and Fawn Brodie, *Thomas Jefferson: An Intimate History*. For the promise of psychobiography, see chapter two, "The Fit in the Chair," in Erik A. Erikson, *Young Man Luther* (New York, 1962), 23–48; and William B. Willcox, "The Psychiatrist, the Historian, and General Clinton: The Excitement of Historical Research," *Michigan Quarterly Review* 6 (Spring 1967): 123–30. More generally, see the excellent discussions of the subject in John A. Garraty, *The Nature of Biography* (New York, 1964); Robert Gittings, *The Nature of Biography*; and James L. Clifford, *From Puzzles to Portraits, Problems of a Literary Biographer* (Chapel Hill, 1970).

24. The case for heuristic biography is argued by Flanagan in "The Lives of Louis Riel: Conventional, Psychiatric, and Heuristic Biography," a paper delivered to the Conference on Biography and Canadian Literature, Wilfrid Laurier University, 29 September 1979.

25. Robert E. Spiller, review of Leon Edel, *Henry James. The Treacherous Years, 1895–1901*, in *AHR* 70 (February 1970): 943–44.

THEORY AND METHOD IN CANADIAN HISTORICAL DEMOGRAPHY†

CHAD GAFFIELD

But what about the people? This was the question that younger historians frequently asked when looking at a discipline accustomed to interpreting only the evidence left by the articulate in the past. Most people live and die leaving only vestiges of their existence through routinely generated institutional records such as church archives, birth certificates, marriage licences, wills, inventories (under Quebec's civil law), income tax records and census returns. Some of these sources are closed to the historian, while those that are accessible only render insight through quantitative methods that frequently employ teams of researchers in costly computer applications.

Historical demography developed in order to describe and explain the behaviour of populations in the past. The effects of war, climate, transportation, agricultural practices and industrialization on demographic behaviour and social structure have been brought to light in a manner previously unknown. Concentrating on demographic patterns alone, whether at the microsocial level or through aggregation, does not provide historical explanations. Quantitative methods are only a means of generating usable evidence; they do not in themselves offer reasons why. Nor do the correlations that quantitative methods establish to test the strength of relationships among variables, such as social class (however defined) and geographic or social mobility, provide the causal explanations that historians seek. As well, individual behaviour cannot be inferred from collective data without falling prey to the ecological fallacy, a false form of statistical reference. Studies conducted at the microsocial level*

† *Archivaria* 14 (Summer 1982): 123–36.

* See Allan G. Brogue, "Quantification in the 1980's," in *The New History, The 1980's and Beyond*, ed. Theodore K. Rabb and Robert I. Rotberg (Princeton, 1982), 163–64.

raise further questions of typicality, whether typicality is defined in terms of mean, mode, or median. Studies may also be guided by the availability of certain forms of evidence rather than by questions more pertinent to historical understanding.

One of the principal techniques used in this area of history is record linkage. This procedure allows historians and demographers to trace large numbers of people over time in order to ascertain demographic patterns and social structures. Record linkage brings together information about a particular historical individual from separate historical sources such as manuscript censuses, municipal assessment rolls, and parish records. Now greatly assisted by the computer, record linkage has helped historians understand diverse phenomena such as family and household structures, marriage patterns, fertility and mortality rates, and the extent of geographic and social mobility. While such techniques are central to social history, historian Chad Gaffield shows that theory is as important as method in historical demography.

Some years ago, the closest any historian would have come to the field of demography would probably have been through competition with genealogists for microfilm readers in public archives. This is certainly no longer the case. Historians are now actively studying population patterns in the past and their efforts have significantly redefined the domain of historical debate. A selective examination of potential sources and a survey of certain theoretical issues indicate some of the dimensions of this exciting field.[1]

