

EXPLAINING CANADIAN FERTILITY: SOME REMAINING CHALLENGES

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Résumé — Le Canada est dans une situation avantageuse qui se prête à l'étude du contexte social de la reproduction humaine et de la gestation. Les contributions canadiennes à la documentation en matière de fécondité ont, jusqu'ici, été impressionnantes. En dépit de la base solide de recherche en fécondité au Canada, il en reste des défis. Parmi ceux-ci sont l'exploitation profitable de la situation culturelle et économique unique du Canada, la concentration sur les secteurs problématiques de la fécondité canadienne, le développement d'une perspective théorique canadienne distinctive, la promotion des liens plus solides avec la sociologie familiale, sans être contraint par la méthodologie en devenant plus conscient des appuis théoriques de la recherche en fécondité et en pénétrant le secteur de l'explication des comportements en fécondité.

Abstract — Canada is in an advantageous position to study the social context of human reproduction and childbearing. Canadian contributions to the fertility literature have thus far been impressive. In spite of the obvious solid base of fertility research in Canada, some challenges remain. Among these are capitalizing on Canada's unique cultural and economic situation, focussing on the problematic areas of Canadian fertility, developing a distinctive Canadian theoretical perspective, promoting stronger linkages with family sociology, not being driven by methodology, becoming more aware of the theoretical underpinnings of fertility research, and moving into the area of explanation of fertility behaviours.

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Canadian fertility patterns, trends and differentials have been well researched and documented. The potential of existing data on fertility could be said to have been exhaustively explored (Veevers, 1981). Fertility data in Canada have some unique advantages such as the inclusion of religion on birth records which has enabled analysis of fertility differentials by religion (Long, 1970). The availability of Census of Canada public user sample (PUS) data has enabled fertility analysts to study fertility in the context of families and households, to examine the socio-economic and lifestyle correlates of childbearing and to examine cohort shifts in fertility determinants (Balakrishnan *et al.*, 1979; Lapierre-Adamcyk, 1979). In addition, Canada has experienced three regional fertility surveys (Balakrishnan *et al.*, 1975; Henripin and Lapierre-Adamcyk, 1974; Krishnan and Krotki, 1976) and a smaller scale survey in an eastern city (Elahi, 1973). Although a Canada-wide fertility survey has still not been completed, these existing surveys have provided a wealth of data on attitudes and behaviours related to childbearing.

Canada, as well, has been blessed with the skilled manpower to not only engage in technically sophisticated fertility research, but to train students at the M.A. and Ph.D. levels in demography in both French and English. Indeed, Canada is a world resource of demographic expertise, placing graduates of its programmes in governments and universities throughout the world. Academic demographers in Canada regularly serve as consultants on population research and policies to governments at home and abroad. The Canadian government has provided generous support to demography students, grants for fertility research and supportive statistical expertise. The amiable relationship between academics and civil servants has led to collaborative research efforts, strengthened by the complementary perspectives of the two groups and the opportunities provided for new applications of methods and perspectives.

The Canadian scene provides particular advantages as a laboratory for the study of human fertility. Some Canadian subgroups, such as the Hutterites, experience fertility levels which approximate maximal natural fertility. Such a group can provide a basis for enhanced understanding of natural fertility and the social constraints placed on it. Hutterites have been the basis of a micro-simulation model of population dynamics (Morgan and Somerville, 1975). The presence of minority groups and recent immigrants adds to Canada's possibilities as a laboratory for the study of fertility differentials. Many studies have focussed on French-English differences in fertility (Beaujot, 1978; Henripin, 1972; Henripin

and Légaré, 1971; Légaré, 1974). Fewer have focussed on the fertility of native people (Romaniuc, 1981; Romaniuc and Piché, 1972), regional differences in fertility (Balakrishnan *et al.*, 1979; Henripin, 1972; Kalbach and McVey, 1979), other ethnic differences in fertility (Beaujot, 1974; Beaujot *et al.*, 1982), fertility among recent immigrants and fertility in shifting economic circumstance.

