if any, relationship with changes "... in societal rates of talent-skill circulation or the transmission of occupational status across generations" (Hazelrigg & Garnier, 1976:507).

This situation is frequently referred to as a phenomenon of "educational inflation", i.e. a process which occurs when educational system expands but relative distance between social classes as well as the structure of opportunities remain the same as before the educational expansion. "It means that particular qualifications 'buy' ever decreasing amounts of occupational status and income" (Richardson, 1977:424). Moreover, educational inflation tends to be associated with observed underemployment of highly educated individuals in many industrial societies, including Canada (Harvey & Charner, 1975; von Zur Muelen, 1972) and to some extent, Poland (Gmytrasiewicz, 1974).

As Richardson (1977) argues, in countries where educational opportunities increased dramatically during past few decades everybody may obtain more education, but there is no reduction in the inequality of social opportunities nor in the range of class differences. At best, there is "... a very loose fit between educational achievements and actual social mobility as the latter concept is generally understood. [In fact] ... a good deal, perhaps as much as half, of the mobility in industrial societies takes place independently of

formal education" (Richardson, 1977:422).

If indeed, formal education had a limited influence on social mobility, what then are the other determinants of social advancement? Boudon (1974) maintains that "Thus far it has been impossible to relate differences observed in the mobility structure of various societies to any particular factor" (1974:185). Yet, he suggests that a change in social stratification structure, i.e. more equal distribution of income, would at least decrease the influence of social inheritance and thus reduce the inequality of social opportunity.

Boudon's proposition seems to be supported by some empirical evidence. Tyree, et al. (1979), for example, examined the relation between income inequality and occupational mobility in twenty four nations (including Canada and Poland). They found that when income inequality increases, the rate of social mobility decreases. That is, "...here income differentials are greater, social origins are most powerful in determining social destination"[9] (Tyree, et al., 1979:418). Interestingly, however, in this study, the lambda coefficient for Canada is, -.184, and for Poland, .067. This indicates that social mobility is higher in Canada than in Poland, or conversely, that occupational inheritance is greater in Poland than in Canada. Yet, the difference in income inequality is small.[10]

Another finding indicates that "... the countries with the most mobility were the countries with histories of unusual immigration"[11] (Tyree, et al., 1979:420). These countries include Canada, the United States, Australia, and Israel. The researchers explain this finding in two ways. Firstly, parental status loses its influence

among immigrants. Hence there is less occupational inheritance. Secondly, immigrants tend to take jobs nearer the bottom of the occupational ladder and thus push native-born workers up the ladder.

Since education and occupation tend to be highly correlated (Blishen, 1958), the findings of Tyree, et al. (1979) imply that the weight of educational attainment in mobility may be dependent upon income distribution and the size of immigration. To this list of factors, others add the condition of labour market (Harvey & Charner, 1975; Myles & Sørensen, 1975), occupational structure at the time of fathers and of sons (Hazelrigg & Garnier, 1976), and the degree of control exerted by different groups in allocating jobs (Myles & Sørensen, 1975).

In Canadian studies, the weight of education in social mobility seems to vary with social classes. The access to Canadian elite[12] remains strictly controlled and social inheritance has the greatest importance (Porter, 1965; Clement, 1975). However, at the lower levels of the social structure upward mobility is less restricted and educational attainment counts for more. "For the general public, the long-term perpetuation of family status seems to be much less than found at the very upper end of Canadian society ... or at the very bottom of the social order" (Goyder & Curtis, 1977:316). There are also indications that social inheritance is higher in the sample which included farmers than in the sample in which offspring of farmers were excluded.[13]

Harvey and Charner (1975) have observed that relative to educational attainment, socio-economic background tends to lose its influence when the labour market is extremely open (1964) or closed (1968). Education counts for less when there is a middle market for skills (1960). Nevertheless, over the period under study (1960-1968), university graduates from low socio-economic backgrounds improved their high rate of upward mobility from 97.2% in 1960 to 98.2% in 1968, with only a slightly reversed trend in 1964 (96.1%). Upward mobility among the graduates from medium occupational backgrounds proceeded at a lower rate, while among university graduates from high socio-economic families a downward mobility increased.[14] These findings suggest that for individuals from low socio-economic classes university education is a good guarantee of moving upwards in the social hierarchy.

In Poland, the large size of agricultural labour force contributes to rather high degree of occupational inheritance. However, when rural population was removed from a study of mobility in the United States and Poland, occupational inheritance lost much of its weight in the latter nation.

> Within the Polish urban sector, the differentiated selective educational system almost completely mediates the effects of father's occupation on son's attainment, while in the United States the more fluid educational system allows substantial direct effect to remain.
>
> (Meyer, et al., 1979:986)

In other words, the effects of education on achieved non-manual occupation was much greater in Poland than in the United States.

Such findings are somewhat at odds with those of Tyree, et al. (1979) who found the greatest amount of occupational inheritance in Poland (lambda, .067), then in the United States (lambda, -.114), and least in Canada (lambda, -.184). In both studies, only urban male population was examined. When Meyer et al.'s (1979) findings are considered along with those of Cuneo and Curtis (1975) obtained for the Canadian urban male population (samples from Toronto and Montreal), direct effect of father's occupation on son's occupation is lowest for Poland (standardized regression coefficient: .04), next lowest for Canada (francophone men: .015, anglophone men: .089), and highest for the United States (.16). Conversely, direct effect of own education on occupation is highest in Poland (.65), and higher in Canada (francophone men: .592; anglophone men: .618) than in the United States (.44).[15] Perhaps these differences in findings illustrate the weakness of cross-sectional studies in examining change. Data collection methods tend to vary in different years, and the purpose may differ.

With regard to Poland, rapid industrialization and population transfers during the early postwar period had a major impact on high rate of social mobility. These moves saw mobility from agricultural to manual jobs and from manual to nonmanual occupations, not necessarily accompanied by educational attainment as a leading force (Pohoski, 1964). Since the sixties, higher education has become the major factor in upward mobility (Zagórski, 1971). Political merit remains an important factor but increasingly it must be combined with formal education.[16]

Hypothesis II

From the review of literature on social mobility, it seems that the expansion of educational systems may contribute to a depreciation of the value of education. It does not necessarily eliminate class differences. However, there is also some evidence that individuals from low social classes stand a good chance of improving their social position through higher education. Overall, the weight of education in relation to social inheritance tends to increase when: 1. income distribution becomes more equal; 2. the rate of industrialization increases; or 3. in the case of middle occupations to which an access is relatively less restricted. Yet, there is a degree of uncertainty with regard to the relationship between educational inequality and social mobility. The rate of mobility might not increase when more individuals obtain higher education. It is possible, however, that when more people attend university, the representation of low class members in higher education increases (i.e. educational mobility increases). Since both educational inequality and educational mobility are supposed to be affected by income inequality, changes in all three variables are predicted.

HYPOTHESIS II:

Over time, changes in income inequality are negatively linked to changes in educational mobility. Therefore, when income inequality decreases and educational inequality decreases (Hypothesis I), educational mobility should increase. That is, the representation in higher education of students from low socio-occupational background

should increase. Conversely, when income inequality increases over time, educational inequality would also increase and the representation of students from low socio-occupational background in higher education (educational mobility) should decrease. These results are predicted for both Canada and Poland. It seems reasonable to expect that a short lag in time may occur before the predicted change in educational mobility would take place.

Footnotes

1. After World War II, traditional avenues towards prestige and status, such as inherited wealth, title, or gentry heritage, "... were greatly curtailed or eliminated by economic crises, wars, ... the revolution, industrialization, and urbanization, /however/ education remained ... /a legitimate/ vehicle for upward mobility" (Fiszman, 1977:298).

2. Examples of school innovations for correcting cultural inequalities are: the Head Start Program in the U.S.A. (Coleman, 1966); composite high school introduced in Canada in 1960s (Lawr & Gidney, 1973); or the extension of compulsory schooling in Poland from seven to eight years in the mid-sixties (Rocznik Statystyczny Szkolnictwa 1975/76).

3. Interestingly, Paukert found that "... the share /of wealth/ of the poorest 40 per cent of population ... /is/ highest in the least developed group of countries ..." (1973:117). His findings also indicate that income distribution by size is more equal in the developed countries (Gini = .392) than in the developing countries (Gini = .467). (1973:120).

4. Gini coefficients of income inequality for selected countries:

Australia (1967/68)	.3198	Germany FR (1970)	.3918
U.K. (1973)	.3461	Italy (1969)	.3967
New Zealand (1971/72)	.3530	U.S.A. (1972)	.4090
Denmark (1966)	.3643	France (1970)	.4214
Canada (1969)	.3898	India (1967/68)	.4697

(Bornschier & Ballmer-Cao, 1979:503).

5. Reported Gini coefficients of income inequality in 1971 were: for Canada .4721; for Newfoundland .5031 (highest); and for B.C. .4538 (lowest). Regional disparity is quite obvious (Love, 1979:76, Table 4.1).

6. An increase in income inequality and regional differences can be noted in the coefficients of concentration of gross wages in the state economy in Poland. These coefficients in five Polish cities were:

Warsaw:	.253	in 1960,	.254	in 1967;
Gracow:	.249	"	.256	"
Wroc/aw:	.234	"	.248	"
Poznań:	.224	"	.241	"
/odź:	.213	"	.225	"
Poland:	.234	"	.253	"

(Szafnicki, 1971:43, Table 6).

7. The relationship between respondent's education and occupation: r=.596; the relationship between father's occupation and respondent's

occupation: r=.405 (Blau & Duncan, 1967:169).

8. For example, Anderson found that "... sons with low education lose status far less often and those with intermediate or higher levels of education rise far less often than would be the case if education were the sole determinant" (Anderson, 1961:174).

9. The correlation between lambda coefficients (index of mobility) and the "% Income to Top 5%" (index of inequality) is .764 (Tyree, et al., 1979:414-415).

10. The percentage of income as the share of the top 5% was 14.0% in Canada and 13.9% in Poland. The analysis was restricted to male urban population and the mobility between blue-collar and white-collar occupations only (Tyree, et al., 1979).

11. The correlation between mobility indices and the percentages of native-born population is .757 (Tyree, et al., 1979:420).

12. Definition of elite: "... an elite is a set of uppermost positions within any given institutional sphere that is arranged in a definite hierarchy" (Clement, 1975:5). The corporate elite in Canada in 1951 was divided between classes: 50%, upper class; 32%, middle class; 18%, working class. In 1972, the respective percentages were: 59.4%, 43.8%, and 5.8% (Clement, 1975:192, Table 21).

13. The correlation between respondent's education and occupation, r=.61; between father's occupation and son's occupation, r=.33, excluding farmers (Goyder & Curtis, 1977:308).

14. Upwardly mobile medium background university graduates: 86.9% in 1960; 71.4% in 1964; and 49.7% in 1968. Downwardly mobile high socio-economic background university graduates: 32.5% in 1960; 22.2% in 1964; and 41.1% in 1968 (Harvey & Charner, 1975:140).

15. The standardized regression coefficients for Poland and the United States taken from Meyer et al. (1979:384, Table 2); for Canada from Cuneo & Curtis (1975:13, Figure 2).

16. The findings of a study conducted in 1964 (H. Najduchowska, "Dyrektor przedsiębiorstwa" /Director of an enterprise/ Życie Warszawy, 1966 (July), nos. 29 and 31)indicate that among 1541 plant directors in the main branches of Polish industry, "... 60.6% of all managers come from manual workers' families, 18.6% are of peasant origin, 17.8% from nonmanual worker's families and 3.0% from other groups" (as reported in Zagórski, 1971:159). In the same study, it has been found that among younger directors (under 35 years of age) 87% had higher education, "... whereas of those over fifty-five only 40 per cent had higher education" (as reported in Kolankiewicz, 1973b:219).

CHAPTER III

CANADA AND POLAND

In the previous chapter, income distribution was discussed as a determinant of educational inequality and educational mobility. Now we turn to relevant similarities and differences in Canada and Poland, with particular attention to factors which may influence income inequality. This involves, most of all, economic development and the "satellite" status of both countries. Such a description is undertaken in order to make more specific predictions about the level of educational inequality and about changes in educational mobility in the respective countries. A brief description of basic differences in political organization, type of economy, ideology, and in population characteristics is presented to highlight differences so as to contribute to a better comparative examination of changes in inequality.

Basic Differences

Canada has a decentralized, federal political system based on democratic principles. Poland, on the other hand, has a highly centralized government based on the Soviet-style communist model. Canada is characterized by a market economy, while Poland by a planned economy. Even egalitarian ideology is based on different principles in Canada and in Poland.

In Canada, traditionally, "... both theory and policy are firmly embedded in the liberal ideology which holds that equality of opportunity is an acceptable substitute for equality of condition" (Richardson, 1977:419). The equality of educational opportunity tends

to be emphasized, partly because educational institutions can be reorganized without major changes in the stratification structure, except for replacing ascription by achievement principles (Richardson, 1977).