The backbone of historical demography in Canada has been the census. Enumerations began in New France during the 1660s and became a decennial event in the modern form in 1851. For researchers, the census is valuable for several reasons. To begin with, each enumeration offers fairly complete coverage of the population at a specific point in time. Although under-enumeration is always a problem, especially for certain social, ethnic and racial groups, the census is the only source that even approaches completeness in most Canadian contexts. Secondly, the census offers information not only on demographic patterns but also on social, economic, and ethnic characteristics. Researchers are able to analyse demographic behaviour in a larger context and thus offer explanations as well as descriptions of vital rates. In addition, the demography of particular groups within a society can be examined and compared with reference to specific variables such as occupation or birthplace.[2]

The weaknesses of the census for historical demography include both chronological limitations and intrinsic deficiencies. The modern census has no counterpart in the decades before 1851 and thus the experience of British North America, for example, cannot be compared directly with Canada in later decades. Moreover, the census only provides snapshots of demographic behaviour and so scholars must analyse a dynamic process through the filter of still life. Some aspects of this difficulty can be overcome for the 1851–1881 period for which the manuscript enumerations permit record linkage and therefore certain change-over-time analysis. However, record linkage presents serious problems in a highly mobile population such as existed throughout Canada in the period, and only a few studies have taken this approach. In any event, the one-hundred-year rule prevents individual level analysis after 1881 and, for the modern decades, the census only provides aggregate statistics.[3]

These limitations are compounded by the type of demographic evidence included in the census. There are no specific fertility or nuptiality data, and the obvious inaccuracy of the mortality schedules has discouraged their use. For the most part, scholars identify vital rates through examination of the age structure of the population. Fertility is often assessed in terms of the ratio between the population less than 5 years of age and women of childbearing years (15–49) while nuptiality is related to the proportion ever married in critical age groups (15–19, 20–24, etc.). These calculations provide figures which allow fruitful comparisons among various enumerations but they are only rough approximations of actual demographic patterns. Potential discrepancies must be appreciated since a small difference in any vital rate has a dramatic impact on the overall demographic equation.[4]

Some of the gaps in census evidence can be filled by parish registers but researchers must also be prepared for new problems. Church records of baptisms, marriages and deaths have been the major source for historical demographers in Europe, especially France and England. In certain situations, these records provide a life-course perspective on demographic behaviour from birth to death. By tracing individuals through parish registers, researchers can "reconstitute" the family process in specific communities. This technique supports a longitudinal perspective with a realistic dynamic quality; the continuing action of demographic occurrence is preserved. In addition, parish registers offer precise information including date of birth (as well as baptism), age at marriage, and time of death. These individual data then take on demographic meaning through the technique of family reconstitution, which reveals childbearing patterns such as spacing and final family size.[5]

In addition to this type of demographic evidence, parish registers also support analyses concerned with literacy and kinship. Since the participants of religious services were generally asked to sign the parish registers, demographic behaviour can be examined with respect to educational skill. This examination cannot be very sophisticated because the registers divide the population into only two groups (those who can sign their names and those who cannot) but the continued debate over the relationship between education and fertility encourages further research. Similarly, parish registers give an indication of kinship ties by their specification of participants such as witnesses. Marriage registers are particularly important in this regard and often suggest the extent of

attachment beyond the immediate family. In this way, parish registers indicate the kinship context within which demographic events occurred.[6]

In Canada, parish registers and the method of family reconstitution have only limited use for most historical demographers. Two factors undermine their utility: the characteristic rate of population turnover which prevents family reconstitution for much of the population; and denominational diversity which discourages community studies especially outside Quebec. In order to trace individuals through time, researchers must be able to record-link baptismal records with marriage registers and so on. However, if an individual's records are scattered in different communities, there is little likelihood that a demographic biography will be pieced together. In these circumstances, scholars will be left with a "reconstitutable minority" which may be a very biased sample of the larger population. Simlarly, the proliferation of Protestant denominations in English-speaking Canada means that any community might include a dozen sets of parish registers, some of which will undoubtedly be incomplete as a result of loss or destruction. This phenomenon is especially apparent in the case of smaller denominations or groups which joined together at later dates.