Canada's unique cultural situation may also be particularly advantageous to the study of fertility. The consequences of a "borrowed" culture, imported largely from the United States, have been explored by the arts and media. That this imported culture may have additional impact on family formation and fertility has remained unexamined. The economic dependence of Canada may also have implications for fertility, particularly in times of economic crises during which "branch plants" often suffer first and most. The self-conscious nationalism of Canada in the 1970s and 1980s might provide a macro-context for research on fertility decisions — decisions which have long been recognized as having a central economic component.

Given all the advantages, it is not surprising that Canada has contributed more than its share to innovations in fertility research. Citing a few examples is indicative of this: Veevers' work on birth orders (1973a), Romaniuc on projection techniques (1970), Murphy and Nagnur's (1972) attempt to fit mathematical curves to Canadian fertility, Morgan and Somerville's (1976) micro-simulations, Denton and Spencer's (1973) simulation models, Kayani and Krishnan's (1973) and Beaujot's (1973) works on model fertility, Allingham *et al.*, (1969), Allingham *et al.*, (1970) and Balakrishnan *et al.* (1970) on contraception, McDaniel and Krotki (1979) on illegal abortion, Veevers (1973b) on childlessness, Turner and Simmons (1977) on sex roles and fertility, Beaujot (1974) on ethnic fertility and Kyriazis (1979) on sequential fertility decisions. This list, although impressive, represents only a sample of innovative Canadian contributions to fertility research.

In spite of the obvious solid base of fertility research in Canada, challenges remain. The challenge is shared in part by all fertility analysts in the developed world — to explain increasingly convergent family size by means other than the less and less satisfying traditional structural variables (Veevers, 1981). This problem, being universal, will not be directly addressed here. Rather, an attempt will be made to examine some of the remaining challenges peculiar to the Canadian student of fertility. In exploring these Canadian challenges, no hard-biting critique of

fertility research will be offered, but instead the focus will be on an introspective consideration of what the next steps might be in Canadian fertility research.

Capitalizing on Canada's Uniqueness

The patterns of cultural, social and economic life in Canada provide the possibility of studying fertility and family formation under circumstances different than those prevailing in other parts of the world, most notably different than those in the U.S.A. The implications of these differences for fertility in Canada have not been fully examined. In many other areas of sociological interest — such as attitudes toward education, political views and institutional formations — Canadian-American differences have become a riddle that has captured the imagination of many sociologists, economists, philosophers and political scientists. In particular, these differences have spurred political economists to explore the role of Canada's dependent economy on socio-political structure (Innis, 1956, 1970; McDaniel and Agger, 1982; Rotstein, 1976). In studying fertility, however, these unique Canadian characteristics — even differences as apparently relevant to fertility as the lower levels of participation of women in the work force in Canada — have remained surprisingly unaddressed.

Canada's uniqueness as a multicultural society — comprised of a rich mix of ethnic and minority groups, recent immigrants, people living in remote isolated areas as well as in modern metropolitan areas, two founding cultures and languages and widely divergent regional economic and social patterns of life — has also not been capitalized on in fertility research. Questions of dominant ideology in the socio-economic sense raise obvious questions about the pervasiveness of dominant ideology in the realm of family, children and women in society. That this may have implications for fertility research seems clear. As well, the notion of fertility as a politically contentious issue is not new in Canada in light of Québec's stand on population policy. That fertility may be a growing political issue to native groups and some ethnic groups would seem to merit examination by demographers interested in explaining Canadian fertility in full context.