By contrast, according to the communist ideology, revolutionary restructuring of the social system in all its spheres is essential (Kasińska, 1970). After 1945, when the Communist Party (called the Polish United Workers Party since 1948) came to power, the adherence to the Marxist-Leninist ideology could be observed in "... the establishment of a socialized economy, planned changes in social class structure, and planned reconstruction of cultural institutions according to new ideological principles" (Szczepański, 1970:37). In short, in Poland the equalization of educational opportunities would be expected to follow changes both in the educational system and in the social stratification structure.

Obvious differences in population characteristics in Canada and Poland can be also observed. In the first place, Poland has more population than Canada, although Canada covers a territory 32 times as large as Poland.[1] The Canadian population, however, is more concentrated in urban areas than the Polish population (Table 2). Secondly, it must be noted that the Polish population became very homogeneous with respect to ethnicity, language, and religion, in the postwar years. Ethnic minorities account for less than two per cent of the total population, the language is Polish, and religion predominantly Roman Catholic (Szczepański, 1970). By contrast, the Canadian population is an ethnic mosaic. In the seventies, Anglo accounted for 44.7% of the total population, French for

28.6%, and other ethnic groups for 26.7%[2] (Clement, 1975:334) At the same time, the "mother tongue" of the Canadian population was distributed as follows: English 60.15%, French 26.86%, and the rest (12.99%) accounted for thirty different languages plus "other" (Canada Year Book 1973:213-214). Similarly, there is a great variety of religious denominations in Canada. In 1971, 46.2% of the total population was Roman Catholic, 11.8% belonged to the Anglican Church of Canada, and the remaining 42% were divided among fourteen denominations plus "other" (Canada Year Book 1973: 215-216).

These population characteristics imply that immigration and emigration patterns are quite different in Poland and in Canada. Since 1950, relatively little movement of people to and from Poland has occurred. As a consequence of the shift of Polish borders from the east to the west, a major evacuation of over two million Germans and the repatriation of Poles from the U.S.S.R. and from the West (total of about four million) took place before 1950 (Kosiński, 1963; Zygulski, 1962). In Canada, thousands of persons leave the country every year (particularly to the United States) and many more immigrate to this country annually.[3]

Economic Development

The degree of industrialization in Canada and Poland can be indicated by the level of urbanization, the proportion of labour force engaged in agriculture, by per capita GNP and per capita consumption of energy. All four indices (Tables 2 through 5) show that Canada was well ahead of Poland in 1940s through 1960s, and has retained this

position in the late 1970s. However, both countries have made a considerable progress. Urban population increased (Table 2), agricultural labour force decreased (Table 3), and per capita GNP (Table 4) as well as per capita consumption of energy (Table 5) increased.

Table 2. Urban Population in Canada and Poland, 1941-1977

Country	Year 1941	1951	1961	1971	1977
			Per Cent		
Canada	54.7	61.6	69.6	76.1	76.0
Poland	31.8*	39.7	48.5	52.8	54.0

*Percentage for 1946.

Source: J. Porter, Canadian Social Structure, 1967:54, Table A13; Canada Year Book 1973:211, T. 5.11; 1977 World Population, Data Sheet, Department of Sociology, University of Alberta, Memo77:1: Rocznik Demograficzny 1975:82, T. 2.

Between 1951 and 1977 Canada and Poland show different levels of urbanization but their rate of urbanization is similar. It can be noticed (Table 2) that Canada has reached the stage of urbanization so high that a reverse trend has began. That is, a small decrease could be observed between 1971 and 1977. Poland has been gaining in urban population in the 1970s, although at a lower rate than in previous decades.

In the comparison of urban/rural population it must be stressed that not all the population classified as rural is engaged in farming. In Canada, the great majority of rural population makes a living off nonagricultural sources.[4] In Poland, the opposite is true, but a trend can be noticed to increase the proportion of rural

population engaged in nonagricultural occupations.[5]

Table 3. Employment by Sectors of Economy* in Four Countries in Selected Years (%)

Country	Year	Sector Primary	Secondary	Tertiary	Total
			Per Cent		
Canada	1950a	23.7	35.6	40.7	100
	1961b	14.2	29.1	56.7	100
	1971b	9.0	28.3	62.7	100
Poland	1950c	57.0	23.0	20.0	100
	1960c	48.0	29.0	23.0	100
	1970d	35.6	36.4	28.0	100
USA	1950c	13.0	37.0	50.0	100
	1960e	6.5	28.8	64.7	100
	1973e	4.0	26.1	69.9	100
USSR	1950c	45.0	30.0	25.0	100
	1959c	40.0	32.0	28.0	100
	1973e	25.2	37.1	37.7	100

*Primary sector: agriculture, forestry;
Secondary sector: industry, construction;
Tertiary sector: services (Rajkiewicz, 1965:172).
The primary group in Canada includes "mining" and "fishing". In Poland, only "agriculture and forestry". In the case of other countries, the sectors are unspecified and not fully comparable (Mały Rocznik Statystyki Międzynarodowej, 1975:59).

Source:
(a) The Canada Year Book 1967:745, T.5;
(b) Canada Year Book 1978-79:365, T.8-10;
(c) Rajkiewicz, 1965:174-175, T.71;
(d) Rocznik Statystyczny 1977:4;, T.1(68);
(e) Mały Rocznik Statystyki Międzynarodowej 1975:58-59.

The decrease of the agricultural labour force in Canada and Poland can be observed in changes in the primary sector of economy over time (Table 3). This trend is noticed in all four countries. Similarly, all countries made gains in the tertiary sector. However, those gains were much higher in Canada and the United States than in Poland and the U.S.S.R.. At the same time (1950-1970s), the first two countries show over-time decrease in the secondary sector, while the last two countries show an increase in this sector.

Over-time changes indicate a few points. Both Canada and Poland are at somewhat lower level of industrialization than the United States and the Soviet Union, respectively. Canada still has a slightly higher proportion of people working in agriculture and industry than more industrialized U.S.A.. Poland seems to be at the stage when developing industry is capable of absorbing an increasing number of workers at a higher rate than the more developed industry in the U.S.S.R.. Nevertheless, the similarity in the economic development between Canada and the United States, and between Poland and the Soviet Union is noticeable. The first pair started at much higher level of industrialization (1950) than the second pair of countries, and retained its leading position in 1970s. Overall, the United States and the Soviet Union may serve as yardsticks to measure economic development in Canada and Poland, respectively.

Similar trends can be observed in the increase of per capita GNP in the four countries during the period 1963-1977.

Table 4. Economic Development in Four Countries Measured by Per Capita Gross National Product (GNP) in $US*, at Two Points in Time, 1963 and 1977

Country	Year 1963(a)	1977(b)	Ratio (b/a)
	Per Capita GNP		
Canada	1,667	6,650	3.99
Poland	468	2,910	6.22
USA	2,343	7,060	3.01
USSR	682	2,620	3.84

*Current US Dollars.

Source: R.W. Hodge, et al., "A Comparative Study of Occupational Prestige", 1966:361, T.2; 1977 World Population, Data Sheet, Department of Sociology, University of Alberta, Memo 77:1.

All countries made substantial gains. The initial per capita GNPs were considerably lower in Poland and the U.S.S.R. than in Canada and the U.S.A. in 1963, and remained lower in 1977 (Table 4). However, the rate of growth is highest in Poland (6.22) and next highest in Canada (3.99). From 1963 to 1977, the gap between Canada and the United States has narrowed. Poland was behind the Soviet Union in 1963, but managed to move ahead in 1977.

The rapid progress in Poland, a relative "late comer" to industrial world, is also indicated by relatively higher increase of per capita energy consumption than in Canada, between 1960 and 1971 (Table 5). At no point in time has the consumption of energy in Poland approached the level of consumption in Canada although the gap between the two countries has decreased slightly.

Table 5. Electrical Energy Consumption Per Capita (kwh) in Canada and Poland, 1960 and 1971

Country	Year 1960(a)	1971(b)	Ratio (b/a)
	Per Capita kwh		
Canada	6,100	9,800	1.60
Poland	987	2,134	2.16

Source: Canada Year Book 1973:593, T.13-12; Rocznik Statystyczny 1972:651, as reported by Matejko, 1974:29.

Consequently, in any comparison between Canada and Poland one should keep in mind that economic development is more advanced in the former. A High proportion of population in Poland is still classified as rural (more than 40%) and almost one-third of the Polish labour force is engaged in agriculture. Both countries, however, made a marked progress in developing economies during postwar decades.

Further, Canada and Poland share a similar position with regard to their respective powerful neighbours. Since the influence of the U.S.A. and the U.S.S.R. extends beyond pure economy to political, cultural, and social spheres, the term "satellite country" has been used with reference to both Canada and Poland (Porter, 1957; Beck, 1971). In the world economy, the satellite status implies a dependent position. There is evidence that foreign investment and the penetration of economy by multi-national corporations contribute to the state of dependency in Canada (Clement, 1975). In Poland, increasing borrowing of foreign (Western) capital does the same

(Fallenbuchl, 1977). The dependent position in the world economy, in turn, may affect income distribution of each country (Rubinson, 1976).

Finally, it must be remembered that in the postwar years, Poland had to recover from extremely severe war losses in human lives and material resources (Szczepański, 1970). Canada had been spared such an experience. Indeed, war conditions contributed greatly to rapid expansion of the Canadian industry and economy in general (Clement, 1975). Therefore, economic progress in both countries should be examined with the causes of original levels of development in mind.[6]

Educational Systems in Canada and Poland

The type of educational system is suggested by Boudon (1974) as one of the determinants of educational mobility. For this reason, major similarities and differences in the Canadian and Polish educational systems will be described. A rapid expansion of educational system since the end of Second World War is an experience shared by Canada and Poland. An "explosion" in education in both countries means that more youngsters have been available to enter school system than before the war, and a greater proportion of school age population has remained in school for a longer number of years.

At the elementary level of education, school attendance in Canada and Poland is the same (approaching one hundred per cent of appropriate age groups). At the secondary level, a steady improvement in school attendance has been achieved in both countries (Table 6).

Table 6. Population in School as Percentages of Selected Age Groups in Canada and Poland, 1937/38-1976/77

Year	Country: Canada		Poland		
Age Group:	15-19	18-24*	14-17	15-18	18-24*
			Per Cent		
1937/38			13.5		
1941	35.5				
1945/46			28.4		
1951	40.5				
1955/56			44.0		3.6
1960/61	58.5**	6.6	64.7		3.7
1965/66		8.6	73.2		5.0
1966/67		10.6			5.0
1970/71	72.5**		87.0	73.4	4.8
1971/72		12.0			4.9
1972/73	66.7	11.5			5.0
1974/75		11.9		78.4	5.8+
1975/76		12.2		78.6	6.1+
1976/77		12.4		80.0	6.6+

*Full-time enrolment in universities or equivalent institutions.
**Percentages for 1961, 1971, and 1973.
+Includes day-time and evening students; excludes extramural.

Sources:

Canada

Porter, 1967:113, T.G1; Census of Canada 1971, Bulletin 1.5: 1-1, T.1; Canada Year Book 1973:212, T.5-13; Rossides, 1970:158; Mosteller & Moynihan, 1972:58; Education in Canada. A Statistical Review for 1976/77, Statistics Canada, 1977:28, T.2; Educational Statistics Yearbook, OECD, 1975:95; (Own computations for some years).

Poland

Poland in Figures 1944-64, (GUS), 1964:86;
Rocznik Statystyczny 1972:458-459, T.1(630);
1976:435, T.2(547);
1977:360, T.1(546);
Rocznik Statystyczny Szkolnictwa 1975/76:10-13, T.5 and pp. 18-19, T.6;
Rocznik Demograficzny 1975:83-86, T.3;
Osiński, 1977:24, T.7.
(Own computations).

In Canada, the proportion of 15-19 year olds in school increased from 35.5% in 1941 to 72.5% in 1971. In Poland, the proportion of 14-17 year olds attending school increased to 87.0% in 1970/71 from the low 13.5% in 1937/38.[7] Different age groups are reported for each country, but as far as it is possible to detect, educational attendance at the secondary level became about the same in Canada and Poland by the mid 1950s.

These figures do not show what type of secondary education has been developed in each country. There are indications that Poland has put more emphasis on expanding vocational secondary programs, although the trend in both countries has seen an increase in such programs.[8] However, in Poland a considerable proportion of youngsters enroll in the incomplete secondary programs (basic vocational),[9] which have not been developed in Canada. The majority of secondary-age students is thus enrolled in the vocational programs in Poland, and in the general programs in Canada.