Census enumerations and parish registers are the most important sources for historical demography but a variety of other evidence is also available. In general, this evidence also comes under the heading "routinely generated sources" and includes both public and private documents. An indication of the variety of such documents is provided in table 1, which lists the types of sources used in certain publications in Canada during the past five years. This list contains sources generated by government agencies, churches, businesses, institutions and the private sector.[7] The general ambition has been to link together evidence from a variety of sources in order to explain as well as to describe demographic behaviour. In this sense, analysis of population patterns operates at two levels. The first level is purely demographic. The question is simply which vital rate is most important in determining population growth. Were changes in fertility most important in this development, or changes in nuptiality, mortality or migration? The nature of the required analysis may appear fairly simple at first glance but, in fact, the issue is exceedingly complex. Demographers have long been a rather isolated group of scholars; their work is often misunderstood by social scientists and its complexity is dramatically underestimated by historians in particular. Problems of sources are at the heart of the matter. Demographic questions are usually addressed by way of sophisticated calculations based on partial, biased and often ambiguous data. There is very little firm evidence of population trends anywhere in the world before the nineteenth century and it is only in rare instances that sources are available to support confident estimates.

Identifying mortality rates is especially complex, usually involving

numerous assumptions and leaps of faith. This complexity directly affects the prospects of accurately estimating fertility as well. One of the major components of mortality has been infant death, but many such deaths went unrecorded and thus actual fertility may have been greater than the records suggest.[8] Similarly, the dimensions of illegitimacy remain obscure. Children born out of wedlock were sometimes left out to die without record of their birth or death. In addition, the importance of infanticide as a form of birth control is not yet clear. These kinds of gaps in evidence make it very difficult to determine accurately how many children were in fact ever born to a specific female or to a collective generation. Fortunately, nuptiality presents somewhat less difficulty than either fertility or mortality. Age at marriage is better documented than birth and death in most societies as a result of religious and legal formalities.[9] Still, the purely demographic analysis of population growth remains highly speculative and open to a wide variety of interpretations.

The second level of analysis required to explain population patterns follows from the decision about the relative importance of the demographic variables. It is at this point that demography ends and historical demography begins. Once the demographic equation has been decided upon, scholars must then decide what factors caused the end result to change. Recent research includes a wide diversity of approaches and conclusions about this issue. Some indication of the controversy concerning both theory and method was evident at the 1980 meeting of the Canadian Historical Association in Montreal when Thomas McKeown offered a special lecture on the global history of population growth. In response, William McNeill discussed his own perspective in the context of similar research interests. Considered together, McKeown and McNeill raised conceptual and methodological questions which provide a point of departure for discussion of the current state of historical demography in Canada.[10] The basic premise of McKeown's argument concerned the importance of mortality decline to population growth and, in turn, the importance of nutrition to this decline. McNeill substantially agreed with McKeown but downplayed the role of nutrition in the decline of mortality. In this sense, both presentations agreed that mortality was the most important factor in modern population growth but differed over the relative importance of nutrition as an explanatory variable. McNeill would like to give attention to other factors such as the evolution of climatic conditions, which he feels may have been antecedent to improved nutrition and, thus, a more important factor in changed eating habits.[11]

The McKeown–McNeill perspective includes three claims: that mortality is the crucial variable in the demographic equation of the past several hundred years; that mortality has been fundamentally determined by global eating habits; that historical demographers must take a global approach to population patterns and search for a single explanatory

theory. The major variable brought into the explanation is nutrition. McKeown believes that during the course of the eighteenth century people simply began to eat better. At a global level, diet became more nutritious in terms of protecting the body against infectious diseases and as a result individuals lived longer. As life expectancy increased, the population of the earth grew significantly.

The evidence for this argument is circumstantial. McKeown pursues this position almost as a null hypothesis by discounting other possibilities and then accepting nutrition and its importance in preventing diseases as the one remaining explanation. He bases his analysis on what he considers to be current wisdom largely drawn from studies of the third world. McKeown suggests that in the under-developing countries today the ability of given communities to withstand disease is dependent upon their diet. Population growth depends primarily on societal health.