The "Livelier" Canadian Fertility Issues

Canadian demographers, in studying all aspects of population, tend not to focus on the livelier, and often more controversial, problems of Canadian life. Glancing through the listing of papers presented at the Canadian Population Society meetings in recent years or through the main texts of Canadian demography (Beaujot and McQuillan, 1982; Grindstaff *et al.*, 1971; Kalbach and McVey, 1979; Overbeek, 1980) tends to support this. This tendency, and of course it is not universal, means that Canadian researchers have created the impression that Canada's fertility is essentially unproblematic. In focussing on descriptive analyses of fertility differentials by region, mother tongue, marital status, etc., the dynamics of fertility as a process are overlooked. It is undeniable that major insights have been gained from the analysis of differentials. Most recently, Balakrishnan *et al.* (1979) and Lapierre-Adamcyk (1979) have demonstrated that judicious application of indices and multivariate analysis to census data can provide insights not only on the more traditional structural differentials but also on lifestyles and, to some extent, on roles associated with childbearing in modern Canada. Other examples of the explanatory potential of analysis of fertility differentials in Canada are too numerous to mention. It seems clear, however, that traditional differences in fertility by ascribed characteristics are rapidly disappearing in light of a new set of factors related to economics and modernization of familial and social roles (Balakrishnan *et al.*, 1979:262; Veevers, 1981).

In the quest to focus on topics of more traditional interest such as Anglophone-Francophone fertility, changing age at first birth, ethnic and religious variability in fertility, etc., a host of fertility problems have received scant attention in Canada. Among these might be unwanted births, particularly among adolescents but also among older women who face an unwanted extra child, the relationship of problems faced by recent immigrants to their fertility, the effects of a depressed economy on childbearing, the consequences of economically required female participation in the work force on fertility, the potential ramifications of changing reproductive and contraceptive technology (including the possibility of remaining childless permanently, having children later in life or utilizing surrogate motherhood) and the implications of family instability (or the threat of it) on ultimate reproductive aspirations and outcomes.

Often it is argued, and justly, that it is difficult to study these livelier issues of Canadian fertility with the data available. A full-scale national survey is held out as the ultimate and ideal means by which to examine these issues. Few national surveys, however, have had the luxury of pursuing these issues in much more than a cursory way. It may be necessary for fertility analysts to take courage, perhaps from psychologists or small-group sociologists, and launch innovative small-scale investigations into these lively issues separately. If generalizability is not possible to the same degree to which demographers are accustomed, contributions could be made to Canadian fertility literature by depth of insight.

Lack of a Distinctive Canadian Theoretical Perspective

The student of Canadian fertility, like the student of society, is generally taught (and believes) that he is learning a value-free, universally applicable perspective on society. In fact, many of the unspoken assumptions and unarticulated frameworks through which Canadian fertility is studied — like much of Canadian culture itself — are imported from the U.S.A. The theoretical perspectives which may be appropriate to understanding fertility behaviours in an advanced capitalistic country in a dominant world position and with a culture-specific set of social problems, may be quite inadequate to explaining fertility in a country like Canada, which is in an essentially dependent position vis-à-vis both American capital and culture.

Sociology in Canada, to which demography looks for many of its explanatory frameworks, tends to be imitative of its American counterpart. In its attempts to be accepted as legitimate (or to see itself as acceptable), it may supercede its "role model" in its quantitative and seemingly universal approach. This, although laudable in many research endeavours, may not fully reflect Canadian reality. The way in which this perplexing problem is solved at present seems to be to substitute Canadian place names and minorities for American, but to leave the essentially American theoretical and methodological perspectives untouched. These issues are specifically explored in a book on social problems in Canada (McDaniel and Agger, 1982).

In work on Canadian fertility, almost all of what we do tends, in its theoretical perspective at least, to be derivative. This does not mean, of course, that Canadian fertility research has not acquired a substantial set of insights and pushed back our frontiers of knowledge, but rather, that

with full recognition of the need to develop a distinctive Canadian theoretical perspective, we could do even more. In attempting to explain the effect of minority status on fertility in Canada, for example, we often refer to an assimilation perspective which may be quite inappropriate in Canada, a country that prides itself on multiculturalism and avoidance of the "melting pot." If the assimilation approach indeed has relevance in the Canadian context, researchers studying its bearing on fertility tend to overlook the wider implications of a dependent economy and culture, a branch plant collective self-image and Canada as a "stepping stone" for immigrants who may wish ultimately to migrate to the U.S.A.