This difference in enrolment in general programs tends to be reflected in the proportions of the 18-24 year olds attending universities (or equivalent institutions) in Canada and Poland (Table 6). Although it is possible to enter university from non-terminal technical programs, most university students come from general academic programs in both countries. The proportion of the 18-24 age group in Canada and Poland almost doubled in university enrolment between 1960/61 and 1976/77. However, it took Poland all these years to reach in 1976 the same level of enrolment that already existed in Canada in 1960/61 (6.6% of the 18-24 age group).

In view of respective levels of educational development in the late thirties or the early forties, both Poland and Canada expanded post-secondary education considerably. The achieved levels, however, continue to differ, partly because initial level of educational development was lower in Poland than in Canada, and partly because different levels of industrialization would require different levels of education for the labour force. Also, financial limitations and characteristics of the educational system have restricted educational development in Poland.

In general, educational expansion in Canada and Poland during postwar decades indicates that a greater proportion of population has achieved higher levels of education than before the war. How such an expansion relates to educational inequality and educational mobility is of particular concern in the present investigation.

There are unique problems in Canada and Poland in implementing equalizing policies in the educational system. Canadian difficulties are well summarized by the External Examiners (1975). They are: "... geographical distances, firmly established and widespread decentralization of responsibility, strong regional disparities, and a multiplicity of cultural and linguistic minorities" (OECD, 1975b:6). In Poland, perhaps the greatest obstacles to improving educational opportunities lie in regional disparities, particularly rural/urban disparities (Zawadzki, 1973; Osiński, 1977; Fiszman, 1977), in a decline of egalitarianism among the members of "new intelligentsia" (Pirages, 1972), and in the lack of financial resources (Fiszman, 1972; Gaytrzmiewicz, 1974; Wołczyk, 1968).

In response to different incentives and needs for developing educational facilities, and reflecting traditional differences in the institutions of higher learning in North America and Eastern Europe, different educational systems have evolved in Canada and Poland.[10] Each system has some characteristics that may reduce educational inequality and others that may increase the inequality of educational opportunities. The Canadian educational system is called "open" because all secondary graduates from the academic programs have an access to university education, providing their grade average is acceptable and they pass final high school examination (Katz, 1969).[11] Also, there are relatively few departments or faculties that set a quota system on the admission of students (notably, all "professional" schools utilize quota system).

One disadvantage of such a system is that much is left to chance. With a high degree of free choice in selecting fields of study or without proper counselling, students may opt for university education that does not exactly fit the requirements of the labour market. Hence, the "utility" of education is questioned occasionally (Harvey, 1974). Another disadvantage of the Canadian system is the cost of higher education. This problem, however, has been somewhat reduced by various government programs for assisting needy students through loans, grants, and scholarships (Pike, 1970).

In Poland, education is free at all levels, and a variety of government sponsored scholarships is available to pay the room and board of students (Buttler, 1974). Financial difficulties and planning policies, however, tend to limit the number of openings at

universities. In the first case, the lack of adequate funds prevents the expansion of higher education to such an extent that all who wish to study could be accommodated. In the second case, it must be remembered that Polish educational system is centrally planned and controlled. It has clear-cut political, social, and economic functions. "In Poland, admission to an institution of higher education is also a guarantee of employment" (Szczepański, 1978:26). Therefore, the number of accepted students must match the requirements of economy. Although the fit between education and the labour market is not perfect (Gmytrasiewicz, 1974), there are grounds for assuming that it is better in Poland than in Canada. The "benefits and utility" of higher education should be recognized by the members of all social classes.

Due to restrictive admission policies, the selective procedures start early in the school system. Final acceptance to higher education depends on academic performance in the examination at the end of secondary schooling and in the entrance examination. Since candidates from rural and working class environment tend to receive lower marks, a preferential quota system has been introduced. A certain number of points is given to students of workers' and peasants' backgrounds. In practice, the point system has not been as effective as expected. The offspring of intelligentsia can accumulate sufficient number of points by performing well on examinations and compete on equal or better terms with the preferred candidates.

Overall, it appears that the actual costs of education is lower in Poland than in Canada. Job-related aspects of higher education also seem better in Poland than in Canada (benefits and utility of

education). In theory, the centrally controlled and imposed from above equalizing policies should be more effective (Poland) than various school reforms tried in decentralized system (Canada) in reducing educational inequality and in increasing educational mobility. However, the Canadian educational system has by far fewer "branching points" than the selective Polish system. The former has less streaming of students at the secondary level of education and fewer examinations. Also, better rural school facilities in Canada, as well as the practice of transporting rural children to schools in the cities, may prove to be quite effective in reducing rural/urban disparities.

Hypothesis III

The type of educational system may be an important factor in educational mobility (Boudon, 1974). In such a case, one could expect that the Canadian educational system should be more effective in improving educational opportunities than the Polish system. It is more open and has fewer "branching points" than the Polish system. However, various other factors may intervene, such as the cost of education, the utility of higher education, political action, or the rate of industrial growth. In addition, without previous knowledge to what an extent the revolutionary changes in Poland reduced the inequality of educational opportunities in that country, the prediction of actual rates of educational mobility in Canada and Poland is difficult. Yet, if income inequality is positively related to educational inequality (Hypothesis I) and negatively related to educational mobility (Hypothesis II) then a new hypothesis can be

developed.

HYPOTHESIS III:

Given the revolutionary changes in the postwar Poland, the reduction of income inequality should be greater in Poland than in Canada during early postwar period (approximately between 1945 and 1960s). Since it is expected that the reduction of income inequality will be greater in Poland than in Canada, a greater reduction in educational inequality and a greater increase in the rate of educational mobility should be observed in Poland than in Canada during the early postwar period (1945-1960s).

Footnotes

1. Population in 1977: Canada, 23.5 million;
Poland, 34.7 million;
(1977 World Population, Data Sheet, Department of Sociology, University of Alberta, Memo 77:1).
Territory: Canada, 9,976,139 sq. km. (Canada Year Book 1976-77:3)
Poland, 312,677 sq. km. (Rocznik Statystyczny 1968:1)

2. The category "other" includes, native Indians and Eskimos, and a variety of minorities, such as Scandinavian, Dutch, German, Jewish, Ukrainian, Polish, Italian, Russian, Hungarian, Asian, etc. (Porter, 1965; Blishen, 1970), in Canada.

3. In 1965, over fifty thousand Canadians emigrated to the United States. Almost twenty three thousand did the same in 1971 (Canada Year Book 1973:237). Many more people, however emigrate to Canada annually, e.g., 73,912 in 1950; 282,164 in 1957 (the peak immigration year in the postwar years), and 147,712 in 1970 (Statistics Canada, Historical Summary, 1970:8).

4. In Canada, 23.9% of the total population was classified as rural but only 6.6% of the total population was classified as "farm" population (i.e. making living off farming) in 1971 (Canada Year Book 1973:211).

5. In Poland, approximately fifty per cent of the total population was classified as rural and 38.4% as "farm" in 1968. By 1974, these percentages were 45.4% and 27.1%, respectively (Rocznik Statystyczny 1977:32; Rocznik Demograficzny 1975:82).

6. B. Czarnocki points out that in comparing economic development in Canada and Poland, "... the appropriateness of the comparison should be questioned. Economic goals cannot be set without due regard to the relevant capabilities. Canada's performance draws on vastly greater wealth of natural resources, accumulated capital (notably international capital) and technology. Also, neither the kind nor the level of industrialization attained by the two countries in the 1960's are comparable". (Poland 1950-1971: How Heavy the Hand?, Doctoral Dissertation from University of Wisconsin at Madison, 1975:5(143)-5(144).

7. The low proportion of the 14-17 age group in school in 1937/38 can be explained, to a large extent, by poor school facilities in the rural areas. At the time (1930s) when rural population accounted for more than 70% of the total Polish population, most village schools "... were incomplete with only four or even less classes... Before the war, only 27% of rural children attended primary (public)seven-form schools" (Poland in Figures 1944-64, 1964:81). During 1930s, secondary education remained, in effect a privilege reserved mostly for the offspring of gentry and intelligentsia parents (Nowakowska, 1977).

8. By 1960 in Canada, 68.2% of all post-compulsory secondary students (compulsory schooling, 9-10 years, depending on the province) enrolled in general programs and 31.8% in technical programs. By 1966, the respective percentages were 58.5% and 41.4% (Educational Statistics Yearbook, OECD, 1975:88). In Poland, 50% of all secondary students were enrolled in each type of program in 1960/61. By 1970/71, only 42.1% enrolled in general programs and 57.9% in technical-vocational programs (Rocznik Statystyczny 1977:360). These figures exclude students enrolled in the incomplete-secondary vocational programs.

9. After eight years of compulsory primary school in Poland, "Students who decide to undertake further education have three alternatives: about 50 percent of them enroll in basic vocational schools...; some 25 percent choose the technicum, that is a secondary vocational school; and the remaining 25 percent select the lycee, the secondary school of general studies" (Szczepański, 1978:13).

10. In the case of Canada, the problem of "brain drain" had to be resolved. During first decades after the war, it was customary to recompensate for the loss of skilled labour (mostly to the United States) through immigration (Porter, 1965). By the mid 1960s, popular demand for more education (Lawr & Gidney, 1973) and a degree of resentment among Canadian-born population that best jobs tended to be offered to immigrants (Forcese, 1975) put a pressure on the authorities to expand educational facilities.

In the case of Poland, from the beginning the expansion of education had been affected by two major problems. Firstly, the level of illiteracy in the prewar Poland was very high. About 18% of the population 14 years of age and over were considered illiterate in 1938 (Rajkiewicz, 1965:265). Secondly, the effects of war were particularly severe. About one-third of intelligentsia perished during the war, many of those who found themselves abroad did not return to Poland after the war, and in addition, war youth was undereducated due to the closure of all post-elementary schools (except a few vocational) during the Nazi occupation (Szczepański, 1970). Consequently, the task of rebuilding and expanding educational system was both very urgent and very difficult after 1945.

11. University admission policies differ somewhat from province to province and occasionally from year to year. It is "... usually contingent upon high school graduation" (Perspective Canada II, 1977:91).

CHAPTER IV

METHODOLOGY

Data: Sources and Problems

The data to examine the three hypotheses had been collected from the existing and available records of developments, particularly from the government publications of the respective countries. Occasionally, secondary sources based on government publications had to be used to fill the gaps in over-time sequence of events. The main sources for Canada were the statistical records and studies published by the Dominion Bureau of Statistics and later by Statistics Canada. For Poland, most data came from the publications of the official agency GUS (Główny Urząd Statystyczny, i.e. the Central Statistical Office). Some data, however, had to be supplemented from various sources, particularly from the research conducted by Rajkiewicz (1965) and Osiński (1977). All sources of data are carefully identified under each table.

Problems with comparability of data are numerous, primarily with regard to: 1. classification of social strata and of occupational groups; 2. nonsimultaneous observations; and 3. the reliability and purpose of collecting data. The occupational category "other" illustrates the classification problems. In the Canadian studies, "other" may refer to "not stated" in the records of manpower, or it may include pensioners, the ill, unemployed, deceased and occupations not reported (in the case of socio-occupational background of university students). In Polish publications, "other" tends to include private entrepreneurs, craftsmen, and "not reported" occupations, but occasionally this category may encompass all occupations that exclude

"workers" and "peasants". Consequently, it was necessary to organize data so as to maximize the comparability not only between the countries, but also within each country.

An effort has been made to match the timing of observations as close as possible and to maximize the length of total time coverage. It is anticipated that data reported for several points in time during past three-to-four decades should be sufficient to expose possible changes in the distributions of income and education. The purpose of collecting data may differ from country to country, and to some extent within one country. However, it seems reasonable to expect that within one country these differences over time should not be too excessive.

A more serious problem lies with the reliability of data. There are indications, for example, that during the sixties the standard of living declined to such an extent in Poland that "... Polish Central Statistical Office was disinclined to publish adequate data on changes in consumption and real wages" (Mieczkowski, 1972:656). It is possible, therefore, that the distribution of income may be reported less accurately at one point in time than at another. Observed changes may be misleading. Similarly, occupational structure may be differently defined from time to time (Osiński, 1977), or socio-occupational background difficult to categorize (Wiatr, 1976; Porter, 1965).[1] In view of the stated difficulties with the comparability and reliability of data, a comparison of the rate of change and of general direction of change over time seems still the best strategy to enhance the validity of the findings.

Measures of Inequality

Three variables are used for the present analysis: 1. inequality in the distribution of education; 2. inequality in the distribution of income; and 3. the participation in higher education of students from different socio-occupational backgrounds to indicate educational mobility. Each variable requires a measurable index that allows for a meaningful comparison.