For his part, McNeill is reluctant to accept nutrition as an all-important explanatory variable. To start with, McNeill suggests that McKeown's position is substantively not very interesting. He suggests in fact that it is simply common sense; if people eat better they will certainly live longer. McNeill suggests that the focus of attention should be on *why* people were able to eat better and in this regard he points to factors such as change in climate. McNeill suggests that during the course of the eighteenth century the climate of the earth evolved so that better crops could be produced; as a result, people started to eat better. Again the evidence for this is not very good, but McNeill is persuaded by the specific experience of the Middle East, which is quite exceptional. The population of the Middle East was growing rapidly before the mid-eighteenth century but slowed thereafter. This trend was the exact opposite of the expansion of China, Western Europe, Africa, and most other parts of the world. McNeill believes that, as a result of changes in climate, the soil of most of the world became more agriculturally productive. Specifically, McNeill believes that the world began to experience drier weather during the eighteenth century. However, the soil of the Middle East did not need to be dried. In fact, the new drier weather made farms in the Middle East too dry, and the region's agriculture was no longer able to support a growing population. Thus, the population of the Middle East stopped growing after having increased for centuries, while the rest of the earth's population suddenly grew very rapidly. In this way, McNeill suggests that if we accept the fact that nutrition hindered the spread of infectious diseases and therefore engendered mortality decline then we must consider why nutrition improved. His speculation is that a changed climate led to better agricultural production.

McNeill and McKeown are struck by the fact that population growth seems to have occurred during the eighteenth century almost on a universal basis. In a wide variety of regions of the world, major populations began to grow at a substantial rate. Thus McKeown and McNeill search

for explanations that apply on a global level. It is for this reason that McNeill, in particular, dismisses the importance of findings from recent microstudies in Western Europe. He suggests that whatever happened on a microlevel in Britain for example cannot have happened in the same way in other regions of the earth. Consequently, we should dismiss the potential fruitfulness of continuing to replicate the kind of microstudies that are currently so popular. In the same way, McKeown suggests that using this form of analysis is tantamount to attempting to create a jigsaw puzzle not by drawing a large picture and then cutting it up, but rather by manufacturing little pieces and then attempting to fit them together. His suspicion is that if we continue to manufacture little pieces all we will end up with is a lot of little pieces and not a coherent jigsaw puzzle. McKeown would prefer that analysis continue to operate at the macro-level where he says the phenomena must have operated.

TABLE 1

Select List of Sources Used For Historical Demography in Canada

1. Government/Legal Sources
   - Census
   - Assessment Rolls
   - Land Records
   - Military Records
   - Royal Commissions
   - Correspondence
   - Special Reports/Records
   - Marriage Contracts
   - Maps
2. Churches
   - Parish Registers
   - Tombstones
   - Correspondence
   - Parish Reports
3. Business
   - Directories
   - Ships' Nominal Rolls
4. Institutions
   - Bank Records
   - Benevolent Associations
   - Criminal Records
   - School Records
   - Hospital Records
5. Private Sector
   - Diaries
   - Biographies
   - Genealogies
   - Oral History
   - Personal Correspondence
   - Newspapers (Announcements)
   - Wills
   - Advice Books
   - Antiquarian histories
   - Travellers' Accounts

SOURCE: These types of evidence have been used in studies listed by André LaRose in his annual bibliography of historical demography published in *Histoire sociale/Social History*.

Other scholars insist that this argument discounts the importance of achieving some kind of evidential base concerning the purely demographic "facts" and unnecessarily dismisses microlevel studies. If the discussion on population growth continues to operate in a context in which the parameters remain largely unknown, interesting and imaginative

arguments are the most that we can expect. Many historical demographers claim that it is only by examining the experiences of specific populations through the painstaking work of compiling figures that we will actually get any sense of the overall trend. At this point, we can say quite clearly that the population of the earth has grown and that mortality has declined. People are living longer. We can also say that until quite recently most populations of the earth underwent a substantial period of steady growth. Beyond that, however, we know very little. Trends in fertility, for example, remain very confusing. We really cannot say anything with much certainty other than that in the last hundred years or so, fertility rates have gone down in most countries of the western world and in the last few decades have plummeted quite markedly. Since earlier evidence on fertility is in fact quite scarce at a microlevel, we really do not know its importance within the demographic equation. We must examine specific circumstances in which the demographic variables can be put together.[12]