Developing a distinctive Canadian theoretical perspective is a much larger task, of course, than developing a Canadian perspective for fertility research. A first step would be to recognize the social, economic and political forces that impinge on Canadian fertility. If this could be done at the micro-level with such a basic but complex human process as fertility, it might provide a "blue print" for theoretical innovations in other realms.

Linkages with Family Sociology

It is somewhat surprising that fertility research is not more closely allied with research on sociology of the family. In examining fertility, demographers have to a large degree separated fertility from the family context in which it occurs. To some extent, this is circumvented in fertility surveys but even then, in interviewing only women, much of the dynamism of childbearing decision-making in the family is overlooked.

The enthusiasm with which students of fertility embraced the application of micro-economic theory of consumer behaviour to fertility during the past decade and a half attests to their acceptance, at least implicitly, of a choice framework as the appropriate means by which to study fertility. According to this approach, childbearing is seen as a deliberate attempt at utility maximization within the family — a choice made on the basis of the couple's relative preference for children as compared with other options. Although the initial formulation of a direct analogy of children to consumer durables has ultimately proved difficult to sustain, the notion that fertility behaviour involves an element of choice has remained enticing and compelling in light of today's contraceptive effectiveness and acceptability (Veevers, 1981).

If indeed, it is appropriate to view childbearing in a contracepting society through a framework of choice, then the familial relationships occurring not only between the man and woman facing the choice but also among a wide variety of actors may be crucial. Of course, high levels of unwanted fertility among notable subgroups in the population may suggest the inappropriateness of a choice framework for many people. If childbearing is to be viewed in a choice framework in modern Canada, then the process of weighing one alternative against another within the family setting must receive careful research consideration, whether or not one accepts the micro-economic framework. If, as seems likely, the decision-making process involves social as well as economic considerations, then family sociology becomes more relevant as role consideration, perceptions of the place of the family in society and the social nature of childbearing and childrearing become central.

It may be that fertility involves not merely a choice indicating relative preference for children over consumer durables, but a series of choices, all governed by the familial situation. This could be termed a reproduction matrix which involves regulation of sexual behaviour, reproduction itself (which is intimately tied to family structure as well as sex roles) and the career pattern of parenthood (including protection of the infant, socialization, adulthood expectations for and from the child and a whole series of other considerations). Recognition of the complexity of the reproduction matrix and the degree to which it is linked in various, often contradictory, ways to family values and structure could add not only analytical clarity to studying the process of childbearing but enable greater understanding of the distinctness of biological and social parenting.

Reference to the family sociology literature by fertility researchers could further reveal the existence in Canadian society of widely discrepant calculations of childbearing utilities among subgroups of the population. As originally conceived, the "new home economics" posited trade-offs between houses, trips to Europe, new cars and children. It may be that this kind of calculated choice-making is a distinctly middle-class phenomenon. Upper-class people may calculate fertility choice in terms of property inheritance or carrying on the family name or family business rather than in terms of consumer trade-offs. Among minorities or those living in poverty, another kind of utility may be operative — one which sees children as an insurance policy against poverty or loneliness, a kind of investment in the future as well as a gamble that things might improve in future.

A closely related literature to that of family sociology, and one equally relevant to the study of fertility, is the sex roles literature. Brought to the fore for the first time when theorists attempted to incorporate social factors into the "new home economics" framework (Scanzoni, 1975), the link between women's social roles and reproduction seems inalienable. Virginia Woolf recognized this in *A Room of One's Own*, noting "When children cease to be altogether desirable, women cease to be altogether necessary." Childless women have been seen as deviant and, during the Middle Ages, were more likely to be burned at the stake as witches than were mothers. Yet when fertility researchers attempt to explain childbearing patterns, they seldom examine the sex role components of motherhood. Exceptions on the Canadian scene include Turner and Simmons (1977) and McDaniel (1984).