To measure inequality, the Gini coefficient has been chosen. While historically the Gini coefficient of concentration has been used mainly for income analysis, it can be utilized to measure the distribution of other resources on a formal standardized scale from 0 (equal distribution) to 1.00 (greatest possible concentration). It had been used to measure power distribution (Alker, 1965), and "health manpower resources" (Morrow, 1977:278). In the present research it is used to measure income inequality and educational inequality.

The Gini coefficient is "... based upon the deviation of a Lorenz curve from the 'line of perfect equality' " (Ray & Singer, 1973:413). If one were to draw a graph where the x-axis would show the cumulative percentage of a population and the y-axis would show the cumulative percentage of value (e.g., income or education), the line at the 45 degree angle would be the "line of perfect equality". In other words, for each increase of 1% of the population, the share of the value would also increase by 1%. The deviation from the line of perfect equality, when the value is not evenly distributed, would be plotted as a Lorenz curve (Figures 1 through 4). The algorithm used to compute the Gini coefficient is described in Appendix A.

The Gini coefficient is considered to be one of the best, if not the best, measure of inequality (Morgan, 1962). However, it is sensitive to the number of categories involved in the computation.[2] When the number of categories differed considerably from one point in time to another, e.g., with regard to educational levels, it was necessary to adjust the number of categories (i.e. to make some categories more inclusive) to make Gini coefficients comparable.[3]

Income

The only data available for income distribution in Poland are for earned income. Therefore, only the income derived from employment will be used in this comparison. In Canada, "... earned income is by far the most significant component of income," (Johnson, 1977:342) and should serve the purpose of the thesis. Although Poland has a lower percentage of GNP generated by earned income than Canada, the majority of income is still the earned income. Polish data are also restricted to the earned income of employees in the socialized sector. No continuous income distribution for the total Polish population is available. A survey carried out in 1956/57 among Polish peasants (private sector) indicated that great differences in income exist depending upon the region and the size of farms. "Farming brought in an average cash income of 18,000 złoty "per farm annually (Lewis, 1973:46).[4] At the time (1955), the average monthly pay received by a farm worker in the socialized sector was 778 złoty per month (Rocznik Statystyczny 1968:256), slightly more than half of the peasant's average per year. Since the proportion of peasants is quite high in the national labour force, e.g., 30.6% in 1975

(Rocznik Statystyczny 1977:41), the inclusion of these "middle income" peasants in the computation of the Gini coefficients of income inequality would have an effect of reducing the magnitude of the coefficients.

The private sector outside agriculture accounts for only a small fraction of the Polish labour force (2.8% in 1975, Rocznik Statystyczny, 1976:54). It includes private craftsmen, tradesmen, and private industry plus some services. The average monthly income in this sector tends to be rather low. For example, 725 złoty per month in gross earnings in 1957 (Prybyla, 1962:117). In some cases, however, the earnings in private enterprises are considerably higher than in the socialized sector (Szczepański, 1969:104). Since no continuous income distribution is available for the private entrepreneurs, they have to be excluded from the analysis. Their proportion in the labour force is so small that the exclusion would have an insignificant effect on the magnitude of the Gini coefficients.

Finally, it must be specified that in the present investigation a distinction between earned income of males and females cannot be made. No continuous income distribution for separate sexes can be obtained in the case of Poland, nor is the students' representation in higher education by socio-occupational background differentiated with respect to sex in both Canada and Poland.

Education

Education as a "value" is measured in number of years spent in school. Since the number of years tends to vary at almost every level of education in different countries, at different points in time, and

in every Canadian province, an average number of years for each level of schooling had to be estimated for Canada and Poland (Table 7). This average had to be adapted to the available data almost in every computation of the Gini coefficients in different years because the definitions of schooling tended to vary. The value of education in the real sense may be difficult to judge by the number of years. For example, the knowledge of those who spent sixteen years in school is not exactly two times the knowledge of those who did not go beyond the eighth grade. Similarly, work experience of the university graduates would not be "twice" as rewarding as of those who obtained only half the number of years in formal schooling. For the purpose of examining over-time changes in educational inequality, however, the Gini coefficients are adequate.

Table 7. Estimated Average Number of Years in School for Each Level of Education in Canada and Poland

Level of Education	Average Number of Years in School	
Country:	Canada	Poland
	Years	
No school	0	0
Primary (Elementary)		
not complete	4	4
complete	6	7
Basic Vocational		9
Secondary		
not complete	10	10
complete	12	12
Post-secondary		
non-university	14	14
university		
some	14	14
degree	17	17

Source: Canada Year Book 1973; Rocznik Statystyczny Szkolnictwa 1975/76. (Own estimates).

Educational Mobility

A different measure is required to detect changes in educational mobility, that is in the representation of different socio-occupational groups in higher education. For this purpose, a ratio of the proportion of students from a given socio-occupational background to the proportion of this socio-occupational group in the labour force can be calculated. A better measure would be the ratio based on the proportion of fathers in a given socio-occupational class, but such information is not available. In the case of Poland, a ratio based on the proportion of different socio-occupational groups has been also computed in order to examine the magnitude of change between prewar and postwar period.

To achieve comparability, broad occupational categories have to be used in the present investigation. For example, in the case of Canada, the category "other" in the studies of socio-occupational backgrounds of the university students is difficult to match with the category "other" in the census data on the labour force within the country and in the comparison to Polish data. Consequently, the socio-occupational categories for Canada are:[5]

1. White Collar (nonmanual): managers, proprietors, professionals, clerical occupations, commercial and financial occupations, service and "other".
2. Blue Collar (manual): manufacturing and mechanical, construction, labour, transportation and communication.
3. Primary: agriculture (approximately 70-75% of this category), fishing, hunting, and mining.

In the case of Poland, four occupational groups can be distinguished. They are comparable with data obtained for students' participation in higher education and with the occupational composition of the labour force. These groups are:[6]

1. Nonmanual: intelligentsia (managers, professionals, government officials, and in general highly educated population), clerical, sales, financial, and services.

2. Manual: industrial workers (skilled and unskilled), construction, transportation and communication, mining.

3. Agricultural: a small proportion of manual workers in the socialized agriculture, a small proportion of manual workers in forestry, and a great majority of individual farmers, i.e. peasants.

4. Other: private craftsmen and entrepreneurs, disabled, pensioners, and all unspecified.

In the Polish occupational structure the category "other" is quite small and for comparison with Canada will be included in the "nonmanual" category. On the other hand, the occupation "mining" forms such a small proportion of the Canadian labour force that its inclusion in the "primary" group in Canada seems acceptable, although it is included in the "manual" group in Poland. Overall, the three major groups in each country are roughly comparable.

Over-Time Analysis

The focus of the present investigation is on over-time changes in income inequality and educational inequality. First, the data will be examined in one country in order to detect possible relationship between two kinds of inequality. Then the same analysis will be replicated in another country. Finally, the results obtained for each coun-

try will be compared. In a similar fashion, over-time changes in educational mobility will be observed in one country, then in the other, and in the end a between country comparison will be made.

Footnotes

1. There is a number of marginal occupations, difficult to categorize as "manual" or "nonmanual" occupations (Wiatr, 1976:58). The broad categories (manual/nonmanual) may be somewhat inaccurate and artificial but they do reflect the broad economic categories "... which correspond to the structure of work in the economic system." Economic categories are, in turn, the major determinants of social stratification in modern societies (Porter, 1965:10).

2. The Gini coefficient was originally designed for continuous, not discrete, distributions. Its upper limit is 1 -1/N (Ray & Singer, 1973:414-417), where N equals the cumulative proportion in the K - 1 (next to last) category.

3. In the computation of the Gini coefficients, lower magnitude of coefficients is obtained when the number of categories decreases.

4. "Based on the results of survey work carried out in 1956-7, the Institute of Agricultural Economics divided the country into six socioeconomic regions of private farms. The poorest and most peasant-dominated rural areas were those of the south-east and the centre-east, ... The south-east has the largest proportion of small farms (those below 5 ha.). The average annual value of commodity production in this area was only 9,000 złoty, compared with 26,000 in the centre-west ... . In the centre-east there are larger farms but they are not very productive. Farming brought in an average cash income of 18,000 złoty. The value of the means of production on the average farm there was 25,000 złoty in contrast to 37,000 in the centre-west. The centre-west, then is the area of the most prosperous private agriculture ..." (Lewis, 1973:45-46).

From the passage just quoted, it seems that "cash income of 18,000 złoty" applies to the centre-east area, and implies revenue rather than profit.

5. Based on Porter (1967:93, Table E6). Some modifications were necessary for the sake of comparability within the country and between Canada and Poland.

6. Based on Lane (1973) and Szczepański (1970). Prewar nonmanual group would include capitalists, landowners (large), and big entrepreneurs (Wiatr, 1976).

CHAPTER V

FINDINGS: INEQUALITY

Income and Educational Inequalities in Canada

No systematic changes (long term or "macro time") can be detected in over-time analyses of income inequality and educational inequality in Canada. In Table 8 the Gini coefficients for Family Units and Individuals have been included from available secondary sources, but the main concern is with the income of earners. All three indices of income inequality fluctuate over time. Significantly, the level of inequality for Earners has remained steadily higher between 1951 and 1976 than in 1941 (.334). By 1971, it increased considerably (.399). It should be noted that based on sample estimates, the coefficients of inequality for 1976 decreased somewhat (.359), but still indicated a higher level of inequality than the postwar low in 1961 (.339).

During this period, 1941-1979, educational inequality has been decreasing rather steadily in Canada's labour force, but not in the total population. When the population 15 years of age and over is considered, very little change has occurred between 1941 (.200) and 1971 (.203). A slight drop in the level of inequality can be observed in 1979 (.189). In the case of population aged 14 and over, a rather steady and slight decrease in educational inequality is indicated (.239 in 1961, .210 in 1972) over twenty years. Providing the sample estimate for Gini coefficient in 1979 is accurate, educational inequality of the total population (aged 14 and over, and 15 and over) seems to have declined below 1941-1960 levels by the mid-seventies.

Table 8. Income Inequality and Educational Inequality Measured by the Gini Coefficients in Canada

Year	INCOME INEQUALITY Earners	Family Units*	Individuals*	EDUCATIONAL INEQUALITY Labour Force	Population 14 & over	Population 15 & over
1941	.334			.217		.200
1951	.342	.390	.432			.202
1957		.381	.419			
1959		.371	.421			
1960					.239	
1961	.339	.368	.427	.196		
1965			.450		.229	
1966					.230	
1967		.379	.447		.222	
1969		.380	.474			
1970	.396					
1971	.399	.398	.483	.156		.203
1972					.210	
1975			.450			
1976**	.359				.212"	
1979***				.164		.186

*From secondary sources: Love R. Income Distribution and Inequality in Canada, 1979:94, Table A3 (Statistics Canada); own computation of the Gini coefficients for Individuals in 1965 and 1975, based on Income Distribution by Size in Canada, 1976, Statistics Canada, 1978:65, Table 33.

**Income inequality based on a sample, N-15,792 (Income Distribution by Size in Canada, 1976, Statistics Canada, 1978:73, Table 42); Educational inequality based on a sample, N-23,339 (Ibid, p. 74, Table 43).

***Educational inequality based on population estimates (The Labour Force, March 1979, Statistics Canada, April 1979:20, Table 6).

"Unspecified age of "Individuals".

Sources:

Income Inequality:

Statistics Canada, Census of Canada:1941, Vol. VI; 1951, Vol. V, Table 21; 1961, Vol. III, Bulletin 3.3-7, Table 21; 1971, Bulletin 3.6-4, Table 7; Income Distribution by Size in Canada, 1976, 1978:73.

Educational Inequality:

Legaré, M.D. Educational Attainment in Canada, DBS, 1968:39, 42; Statistics Canada, Census of Canada: 1941, Vol. III. Table 47 and Vol. VII, Table 5; 1951, Vol. II, Table 27; 1961, Bulletin 3.1-9, Table 17; 1971, Bulletin 1.5-3, Table 4 and Bulletin 1.5-9, Table 24; Perspective Canada 1974:69, Table 4.1; Income Distribution by Size in Canada, 1976, 1978:74; The Labour Force, March 1979, April 1979:20.