Secondly, scholars argue that unless we examine the actual ecology of specific communities over various periods of time we will continue to be unable to evaluate whether or not it became easier to produce crops, whether people began to eat better, whether the distribution of food changed, and so on. Unless we can relate these general questions to specific historical circumstances, it is impossible to address their historical as distinct from their imaginative content.[13]

In this regard, we should consider the evidence of a number of recent studies in historical demography and then suggest some ways in which the field can continue to be pushed forward. The most well-known demographic work in Canada is centred at the University of Montreal where scholars began with manual manipulation of census data and parish registers but are now using computers to reconstitute the entire French-Canadian population from the time of New France. In the tradition of Louis Henry and other French scholars, Jacques Henripin put Canada at the forefront of demographic research with books such as *La population canadienne au début du XVIIIe siècle* published in 1954. Hubert Charbonneau advanced this research by a manual reconstitution of families based on parish registers and the censuses of New France. His book *Vie et mort de nos ancêtres*, was published in 1975 and remains the major work of the Department of Demography at Montreal. However, these scholars have now engaged in computerization of the demographic data and while problems of methodology have thus far been the focus of attention, this work will undoubtedly maintain the Montreal group at the frontier of such research.

While scholars such as Henripin and Charbonneau brought demography into historical thinking in Canada, a quite separate tradition emerged outside Quebec during the 1960s. This tradition differs from the Montreal approach in two ways. First, Anglo-Canadian researchers tend to view demographic questions as part of larger issues of social structure; and second, their sources have been generally limited to the census since religious diversity has made use of parish registers very problematic. An aggregate-level approach to Canada-wide population figures was offered by Warren E. Kalbach and Wayne W. McVey in *The Demographic Bases of Canadian Society*. In addition to providing a change-over-time description of population growth, Kalbach and McVey also related demographic patterns to variables such as birthplace, ethnicity, and occupation.

For many scholars, however, aggregate analysis obfuscates at least as much as it elucidates because variables cannot be analysed in the variety of constellations within which they affected demographic behaviour. This difficulty led to a focus on the individual-level data which are available. Michael Katz' Hamilton Project examined the manuscript census returns of 1851, 1861, and 1871 and, as part of a social structural analysis, considered questions of age at marriage, fertility and family size. In terms of the development of historical demography, Katz' work was significant because these questions were addressed with direct reference to the relative importance of factors such as ethnicity and social class.[14] Similarly, David Gagan has approached census data from Peel County in an attempt to identify the ways in which population patterns interrelated with broad social and economic change. By systematically examining the manuscript data of the 1851–1871 enumerations, Gagan was able to examine the material context of issues such as family formation and limitation.[15]

The Anglo-Canadian tradition of census research and historical demography (as distinct from "pure" demography) has provided no support for the positions of McKeown and McNeill as presented at the Canadian Historical Association gathering in 1980. Researchers have focused on fertility rather than mortality and have adopted what might be termed a family strategies approach rather than environmental determinism. For example, R.M. McInnis has pursued the economic theory of fertility in the context of Ontario during the second half of the nineteenth century.[16] This theory, which has gained prominence in the United States, suggests that childbearing patterns should be analysed with reference to the potential value and cost of children. A leading promoter of this perspective is Richard Easterlin, who begins with the argument that "tastes, prices, and income determine the optimal number of children." Easterlin has examined census data from the United States during the nineteenth century and he insists the evidence strongly suggests that "human fertility responds voluntarily to environmental conditions."[17] McInnis has tested this claim by analysing census evidence on the interrelationships of agricultural conditions and fertility. His conclusion is equivocal.

> As was expected an abundance of nearby, uncultivated land affects the probability of there being young children in the household.