Being "Driven" by Techniques

To a large extent, the progress of all natural science is determined by the techniques available to study the phenomenon of interest. One cannot study the composition of the moon's surface without having the means available for collecting samples of it or, alternatively, the means by which to reasonably accurately simulate it. One cannot examine the internal workings of the atom without the equipment by which to accelerate atoms at high speeds. On the other hand, it is possible for techniques to dictate what is appropriate to see and examine, not what might be most interesting or fruitful to examine. Techniques which can become the new toys of science must be applied not only in order to satisfy curiosity and gain legitimacy and acceptance, but also to justify their own development.

In fertility research in Canada, substantial gains have been made from the application of new techniques. Innovative analytical techniques used in fertility survey research might include the techniques of multivariate analysis (Balakrishnan *et al.*, 1979), life table techniques to compute parity progression ratios (Balakrishnan *et al.*, 1975), model fertility tables for both females and males (Adams and Nagnur, 1981; Beaujot, 1973) and birth interval analysis (Balakrishnan *et al.*, 1975), stochastic modelling for both simulation and projection (Morgan and Somerville, 1975), refinement of measures such as family size preference and cohort membership (Krishnan and Krotki, 1976; McDaniel, 1984) and improved techniques for soliciting more truthful responses to sensitive questions

(McDaniel and Krotki, 1979). In other realms of fertility research, innovations such as birth order analysis (Veevers, 1973a), record linkage (Newcombe and Smith, 1970), birth estimation techniques including the "own children" approach (Balakrishnan *et al.*, 1979), curve-fitting (Murphy and Nagnur, 1972), disaggregation of data (Kyriazis, 1979) and simulation models (Denton and Spencer, 1973) have been used. Canadian demographers seem to have a particular flair for the dramatic application of new techniques to research problems in fertility.

Although the contribution of most of these methodological efforts has been clear, at times it seems as if a contribution consists of a new application for a technique or of using new data in a well-established analytical framework, rather than innovatively rethinking or reconceptualizing the problem at hand. In Canadian fertility research, levels of methodological sophistication are such that we appear at times to be better methodologists than fertility analysts. Problems, particularly theoretically complex problems, often go unaddressed as we rush to apply the latest technique.

Insensitivity to the Theoretical Underpinnings of Fertility Analysis

Closely related to discussions of techniques which may determine what we study, is the unawareness or insensitivity to the theoretical underpinnings of Canadian fertility research. Demographers have traditionally taken a somewhat atheoretical stance, assuming implicitly that this stance fostered not only good empirical work but also objectivity in research. This may be true as long as traditional problems are studied in a well-worn framework. When, however, we consider more perplexing Canadian population issues such as the demographic bases of Anglophone-Francophone relations or the fertility problems of native peoples, it may be discovered that lack of sensitivity to theoretical assumptions leads to intellectual and analytical morasses.

On the world scene, the Bucharest conference on population in 1974 (Mauldin *et al.*, 1974) marked a clear delineation of the theoretical underpinnings of fertility research and policy. With the conclusion that fertility policies must be pursued in the context of socio-economic development, the theoretical notion that fertility was solely a product of individual choices largely untouched by the wider social environment and structure was laid to rest. More practically, the notion that fertility problems, and consequently problems of socio-economic development and

poverty, could be solved by fine-tuning individual preferences through family planning was finally agreed to be unworkable.

Canadian demographers, in vivid contrast to their colleagues in other parts of the world and to their colleagues in other disciplines, have been reluctant to recognize, in a theoretical sense, the inextricable linkage between population and social problems. In coming to grips with the theoretical underpinnings of fertility research, many unstated assumptions of fertility analysis are exposed and examined. One theoretical perspective, that espoused initially by Malthus but carried forward into modern times by sociological functionalists, takes the view that population, most notably fertility, is the driving force of many social problems. In Canada, such problems as teenage pregnancy, poverty among native people, urban crowding and regional disparity are seen as social problems that result from population dynamics and all of which can be potentially ameliorated by inducing people to make better individual choices. Witness the ways in which baby bonuses have been used in Québec as a calculated attempt to “solve” a political and economic problem.