Figure 1. Lorenz Curve for Income in Canada, 1941 and 1971

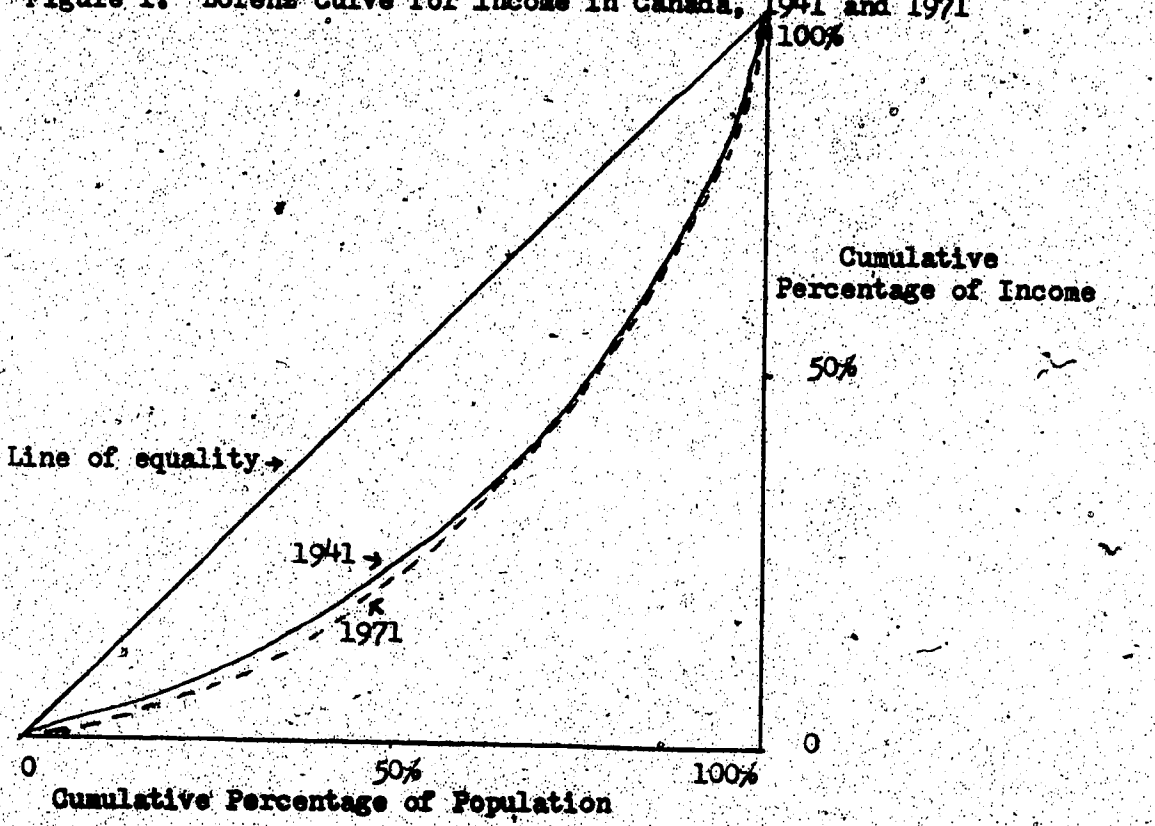
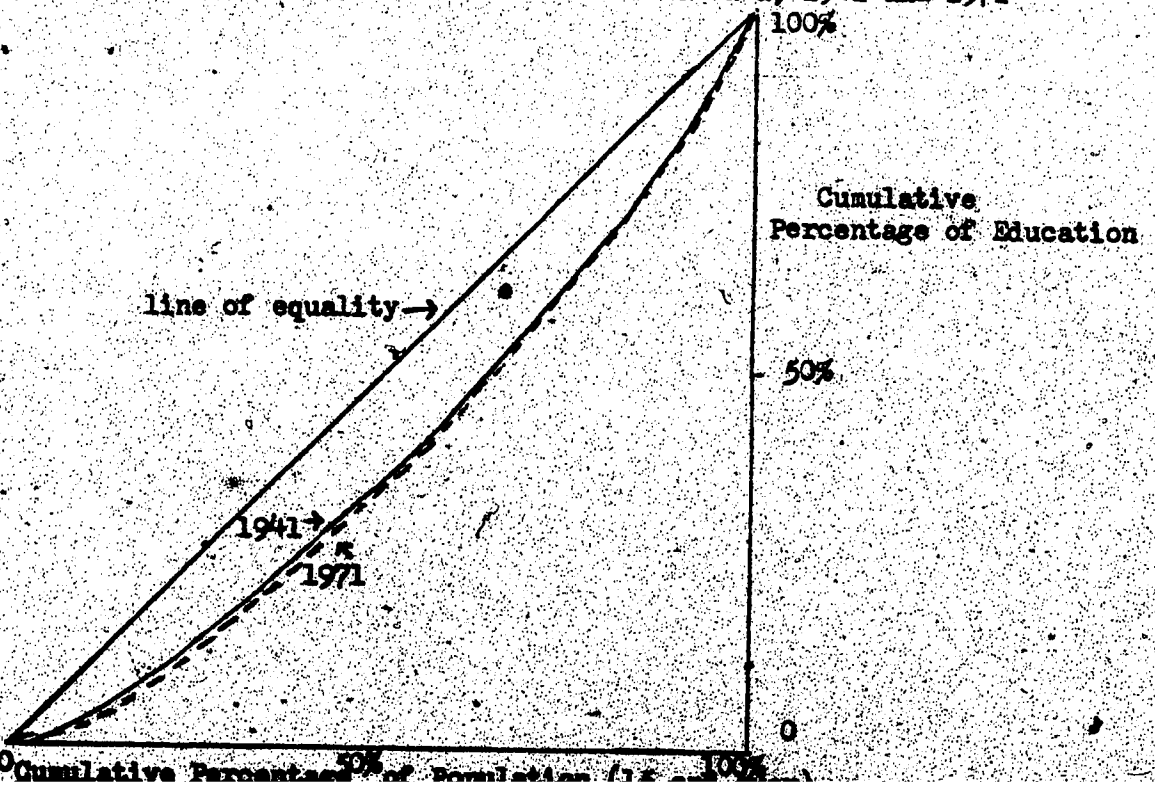


Figure 2. Lorenz Curve for Education in Canada, 1941 and 1971



Figures 1 and 2 help to visualize the difference in income inequality and educational inequality over the span of thirty years (1941-1971). The level of income inequality is considerably higher than the level of educational inequality and while the former increased during this period, the latter remained almost unchanged. The very slight change in educational inequality may be a result of the difference in the number of categories used in computing coefficients in various years.[1]

Overall, there is no indication that two kinds of inequality change simultaneously in the same direction. For example, in 1971, income inequality increased (Earners, Family Units and Individuals) but educational inequality decreased in the labour force and, as 1972 figure suggests, in the total population (14 and over). Between 1960 and 1970, income inequality increased. After 1971 a reverse trend can be observed. In the meantime, during the decade of 1960-1970, educational inequality tended to remain stable or decreasing. The same trend seems to continue in the next decade (1971-1979). All changes appear to be rather random and there is no indication of a positive relationship between income inequality and educational inequality in Canada.

On the other hand, it could be argued that certain lag in time may be expected before the change in income inequality would affect educational inequality. If this were true, then fluctuations in income inequality should be followed by similar trends in educational inequality. The relative stability of educational inequality and a tendancy to decline rather than increase, cannot be related to the changes in

income inequality (mostly increases). For example, during 1960s, income inequality tended to increase (Earners, Family Units, Individuals). Yet educational inequality in the early 1970s continued to decline (labour force, population 14 and over). These findings fail to support the theory that income inequality determines educational inequality.

There is also no indication that educational inequality determines income inequality, as Lydall (1968) proposed. Over-time decreases in educational inequality are not reflected in more equal distribution of income. However, some of the present findings do not contradict Lydall's observations. His analyses were based on male population only, and it is possible that in the case of males, income inequality had decreased between 1941 and 1951. The level of inequality tends to increase considerably when total population (males and females) are taken into account.[2]

In the support of the present indices of income inequality it should be noted that the Gini coefficients computed in this investigation for the early 1970s (.396 in 1970; .399 in 1971; Table 8) are similar to those computed by Paukert (1973) and Bornschier and Ballmer-Cao (1979). These coefficients were, respectively, .392 for the developed countries and .3898 for Canada (1969).

The observations about educational inequality alone agree with those of Lydall's (1968). He too found that educational inequality remained lower in 1961 than in 1941 (labour force). In the present findings, the small but steady decline in educational inequality may indicate that an educational upgrading of the labour force is in progress. Possibly, it is also a sign that postwar immigrant work

force tends to be better educated than in the past.

The relatively slow decline of educational inequality in the total population could be interpreted as an indication that average Canadians get more education over time, but differences in educational achievement remain almost the same. That is, more Canadians tend to obtain secondary education, but at the same time more individuals receive education at the graduate level. Hence the relative difference in the number of years of schooling does not change greatly (Richardson, 1977).

In summary, the Canadian data do not support the Hypothesis I which asserts that there is a positive relationship between income inequality and educational inequality.

Income and Educational Inequalities in Poland

In the case of Poland, it can be observed that a fairly sizeable reduction in income inequality took place between 1935 and 1949 (Table 9). The level of income inequality has never again approached the prewar level. Over time, some fluctuations in inequality have occurred. They are relatively minor. Since the mid-sixties the trend downward has been steady. The discrepancy between 1949 and 1956 can be accounted for by the fact that 1949 data pertained to employees in the industry only while 1956 data included all employees in the socialized sector of Polish economy (the Gini coefficients, .236 and .267, respectively). Figure 3 shows that the reduction of income inequality between 1935 and 1970 was fairly evenly distributed across the whole population.

Table 9. Income Inequality and Educational Inequality Measured by the Gini Coefficients in Poland

Year	Income Inequality	Educational Inequality: Labour Force	Educational Inequality: Total Population
	Gini Coefficients		
1935	.377*		
1938			.289**
1949	.236*		
1956	.267***		
1958		.233	
1960	.255		.227
1964		.218	
1965	.262		
1968		.222	
1970	.260	.226	.207
1974		.225	.206
1975		.225	.214
1976	.241	.224	

*Industry only.
**Population 14 and over; in other years, 15 and over. Only in 1958 labour force, the age is unspecified.
***From 1956 on, involves all employees in the socialized sector of Polish economy.

Source:
Income Inequality:
Mały Rocznik Statystyczny 1939:272, 273, Tables 31 and 32; Rocznik Statystyczny 1949:135, Table 7; R.S. 1968:142, Table 38; R.S. 1960:Graph, and Rajkiewicz, 1965:191, Table 75, and R.S. 1968:65, Table 2(87); R.S. 1972:559, Table 8 (827); Rajkiewicz, 1965:195, Table 80; R.S. 1968:69, Table 8(93); R.S. 1972:107, Table 1(74); R.S. 1977:46,91, Tables 7(74) and 4(132). (Own computations).
Educational Inequality:
Rajkiewicz, 1965:265 (for 1938); Rocznik Statystyczny 1968: 71, Table 14(99); Rocznik Statystyczny Szkolnictwa 1975/76: 1, Table 1; R.S. 1972:46, Table 7(74); R.S. 1976:39, Table 14(62); Nowakowska, 1977:34, Table 8. (Own computations).

Between 1938 and 1960, educational inequality also decreased considerably (.289 in 1938, .227 in 1960) in the total Polish population, as well as in the labour force between 1958 (.233) and 1964 (.218). After 1960, educational inequality continued to decrease in the total population until 1974. In 1975, a slight increase could be observed (from .206 in 1974 to .214 in 1975). A slight increase for the labour force in educational inequality occurred between 1964 (.218) and 1968 (.222), and again in 1970 (.226). Since then, the level of inequality in the labour force has become quite stable (around .225).