> However, the magnitude of its influence is small and it does not consistently affect other childbearing variables in the same way. The strongest result obtained is that fertility falls as larger cities develop sufficiently close by for there to be a real influence of urban life and culture. The behavioral basis for that remains insufficiently explored, however.[18]

As McInnis admits, his study leaves many questions unanswered at least partly because only census data is under examination. The limited number of variables and the still-life quality of the data make the census a very incomplete record for historical demography. However, research has shown that data from different sources can be brought together to form a substantial evidential base appropriate to more rigorous analysis. The methodological problems inherent in this process are formidable but rapid progress occurred during the 1970s. The pioneering work of Ian Winchester was devoted to overcoming the obstacles of linking records created from different data sources.[19] Winchester not only devised criteria for establishing links but also developed a strategy for computerization of the process. This work was initially applied to data from successive census enumerations in an attempt to achieve a more accurate longitudinal perspective. Information about individuals at ten-year intervals was linked together to suggest life-course patterns. As with family reconstitution, however, record linkage of this type is only feasible for individuals who continue to live in specific communities. Although Peter Knights is now showing that individuals can be followed through the records of an enormous variety of sources in geographically distinct areas, this procedure cannot be automated and is too time-consuming to warrant widespread participation.[20] Nonetheless, the creation of data sets composed of records from an array of sources offers vast potential for historical demographic research.

In this context, the Saguenay Project under Gérard Bouchard promises to advance significantly our understanding of the interrelations of population patterns and social change. Although limited in time and space, Bouchard's project is attempting to probe the demographic process "au fond." This research has the advantage of parish registers as well as manuscript census data, employment records, and other routinely generated sources. Because the Saguenay region is thoroughly Catholic, Bouchard is able to reconstitute families through church records of baptism, marriage, and death and then to incorporate into these data additional census information and other contextual evidence. In this way, the project draws upon the strengths of two rich demographic traditions and is creating a data base which may have no equal in the research community. Methodological concerns have thus far been the focus of the group's publications with questions of computerized record linkage at the centre of attention. Project members have built upon earlier work and have now established their own procedures and criteria for merging files with systematic accuracy. The consequent richness of the data base supports examination by demographers, sociologists and medical researchers, as well as historians and other scholars.[21]

While methodological concerns have been paramount heretofore, Bouchard has also given some indication of the type of questions which can now be pursued in the case of the Saguenay. In one study, Bouchard used parish registers and census data to identify vital rates and migration patterns for the rural village of Laterrière during 1851–1935. This research stressed the need for a "double reform of demographic history"; specifically, "the development of a longitudinal perspective which consists in following each family (if not each individual) in time and space" and "the integration of population facts with the totality of social, economic, cultural, and political movements. . . . " Accordingly, Bouchard's analysis integrated demographic description with an examination of Laterrière's social evolution after the mid-nineteenth century. Special emphasis was placed on the connections between geographic mobility, economic opportunity and family strategies of inheritance. Bouchard was able to pursue hypotheses relating to the demographic character of an agro-forest economy including family and household structure and the motivations for migration. His conclusions challenged traditional images of French-Canadian behaviour and suggested new perspectives on late-nineteenth-century development in Quebec.[22]

The rapid advance of historical demography as a mainstream approach to understanding the past has been slowed in the past few years by continued confusion concerning both theory and method. Despite McKeown and McNeill's promotion of a far reaching geographic approach, scholars have generally opted for community studies which avoid problems of ecological fallacy and which permit rigorous multivariate analysis of individual level data.[23] However, the task of synthesizing the findings of these studies has not yet been undertaken with success. Specific methods and measures are often incompatible and data comparison is not always possible. Historical demography in Canada needs at least an initial effort to analyse data across time and space and to place the Canadian experience within the larger literature in the field. Although the case studies which now exist are geographically and temporally limited, an initial synthesis would undoubtedly inspire research on unstudied time and places. In this way, some conclusions about the typicality of Hamilton or the Saguenay, for example, could be suggested.