A contrasting theoretical perspective, initially espoused by Marx but with many non-Marxist modern adherents, holds that social problems emanate from other social sources in society rather than from population dynamics. This perspective, more closely allied to that of the Bucharest conference, sees population-related social problems not as a collective function of misdirected individual choices but as having a life of their own beyond individual choices. In Canada, as in the Bucharest conference, a shift toward this perspective seems discernable. In Québec, for example, there has been a clear movement away from individualistic, fine-tuning solutions to social problems and towards a redefining of the issues as economic and political. This has resulted in a shift of focus from fertility of Francophones to language policies. Similarly, problems among native people in Canada — traditionally attributed to high birth rates, high rates of infant and maternal mortality and high out-migration from reserves — are now being defined more in terms of economic inequality and exploitation of native peoples by the rest of Canada. This shift in perspective has led to the emergence of native settlement claims and talk of establishing a separate nation of native peoples.

Fertility research in Canada has largely taken place in a kind of theoretical shadow-box. It has been implicitly assumed that fertility can be studied in isolation from the social, economic and political forces

operating in society. Furthermore, it has been assumed that the study of fertility is best done atheoretically. In doing so, it may be that demographers are unconsciously working within the framework of individual choices, fine-tuning and, in fact, functionalism. If so, fine, but a clear articulation of the assumptions underlying our work seems necessary. Doing so might surprise a number of Canadian fertility researchers who think they are engaged in atheoretical work. It also sets the stage for examining heretofore unspoken assumptions and permits the possibility of building a firmer and more suitable theoretical framework for studying fertility.

Moving into Explanation

The last challenge to Canadian fertility researchers to be discussed here is the need to move away from the realm of description and into the realm of explanation. This challenge is not unique to Canadian demography nor to fertility research, but characteristic of most work in demography and much work in social sciences. We researchers are so fascinated by the social world that we seem content to categorize and describe what we find without piecing it together with other interesting bits in an explanatory framework.

Although this problem is larger than Canadian fertility research, it seems particularly salient here. This is partly because fertility researchers in Canada may devote more of their time to description and less to explanation than researchers in other fields. The salience of the problem is also partly explained by the seemingly enticing task at hand — the explanation of a happy phenomenon like fertility with reference to existing notions such as relative preference for children, sexual politics, the family context, etc. It seems to be a tough task, no doubt, but not one without joys and rewards. Therefore, it is surprising that the desire for explanation cannot lure more fertility researchers away from their fascination with descriptive analysis.

Conclusion

We began this “wool-gathering” process by lauding the richness of the Canadian fertility scene both in terms of resources, data and skills and the richness of problems to be studied. The notable accomplishments of

many Canadian fertility researchers have been cited. Seven major challenges remaining to Canadian fertility analysts have been addressed here. These interrelated challenges include taking advantage of the unique Canadian scene, focussing on the livelier fertility problems of our time, developing a distinctive Canadian theoretical perspective on fertility, working toward greater linkages with family sociology and sex roles, being less "driven" by techniques and methodological innovations in the quest for understanding Canadian fertility, becoming more sensitive to the theoretical underpinnings of demographic research, and moving toward the explaining fertility behaviours. In elucidating these challenges, it is hoped that the door can be opened to further systematic consideration and "state-of-the-art" thinking on where Canadian fertility research has been, what its weaknesses as well as its strengths are and where we might take ourselves in the future.