The stability of educational inequality in the labour force could indicate that the proportion of relatively unskilled manpower has not been greatly reduced during last decade (1968-1976). In the case of the total population, it appears that considerable progress has been made in upgrading general level of education among all Poles. As indicated in Figure 4, a substantial proportion of the population had no schooling in 1938. From the high of 18% in 1938 (population 14 and over; Rajkiewicz, 1965:265) the percentage of illiterates in Poland was reduced to less than 3% by 1970 (population 15 and over; Nowakowska, 1977:30).[3]

Figure 3. Lorenz Curve for Income in Poland, 1935 and 1970

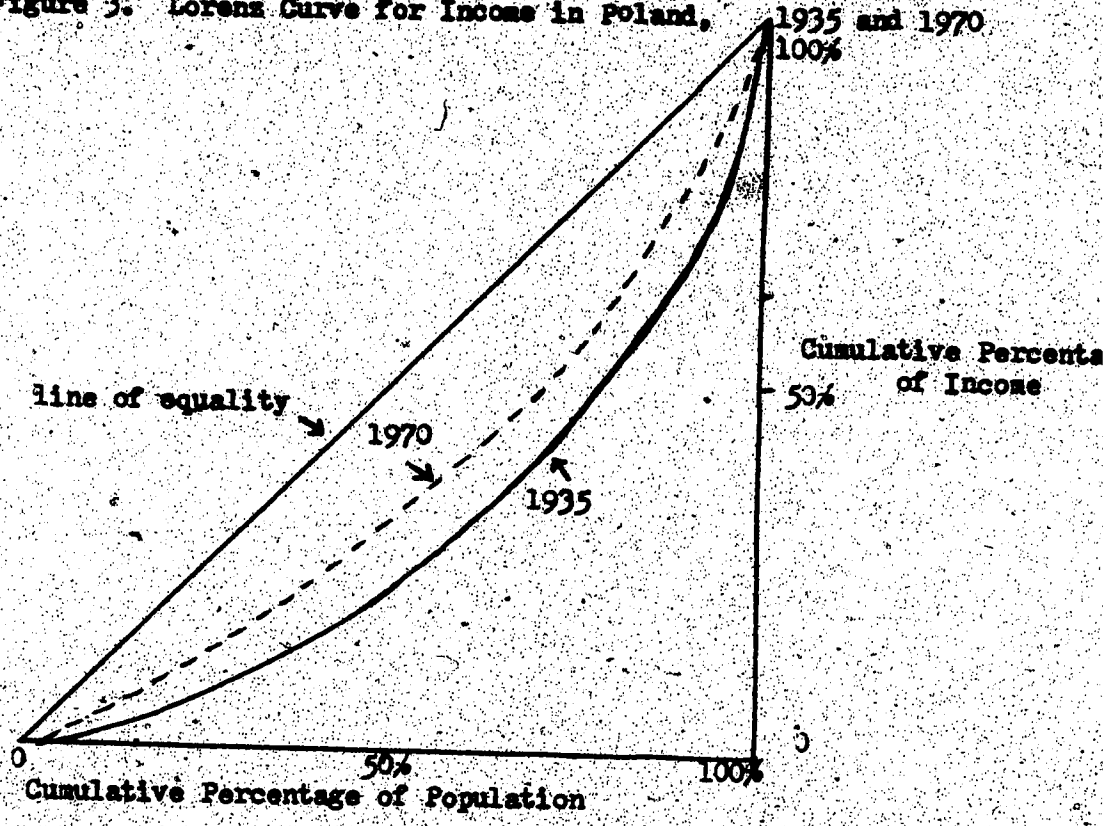


Figure 4. Lorenz Curve for Education in Poland, 1938 and 1970

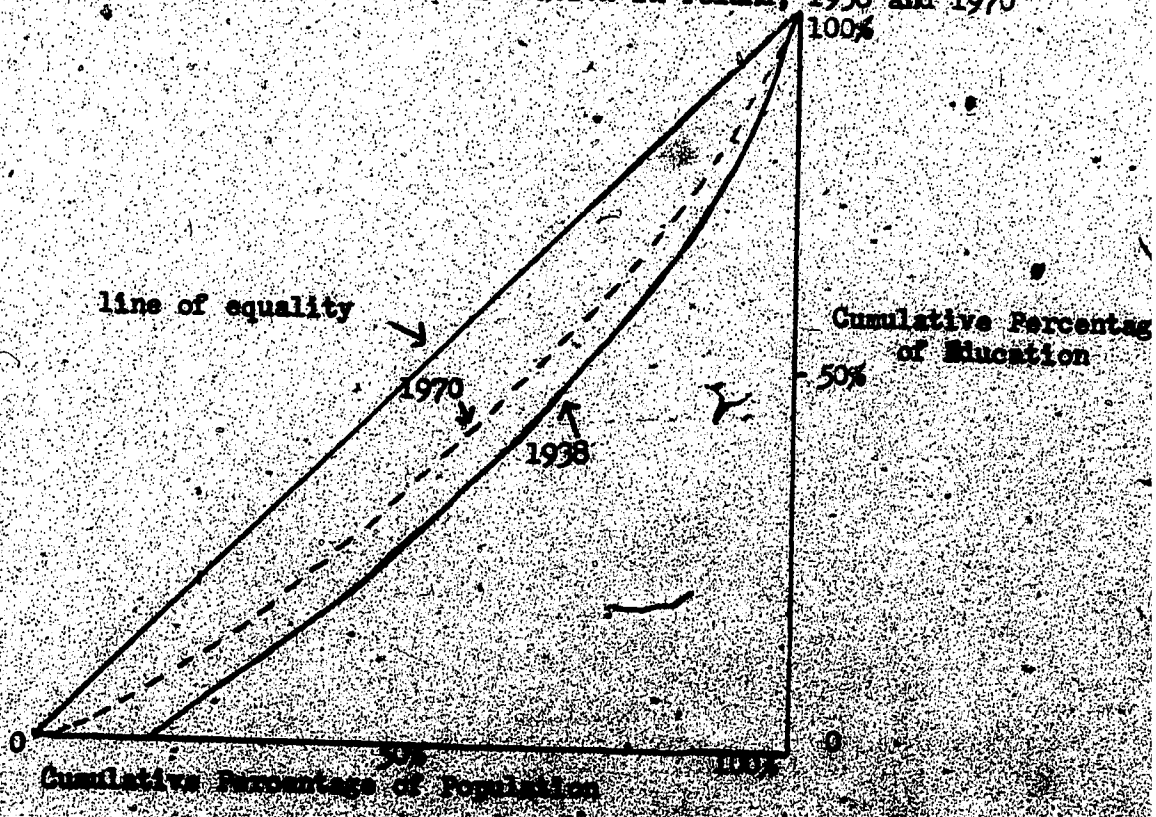


Figure 3 and 4 show that in Poland, income inequality and educational inequality have indeed changed together in the predicted direction (Hypothesis I). That is, between 1930s and 1970 both kinds of inequality declined. However, a close examination of year by year changes (Table 9) shows that the relationship is not so simple. For example, while income inequality increased slightly between 1960 (.255) and 1965 (.262) educational inequality decreased in the labour force from .233 in 1958 to .218 in 1964. When income inequality continued to decrease between 1970 (.260) and 1976 (.241), educational inequality in the total population increased from .207 in 1970 to .214 in 1975. Over the whole period (1935-1976) the postwar levels of inequality remained lower than before the war for income and education, but the relationship between these two kinds of inequality remains inconclusive. Rather, it seems that the decline in both inequalities in the early postwar period was due to some exogenous factors, such as political action.

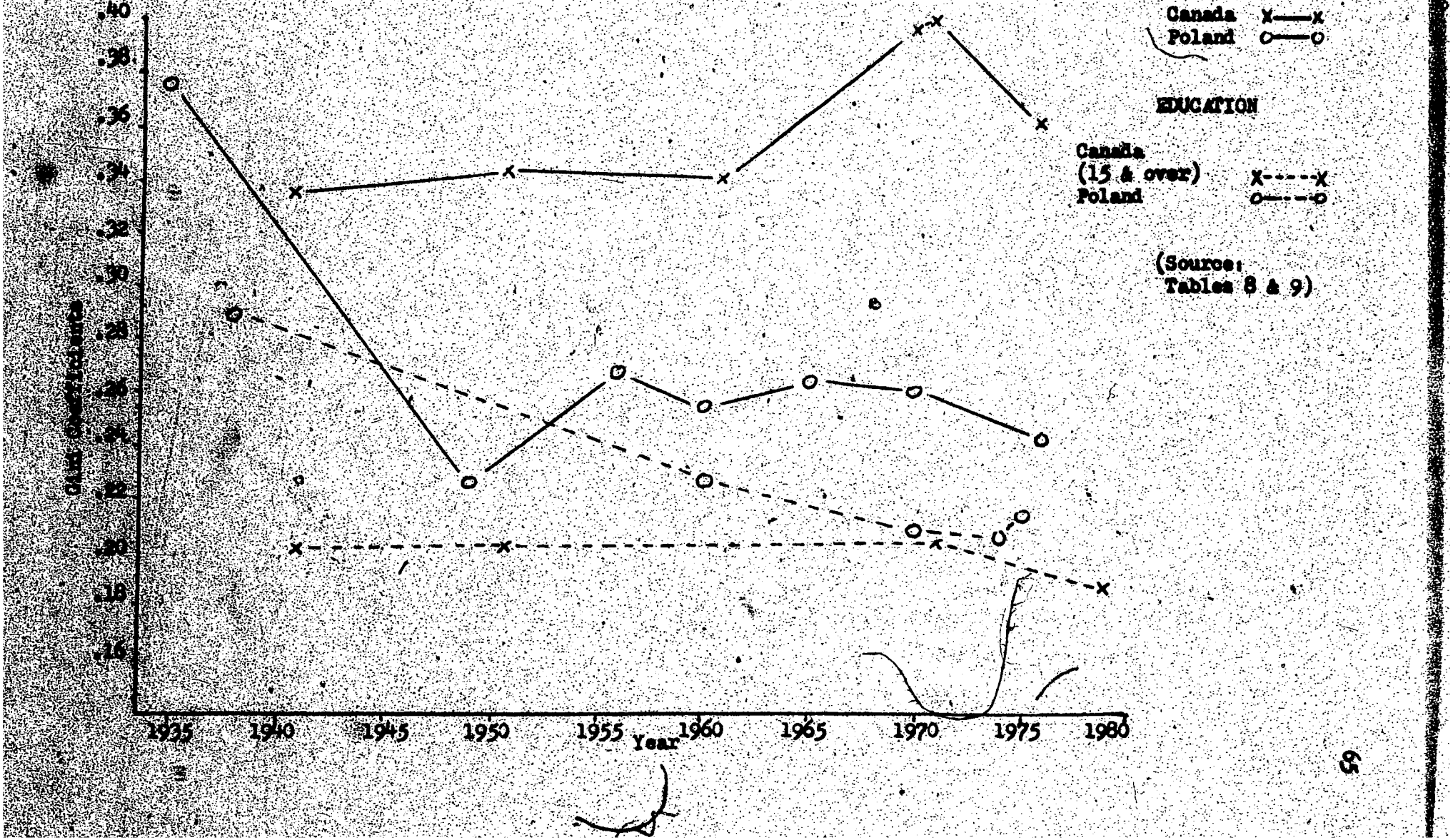
Inequality in Canada and Poland

The comparison of the findings for Canada and Poland throws further light on the association between income inequality and educational inequality. It has been predicted (Hypothesis III) that educational inequality should have declined less rapidly in Canada than in Poland due to the latter's more drastic reduction in income inequality. This hypothesis receives some support from these observations. Indeed, income inequality decreased in Poland between 1935 (.377) and 1960 (.255), while it increased slightly in Canada between 1941 (.334) and 1961 (.339). At the same time, educational

inequality in the Polish population decreased from .289 (1938) to .277 (1960), but actually increased in Canada (.200 in 1941 and .239 in 1960). Consequently, the findings for the early post-war period (roughly 1940-1960) under investigation seem to support the theory that a general positive relationship exists between income and educational inequalities. However, educational inequality in the labour force dropped in both countries (Tables 8 and 9), which is contrary to theoretical predictions. During this early period, it was impossible to examine year by year changes in the levels of inequality because not enough data could be collected for more points in time.

The data pertaining to the later period of time (1960-1979) fail to support the hypothesized positive relationship between income inequality and educational inequality. This can be illustrated by plotting the Gini coefficients over time for both countries (Figure 5). In the case of educational inequality, the coefficients for the population aged 15 and over have been plotted for Canada because they are available for a longer period of time than those for the population aged 14 and over. The corresponding figures for the total population in Poland also involve the 15 and over age group, except for 1938 (14 and over). This gives populations in both countries which are comparable with regard to age.

Figure 5. Gini Coefficients for Income and Educational Inequalities in Canada and Poland, Over Time (1935-1979)



As Figure 5 indicates, income inequality remains considerably higher in Canada than in Poland, but the reverse is true for the educational inequality. This is the first argument against the hypothesized relationship between two kinds of inequality. Secondly, even if the starting points are taken into account, and one can see that the reduction of both inequalities has been substantial in the case of Poland, over-time changes are unrelated to each other both in Canada and Poland. This is particularly true after 1960. The gap in educational inequality in Canada and Poland has been closing rather steadily, although by mid-seventies a slight decrease in educational inequality can be observed in Canada and a slight increase in Poland. By contrast, the gap in the inequality of income distribution increases over time. Curiously it was greatest when educational inequality was almost the same in Canada and Poland, that is, in 1970.

With regard to income inequality it is tempting to interpret the present findings as indicating that the high level of inequality in Canada may reflect the influence of market forces (Goldthrope, 1964) and the dependent position in the world economy (Rubinson, 1976). The relatively low level of inequality in Poland, could indicate the "purposive political action" (Goldthrope, 1964), in agreement with Lydall's (1968) conclusions that communist countries, in relation to their economic development, show lower levels of income inequality (Poland) than the non-communist nations (Canada). The issue of reliability of data, however, and the possibility that important elements of income have been excluded from the present investigation, make such simple conclusions hazardous.