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References

- Adams, O.B. and D.N. Nagnur. 1981. *Marriage, Divorce and Mortality: A Life Table Analysis for Canada: 1975-77*. Ottawa, Ontario: Statistics Canada.
- Allingham, J.D., T.R. Balakrishnan and J.F. Kantner. 1969. Time series of growth in use of oral contraceptives and the differential diffusion of oral anovulants. *Population Studies* 23:43-51.
- _____. 1970. The end of rapid increase in the use of oral anovulants: Some problems in the interpretation of time series of oral use among married women. *Demography* 7:31-41.

- Balakrishnan, T.R., J.D. Allingham and J.F. Kantner. 1970. Analysis of oral contraceptive use through multiple decrement life table techniques. *Demography* 7:459-465.
- Balakrishnan, T.R., G.E. Ebanks and C.F. Grindstaff. 1979. *Patterns of Fertility in Canada, 1971*. Ottawa, Ontario: Statistics Canada.
- Balakrishnan, T.R., J.F. Kantner and J.D. Allingham. 1975. *Fertility and Family Planning in a Canadian Metropolis*. Montréal, Québec: McGill-Queen's University Press.
- Beaujot, R. 1973. *Model Male Fertility in Edmonton*. Discussion Paper No. 8. Population Research Laboratory. University of Alberta, Edmonton.
- _____. 1974. *Ethnic Variations in Fertility in Edmonton*. Unpublished Ph.D. Thesis. University of Alberta, Edmonton.
- _____. 1978. *Canada's Population: Growth and Dualism*. *Population Bulletin*. Vol. 32, 2. Population Reference Bureau, Inc.
- Beaujot, R.P., K.J. Krotki and P. Krishnan. 1978. Socio-cultural variations in the applicability of the economic model of fertility. *Population Studies* 32:319-325.
- _____. 1982. Analysis of ethnic fertility differentials through consideration of assimilation. *International Journal of Comparative Sociology* 23(1):52-59.
- Beaujot, R. and K. McQuillan. 1982. *Growth and Dualism: The Demographic Development of Canadian Society*. Toronto, Ontario: Gage.
- Denton, F.T. and B.G. Spencer. 1973. A simulation analysis of the effects of population change on a neoclassical economy. *Journal of Political Economy* 8(2):356-375.
- Elahi, V.K. 1973. A family planning survey in Halifax, Nova Scotia. *Canadian Journal of Public Health* 64(4):515-520.
- Grindstaff, C.F. 1975. The baby bust: Changes in fertility patterns in Canada. *Canadian Studies in Population* 2:15-22.
- Grindstaff, C.F., C.L. Boydell and P.C. Whitehead. 1971. *Population Issues in Canada*. Toronto, Ontario: Holt, Rinehart and Winston of Canada.
- Henripin, J. 1972. *Trends and Factors of Fertility in Canada*. Ottawa, Ontario: Statistics Canada.
- Henripin, J. and E. Lapierre-Adamcyk. 1974. *La Fin de la Revanche des Berceaux: Qu'en Pensez les Québécoises?* Montréal, Québec: Les Presses de l'Université de Montréal.
- Henripin, J. and J. Légaré. 1971. Recent trends in Canadian fertility. *Canadian Review of Sociology and Anthropology* 8:106-113.