The differences in educational inequality, on the other hand, suggest that the type of educational system may be a significant factor. At this point of analysis, it seems that the Canadian open educational system is more effective in distributing education more equally in the total population than the Polish selective system. In view of uncertain relationship between income inequality and educational inequality, such an interpretation gains in credibility. Finally, the differences in educational inequality in the labour force could be explained by different levels of economic development in both countries. Higher level of economic development in Canada may require better educated labour force. It is also possible that the educational upgrading of the Canadian labour force may be accomplished through immigration, while uneducated native population tends to remain unemployed. By contrast, Poland has to rely on educational skills of Polish population only, and the rate of unemployment in Poland is much lower than in Canada. Most working age individuals find employment in Poland, regardless of educational attainment. This by itself may explain why educational inequality in Polish labour force is relatively stable and why it is higher than in Canada.

Footnotes

1. For example, in the Census of Canada 1941, only six levels of education were reported. In the Census of Canada 1971, twenty categories were given, and had to be reduced to twelve in computations of the Gini coefficients.

2. For example, the Gini coefficient for earned income in 1979 is only .322 for the male population, but .359 for the total population (males and females). Own computations.

3. Rajkiewicz reports 3.2% of the total population (14 & over) to be illiterate in 1960, and projects 0 by 1980 (1965:265, Table 112). According to Nowakowska (1977:30), by 1970, 1.7% of population (15 & over) was considered illiterate and additional 0.5% could read only.

CHAPTER VI

FINDINGS: EDUCATIONAL MOBILITY

Educational Mobility in Canada

The previous discussion of income inequality and educational inequality has indicated that the relationship between these two variables is inconsistent. However, it has been also observed that over time educational inequality tended to decline in Canada. A growing number of individuals has continued to remain in school longer. Now, the focus of this investigation turns away from the problem of how many receive more education to the question of who are those that do receive higher education in Canada. The present task is to examine how the changes in the structure of inequality are expressed in the participation in higher education of students from different socio-occupational backgrounds.

As Table 10 shows, in Canada between 1956 and 1969, students of nonmanual background continue to be overrepresented in higher education (ratios are higher than 1). However, this overrepresentation has declined over time, particularly in the case of the graduate students. There, it dropped from the high of 1.666 in 1956/57 to 1.312 in 1968/69. Over time, the overrepresentation of nonmanual group in higher education remains lowest among the university students (undergraduates).

The representation of the manual group has decreased among the university students (.815 to .653) and among all post-secondary students (.693 to .430). The only gains of manual group that can be noted are in the case of graduate students (.376 to .588). Here the findings may be misleading. In the 1956-57 study of graduate students, the parental occupational status at time of survey was reported.

Table 10. Representation of Students from Different Socio-Occupational Backgrounds in Higher Education (Full-Time Programs) in Canada, in Selected Years (Ratios based on proportions of socio-occupational groups in the Labour Force)

Year	Parental Socio-Occupational Groups		
	Nonmanual (White Collar)	Manual (Blue Collar)	Agricultural (Primary)
	Ratio of Representation		
University Students			
1956/57	1.287	.815	.659
1961/62	1.252	.653	.955
Post-secondary Students (incl. College)			
1956/57	1.401	.693	.630
1968/69	1.357	.430	.989
Graduate Students			
1956/57	1.666 (1.499)*	.376 (.488)*	.636 (.832)*
1961/62	1.312	.588	.895

* The ratios in parentheses were estimated by distributing the category "other" among the three main occupational groups.

Sources:
Students by family background:
1956/57 - University Students' Expenditure and Income in Canada, 1956-57, D.B.S., 1957:19, Table 11, for post-secondary students, and p. 76, Table 92 for graduate students; university students adapted from J. Porter, Vertical Mosaic, 1965:186, Table XXIII, and B. Blishen, "The Construction and Use of an Occupational Class Scale", C.J.E.P.S., 1958, Vol. 24: 519-531.
1961/62 - University Student Expenditure and Income in Canada, 1961-62, Part II, Undergraduate Students, D.B.S., 1962:24, Table 16, (students enrolled in Arts, Sciences, Education, Engineering, Law, Medicine, Dentistry, Pharmacy); for calculations purposes, the number of students obtained in Survey of Higher Education 1961-1969, D.B.S., 1969:16, Table 4 and p. 34, Table 14; Part III, Graduate Students, 1962:22, Table 21.
1968/69 - Statistics Canada, Perspective Canada 1974:90, Table 4.36.

Occupational groups in the Labour Force:
1956;1961: The Canada Year Book 1967:745, Table 5;
1968: Canada Year Book 1973:356, Table 8.5.

Included in the "other" category were: unemployed, pensioners, ill, deceased and not reported. This accounted for 22.9% of the distribution. In the 1961-62 study, however, father's occupation while employed was reported. In this study the "other" category accounted for 4.0% only. In any case, the manual group among graduate students still remains grossly underrepresented. By contrast, over the early 1960s the offspring of parents engaged in agriculture approached almost perfect representation in higher education. Their ratios are .895 or higher.

The fluctuations of income inequality and the rather stable or declining levels of educational inequality between 1957 and 1970 (Table 8) are difficult to relate to these observations. For example, educational inequality has been very slowly decreasing in the Canadian labour force, but this is not reflected in greater participation of the manual groups in the post-secondary education. It is possible that bargaining power of the unions contributes to a relatively low level of income inequality in the Canadian labour force when manual and nonmanual groups are compared (Bornschier & Ballmer-Cao, 1979). By the same token, one would expect that the unionized workers enjoy decent wages. Thus, economic considerations cannot be fully responsible for low participation of workers' offspring in the post-secondary education. Rather, it seems that the high wages paid to the skilled labour in Canada could mean that even without university education, an individual may improve his social standing and attain a higher standard of living than his parents experienced.

Finally, the high participation of the agricultural group in higher education could indicate several things. It is possible that farming in Canada requires more and more formal education. Possibly, Canadian farmers enjoy relatively high income or, rural children may be attracted to the city life and anxious to leave farms. It may also be a sign that rural school facilities are on par with those in the urban areas. In any case, it should be remembered that the number of people engaged in agriculture steadily declines over the period under investigation. Therefore, the proportional participation in higher education of this group has rather an insignificant impact on the rate of educational mobility in the whole society.

Educational Mobility in Poland

In the case of Poland, the overrepresentation of the nonmanual group in higher education was extremely high in the thirties (Table 12) and even in the late forties (Table 11). By 1960, it decreased considerably (from 3.603 in 1949/50 to 2.589 in 1960/61 in full-time program, Table 11) and continued to decrease until mid-seventies when an opposite trend began. The other two groups, manual and agricultural, have remained underrepresented throughout the whole period under investigation. Indeed, their representation in the full-time programs has declined (Table 11).

Table 11. Representation of Students from Different Socio-Occupational Backgrounds in Higher Education in Poland, in Selected Years (Ratios based on proportions of occupational groups in the labour force)

Type of Program / Year	Parental Socio-Occupational Group		
	Nonmanual*	Manual Ratio	Agricultural
Full-Time			
1949/50	3.603	.735	.417
1960/61	2.589	.715	.472
1970/71	2.193	.731	.453
1975/76	2.207	.704	.389
Full & Part Time			
1949/50	3.603	.738	.415
1960/61	2.246	.853	.519
1970/71	1.747	.912	.561
1975/76	1.724	.866	.572

*Includes "other".

Source: the same as for Table 12.

In addition to Table 11, another table (12) is presented to highlight the differences in representation of various socio-occupational groups in higher education before and after the war (WW II). The ratios refer to the composition of Polish society according to occupations of heads of family (intelligentsia, workers, peasants, other). As "Full & Part Time" programs indicate, the offspring of intelligentsia were grossly overrepresented in higher education in 1935/36 (8.792). Other groups, particularly peasants, were grossly underrepresented (.096). The situation changed considerably after the war, as figures for 1958/59 indicate.

Table 12. Representation of Students from Different Socio-Occupational Backgrounds in Higher Education in Poland, in Selected Years (Ratio based on proportions of socio-occupational groups in the society)

Type of Program / Year	Parental Socio-Occupational Group (Nonmanual) Intelligentsia	(Manual) Workers	(Agricultural) Peasants	Other**
Full-Time				
1949/50	2.909*	.667	.479	
1960/61	2.623	.710	.575	.577
1965/66	2.495	.701	.565	.495
1970/71	2.395	.771	.546	.377
1975/76	2.552	.746	.467	.282
Full & Part Time				
1935/36	8.792	.475	.096	.721
1949/50	2.909*	.669	.477	
1958/59	2.849	.899	.514	.535
1960/61	2.273	.847	.632	.505
1965/66	2.273	.915	.694	.367
1970/71	1.914	.961	.676	.289
1975/76	1.996	.917	.686	.218

*Includes "Other".
**Includes private sector outside agriculture and unspecified.

Source:
Proportions of students in higher education:
1935/36: Lane, 1973:22 and Poland in Figures, 1944-64, 1964:82;
1949/50: Kolankiewicz, 1973b:210 and R.S. 1959:289, Table 38(442);
1958/59: R.S. 1959:289, Table 38(442) and p. 293, Table 45(449);
1960/61 to 1975/76: Rocznik Statystyczny 1976:452, Table 34(676).
Labour Force:
1950: R.S. 1972:107, Table 1(74) and p. 109, Table 5(78); and Rajkiewicz, 1965:195;
1960: Osiński, 1977:40 and Rajkiewicz, 1965:195;
1965, 1970, 1975: R.S. 1977:41, Table 1(68) and R.S. 1968:69, Table 8(93).
Total population by socio-occupational groups:
1938: Wiatr, 1976:17, and Poland in Figures 1944-64, 1964:7;
1950: R.S. 1968:43, Table 18(54) and Rajkiewicz, 1965:195 (own estimates);
1958: Rajkiewicz, 1965:191, and R.S. 1968:43, Table 18(54) (own estimates);
1960, 1965, 1970, 1973: Osiński, 1977:45; R.S. 1968:43, Table 18(54); Rocznik Demograficzny 1975:82, Table 2; R.S. 1976:36, Table 9(57); own estimate for 1975.

It can be observed in both tables (11 and 12) that by 1960/61 the youngsters of manual or agricultural backgrounds gained in representation in the "Full & Part Time" programs and with some fluctuations over time did better in this category than in the "Full-time" programs. In the latter, they actually lost in representation between 1949/50 (manual: .735, agricultural: .417) and 1975/76 (.704 and .389, respectively, Table 11).

Overall, it seems that the offspring of nonmanual parents (intelligentsia) are less overrepresented in the postwar Poland than before the war, but they continue to occupy a leading position with relation to other groups. Over time, the latter have become even more underrepresented, particularly in the full-time university programs. These findings correspond to changes in educational inequality. At first there was a substantial reduction in educational inequality and in the overrepresentation of the nonmanual group in the higher education. After the early sixties, educational inequality tended to increase or stabilise in the case of the labour force and to decrease and then stabilize in the case of the total population (Table 9). At the same time, i.e. after 1960/61, the decrease in overrepresentation of "nonmanuals" proceeded at a slower rate while the representation of other groups failed to improve in the full-time programs. By 1975, educational inequality has increased among the total population and so did the overrepresentation of the nonmanual group and the under-representation of the other groups (Table 11 and 12).

It is more difficult to relate educational mobility to income inequality. In the early postwar period the rapid drop in income in- [illegible]

manual group in higher education, as well as by an increase in the representation of other socio-occupational groups in this type of education. After 1965, income inequality continued to decline but the patterns of educational mobility did not follow early trends.

It seems possible that income distribution has some effect on educational mobility in the manual group. There is evidence that certain industrial workers, particularly the "income aristocracy" in the fuel and coal industry, tend to enjoy much higher wages than the rest (Kolankiewicz, 1973a). It may be easier for sons and daughters of members of the "income aristocracy" to attend university full-time than for those whose parents receive relatively low income. For the latter, part-time education, while working, may be the only way of obtaining higher education. In the nonmanual group, financial considerations may be less important than other factors (for example, intellectual environment at home). The continuous overrepresentation of the nonmanual group in higher education may also reflect the influence of urban environment (closeness to the institutions of higher learning). Many manual workers as well as farmers live in remote rural areas. Poor school facilities in the rural areas may explain, at least in part, the low representation of the peasants' offspring in Polish higher education.