- Henripin, J., P.M. Muot, E. Lapierre-Adamcyk and N. Marcil-Gratton 1981. *Les Enfants qu'on n'a Plus Au Québec*. Montréal, Québec: Les Presses de l'Université de Montréal.
- Innis, H.A. 1956. *Essays in Canadian Economic History*. Toronto, Ontario: University of Toronto Press.
- _____. 1970. *The Fur Trade in Canada*. Toronto, Ontario: University of Toronto Press.
- Kalbach, W.E. and W.W. McVey. 1979. *The Demographic Bases of Canadian Society* (2nd ed.). Toronto, Ontario: McGraw-Hill Ryerson.
- Kayani, A. and P. Krishnan. 1973. *Fertility Decline in Canada, 1961-1970: An Analysis Through the Fertility Table Approach*. Social Statistics Section, American Statistical Association Proceedings, 302-306.
- Krishnan, P. and K.J. Krotki. 1976. *Growth of Alberta Families Study (GAFS)* Edmonton, Alberta. Population Research Laboratory, University of Alberta, Edmonton.
- Kyriazis, N. 1979. *Sequential fertility decision-making: Catholics and protestants in Canada*. *Canadian Review of Sociology and Anthropology* 16:135-149.
- Lapierre-Adamcyk, E. 1979. *Socio-economic Correlates of Fertility in Canadian Metropolitan Areas: 1961 and 1971*. Ottawa, Ontario: Statistics Canada.
- _____. 1981. *Les Aspirations des Québécois en Matière de Fécondité en 1980*. *Cahiers Québécois de Démographie*, 10.
- Legare, J. 1974. *Demographic highlights of fertility decline in Canadian marriage cohorts*. *Canadian Review of Sociology and Anthropology* 11:287-307.
- Long, L.H. 1970. *Fertility patterns among religious groups in Canada*. *Demography* 7:135-149.
- Mauldin, W.P., N. Choucri, F.W. Notestein and M. Teitelbaum. 1974. *A report on Bucharest*. *Studies in Family Planning* 5(12):357-396.
- McDaniel, S.A. 1984. *Family size expectations among selected Edmonton women: Three explanatory frameworks compared*. *Canadian Review of Sociology and Anthropology* 21:75-91.
- McDaniel, S.A. and B. Agger. 1982. *Social Problems Through Conflict and Order*. Don Mills, Ontario: Addison-Wesley.
- McDaniel, S.A. and K.J. Krotki. 1979. *Estimates of the rate of illegal abortion and the effects of eliminating therapeutic abortion, Alberta 1973-74*. *Canadian Journal of Public Health* 70(6):393-398.
- Morgan, K. and C.R. Sommerville. 1975. *Maximum entropy spectral analysis of Monte Carlo simulations of a closed finite human population*. *Canadian Studies in Population* 3:1-17.

- Murphy, E.M. and D.N. Nagnur. 1972. A Gompertz curve that fits: Applications to Canadian fertility patterns. *Demography* 9:35-50.
- Newcombe, H.B. and M. Smith. 1970. Changing patterns of family growth: The value of linked vital records as a source of data. *Population Studies* 24:193-203.
- Pool, D.I. and M.D. Bracher. 1974. Aspects of family formation in Canada. *Canadian Review of Sociology and Anthropology* 11:308-323.
- Romaniuc, A. 1970. Fertility projections by the cohort method: For Canada 1968-1984. Analytical and Technical Memorandum, no. 5. Ottawa, Ontario: Dominion Bureau of Statistics.
- _____. 1981. Increase in natural fertility during the early stages of modernization: Canadian Indians case study. *Demography* 18:152-172.
- Romaniuc, A. and V. Piché. 1972. Natality estimates for Canadian Indians by stable population models. *Canadian Review of Sociology and Anthropology* 9:1-20.
- Rotstein, A. 1976. *Beyond Industrial Growth*. Toronto, Ontario: University of Toronto Press.
- Scanzoni, J. 1975. *Sex Roles, Life Styles and Childbearing*. New York: Free Press.
- Travato, F. and T.K. Burch. 1980. Minority group status and fertility in Canada. *Canadian Ethnic Studies* 12(3):1-18.
- Turner, J. and A. Simmons. 1977. Sex roles and fertility: Which influences which? *Canadian Studies in Population* 4:43-60.
- Veevers, J.E. 1973a. Estimating the incidence and prevalence of birth orders: A technique using census data. *Demography* 10:447-458.
- _____. 1973b. Voluntary childless wives: An exploratory study. *Sociology and Social Research* 57:356-366.
- _____. 1981. Demographic Aspects of Vital Statistics: Fertility. A Statistics Workshop held in Ottawa, Ontario, 12-13 March 1981. Unpublished manuscript.

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