The findings concerning income inequality in Poland should be interpreted with caution. As it was already pointed out, the data on income distribution are not always reliable. In addition, there are indications that economic rewards, other than earned income, are not evenly distributed among social groups, and tend to favour nonmanual employees. Consequently, economic inequality may be greater than

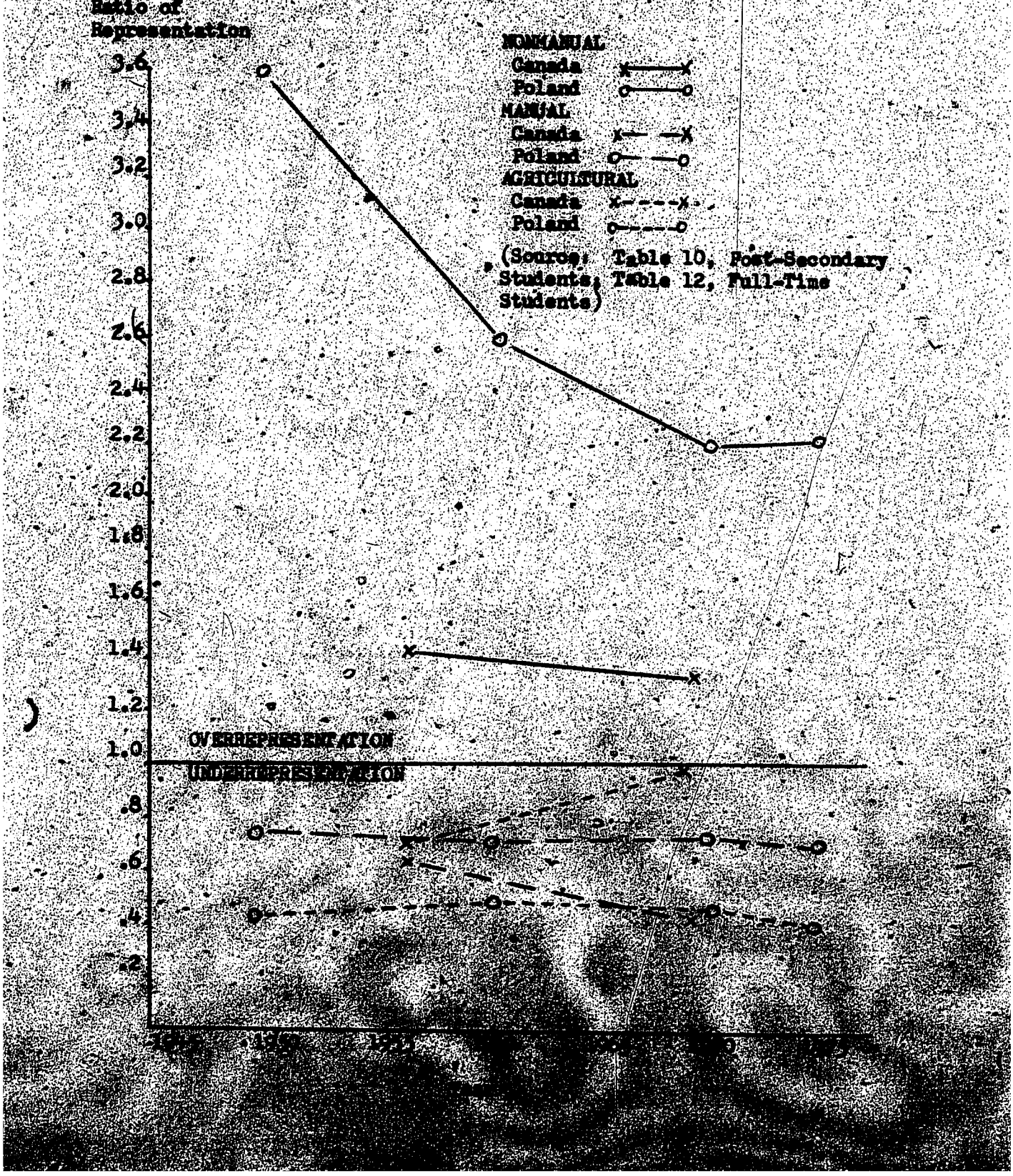
implied by the present findings, and the influence of income distribution on the participation in higher education may be more pronounced than it was possible to detect in the present analysis.

Educational Mobility in Canada and Poland

There are indications that between 1959 and 1960 the overrepresentation of the nonmanual group in higher education decreased more rapidly in Poland than in Canada (Tables 10 and 11). However, during the same period of time (actually only the period between 1955 and 1960/61 can be compared) the rate of educational mobility for manual and agricultural groups did not increase as rapidly in Poland as it was hypothesized (Hypothesis III). Figure 6 illustrates the changes in educational mobility in Canada and Poland.

In the case of manual group its representation in higher education in Poland is higher than in Canada, but the rate of educational mobility has remained almost stable in the former country and decreased in the latter. None of these outcomes were expected. In the case of agricultural group, again in Poland its representation remained almost stable between 1955 and 1960, but it increased substantially in Canada. This too has not been predicted. The same trends continued throughout the sixties.

Figure 6. Representation in Higher Education of Socio-Occupational Groups in Canada and Poland Over Time



Overall, Figure 6 makes it very obvious that the overrepresentation of the nonmanual group in higher education remains much higher in Poland than in Canada. The representation of the manual group is higher in Poland than in Canada, and the representation of the agricultural group is higher in Canada than in Poland. Of the two last groups, only the agricultural group approached its proportional representation (1968) in the case of Canada. The manual groups in both countries as well as the agricultural group in Poland remain grossly underrepresented. These findings are impossible to relate to those summarized in Figure 5. It should be reminded that income inequality is higher in Canada than in Poland and educational inequality is lower in Canada than in Poland. In short, the trends in income inequality and educational inequality are not expressed in any systematic manner in the patterns of educational mobility in both countries.

It is possible that income inequality may have some effect on educational mobility within groups in which the level of inequality is high. These effects were suggested in the case of the nonmanual group in Canada and the manual group in Poland. As far as the remaining groups are concerned, that is, agricultural groups in both countries, manual group in Canada, and nonmanual group in Poland, there are indications that other factors than income inequality play a more important role in educational attainment.

The changes or stability in the levels of educational inequality have shown some correspondence with those in educational mobility in Poland, but not in Canada. In sum, the findings fail to provide consistent support for the notion that when educational systems expand and ad-

ucational inequality decreases, all social groups tend to participate more in higher education.

Footnotes

1. Among additional rewards are social benefits and enterprise funds. There is some evidence that peasants receive much lower share of social benefits than the remaining social groups (Kudrycka, 1977). With regard to enterprise funds, it was estimated that in 1967, "... 18.6 per cent of manual workers entitled to participate in the division of the fund were either totally or partially excluded. In the case of the engineers and clerical-administrative staff the figures were 6.3 per cent and 5.5 per cent respectively" (Kolankiewicz, 1973a:126).

CHAPTER VII

CONCLUSIONS

In view of the present findings, only tentative conclusions can be reached with regard to possible relationship between income inequality, educational inequality, and educational mobility. No systematic changes reflecting a positive relationship between both kinds of inequality could be observed in Canada and Poland (Hypothesis I). Furthermore, over-time changes in the structure of inequality are not reflected in the predicted changes in educational mobility (Hypothesis II) when both countries are compared (Figures 5 and 6). With regard to the early postwar period, a substantial reduction in income inequality and educational inequality as well as an increased rate of educational mobility could be observed in Poland. However, the comparison of Canada and Poland during the fifties and early sixties (approximately 1955-1965) fails to support Hypothesis III. There are indications that the predicted changes in the structure and the process of stratification in Poland (Tables 9 and 13) during the early period (1935-1960) could be accounted for by exogenous factors rather than by a causal relationship between the variables. In short, no conclusive support can be found for the theory of a positive relationship between income inequality and educational inequality as proposed by Boudon (1974) or by Lydall (1968). There is also no support for the negative relationship between income inequality and the rate of educational mobility (Boudon, 1974).

These conclusions do not deny that income distribution may have some effects on educational inequality and educational mobility

bility. However, it seems to be just one of many factors and only one dimension of social stratification. The finding that educational inequality in Canada and Poland had reached almost the same level in 1970 (Figure 5), when income inequality was most differentiated between the two countries, suggests that other determinants of inequality must be involved.

It could be argued that Boudon's (1974) theoretical model was unsuitable for studying Poland. No support, however, has been found for Boudon's assumptions in the Canadian analysis. The effects of social stratification on educational inequality and educational mobility may be of primary importance, but other aspects of stratification must be considered along with the distribution of income. The distribution of power, for example, or traditional rigidity of social structure, are admittedly more difficult to measure and manipulate than the distribution of income, but they may have to be taken into account.

A note of caution in the interpretation of the present findings must be stressed again. Perhaps the earned income is not sufficient, even if the data were reliable, to detect economic differentiation in the society. On the other hand, it has been suggested that, "... even a relatively modest inequality of earnings if it exists for a longer period of time, causes much deeper - individual and group - differentiation of expenditure, material consumption and finally a lasting economic differentiation of the society" ([illegible], 1971:47). Consequently, the lower income inequality in the postwar Poland may not indicate that Polish society is less rigidly stratified in the economic terms than the Canadian society. In any case, the investigation of change in two countries at different [illegible] [illegible] should [illegible] [illegible] the

probability of detecting the association between income inequality and educational inequality, if such an association existed. That no regular, systematic change was observed suggests that the positive relationship between these two kinds of inequality is very doubtful. There is also a possibility that Boudon's theory is viable. The gap in time might be considerably longer than anticipated. That is, the effects of changes in income distribution on educational inequality and educational mobility may require more than twenty or thirty years before they can be detected.

Had the data been more comparative, more complete, and more reliable for both countries, the findings could be interpreted with much more confidence. Until such time when the data will become standardized within and between countries, the difficulties in cross-national research will remain serious. There is some indication, however, that first steps have been taken to establish comparable parameters in several countries (including Canada and Poland) to facilitate studies of mobility, stratification and inequality across nations (Featherman, et al., 1974). In the present investigation an attempt was made to utilize the existing data for over three decades, hence the difficulties were multiplied.

With regard to the effectiveness of educational systems in the equalization of access to higher education for all social classes, both the Canadian and the Polish educational systems do not appear very successful. During the comparable period of time (1956-1968), the overrepresentation of the students from nonmanual families in higher education decreased more in Poland than in Canada, but it remained higher in Poland than in Canada at all points in time. Also, no

progress has been made to increase the representation of other social groups in higher education in the case of Poland, while in Canada the representation of the manual group decreased and only offspring of farmers made noticeable gains (Figure 6). The agricultural group, however, is so small in the Canadian socio-occupational structure that the success is rather insignificant. Overall, judging by the levels of educational inequality in both countries over the whole period under investigation (approximately 1940-1979), the Canadian educational system may be more effective than the Polish system in making the access to higher education open to more students, but not necessarily to more social classes.

The low participation in higher education of certain socio-occupational groups in Canada and Poland may seem puzzling in view of the discussed "benefits and utility" of higher education in both countries. Perhaps it should be remembered that the "cost" involved in changing social position is not purely economic. Other considerations, such as parting with a familiar social environment or a perspective of a lengthy struggle for acceptance at a higher level of stratified system, may also influence the final educational decisions.

In the end, several areas of research are suggested by the present investigation. One would examine the channeling of students to different programs at the secondary level of education, and its effects on educational mobility. Another would involve the impact of immigration on income and educational inequalities in different countries. A third would study the role of cultural traditions in social stratification. Finally, a thorough investigation of sex inequality in relation to income, education and mobility could increase greatly our

understanding of the present findings.

This investigation suggests most strongly that the problem of equalizing the access to higher education remains to be solved in both Canada and Poland. It will continue to be of concern to educators and social scientists in both countries.

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APPENDIX A

To compute the Gini Coefficient the following algorithm is used (on the authority of Dr. J. Gartrell, Department of Sociology, University of Alberta):

$$\text{Gini} = \sum_{i=1}^{k} (X_i Y_{i+1} - X_{i+1} Y_i) / X_{k-1}$$

where,

k, equals the number of categories;
i=1,2, ... k;
X, stands for the cumulative proportion of population;
Y, stands for the cumulative proportion of value.

An example, Income Distribution in the Polish Socialized Sector, 1965: (Rocznik Statystyczny 1972:559, T. 8/827):

Monthly Earnings (z/)	Average Monthly Earnings z/ (a)	Distribution of Population (L.F.) Thousands (b)	%	Total Value of Earnings (a)(b)	%
1000 and less	800	748.9	9.07	59912	3.34
1001-1200	1100	606.6	7.34	66726	3.82
1201-1400	1300	763.8	9.25	99294	5.69
1401-2000	1700	2557.7	30.96	434809	24.92
2001-2500	2250	1521.0	18.41	342225	19.61
2501-3000	2750	921.7	11.16	2532675	14.53
3001-5000	4000	1011.0	12.24	404400	23.18
5001and over	6500	129.3	1.57	84045	4.82
			100.00		100.00
	TOTAL:	8260.0		1744878.5	

Cumulative Proportion of Population (X)	Cumulative Proportion of Value (Y)
1. .0907	.0343
2. .1641	.0725
3. .2566	.1294
4. .5662	.3786
5. .7503	.5747
6. .8619	.7200
7. .9843	.9518
8. 1.0000	1.0000

k=8

$X_{k-1} = .9843$

Gini=2.7952264 - 2.5373917/.9843
≐.262