Comparison of findings from various studies is, of course, only a first step toward a general understanding of demographic behaviour. A more difficult and subjective analysis concerns the meaning of the data. A straightforward comparison of fertility rates in different communities, for example, is not in itself a meaningful exercise in historical demography. Rather, specific findings must be interpreted in the context within

which they obtained and thus a valid comparative analysis might conclude that different fertility rates had the same meaning in different communities. Such analysis requires that clearly articulated concepts guide historical demography and that sources be used with sensitivity and care. A major problem is that most sources such as parish registers and the census offer evidence on behaviour but not on motivation. Scholars are tempted to infer conceptual relationships from behavioural relationships, but this process is fraught with uncertainties and often leads to circular arguments when a single data base is under examination. These conditions have worked against conceptual progress in historical demography; the major sources encourage descriptive rather than explanatory analysis. The need for theory to guide research should be emphasized since there has been a tendency to allow the availability of sources to determine the focus of study. Projects often begin with good sources rather than theoretical justification.[24]

Two partial solutions to the "tyranny of sources" would involve inventories of available material and the creation of data banks for completed research files. Inventories are especially valuable since relevant sources for historical demography are widely dispersed in local churches, libraries, and university archives, to name only a few locations. In most cases, centralization of the sources themselves would be impossible but detailed annotations with appropriate indexing would encourage their use. Many such records, including parish registers, have already been microfilmed and catalogued by the Genealogical Society of the Church of Jesus Christ of Latter-Day Saints centred in Salt Lake City, and this work provides a solid basis for a complete inventory. For the most part, such activity can best occur on a regional basis where local knowledge and familiarity are important factors. However, cataloguing standards and format specifications must be uniform to permit computerization, and thus national co-ordination is also required.[25]

The creation of data banks for historical demography may be more problematic for personal as well as practical reasons. Scholars have a tradition of viewing "research notes" as private property which is only shared with the best of friends. The idea that a painstakingly constructed data file should be simply given to some collection agency does not appeal to many researchers. A carrot-and-stick mechanism might help alter this situation. The carrot would have to entail a way of acknowledging intellectual debt for the original research. Co-authorship might be one strategy, although differences in data interpretation or theoretical perspective would undoubtedly necessitate other techniques in certain cases. The most effective "stick" to encourage data bank deposits is probably held by research support agencies who could stipulate that files which they finance be made available upon their completion. The Social Sciences and Humanities Research Council is already moving in this direction by insisting that bibliographical data bases be created with

standards and formats which have gained acceptance elsewhere. This requirement is only a beginning but it does challenge the traditional notion of private research.

Nonetheless, the possibility of a central data bank for historical demography appears remote for the foreseeable future. A more likely development is suggested by the example of the Philadelphia Social History Project established by Theodore Hershberg in 1972. The project created a massive data base of routinely generated evidence from the nineteenth century and then began inviting scholars to undertake the task of analysis. The data base is housed and maintained at the project, and researchers spend periods of residence while they conduct examination of the various files.[26] A somewhat similar situation developed at the Canadian Social History Project where doctoral students analysed the Hamilton data for their own theses as well as for the project.[27] The success of these examples suggests that collaborative research rather than the creation of data banks will characterize the field of historical demography during the coming years.

The ultimate test of the importance of historical demography will be the extent to which scholars can show that population patterns are directly interrelated with more traditional themes such as politics. The content of introductory history courses would be an indication of progress in this regard. My impression (yes, anecdotes and all) is that course outlines have only changed marginally in the past decade despite developments such as the maturing of historical demography. We still tend to teach male, political and military history with only a lecture or two on the changing structure of individual and family experience. Similarly, suggested term paper topics would probably not go much beyond a list from the early 1960s despite belief in our "modern" consciousness. If these impressions are accurate, introductory history students are being deprived of engaging in one of the most active aspects of historical debate. Questions are posed, sources are available, and the methodology is gaining sophistication. The "ultimate test" must now be passed. To repeat Gérard Bouchard's words, "reform is needed in the integration of population facts with the totality of social, economic, cultural, and political movements. . . ."

Notes

1. The availability of the census for historians is discussed by David H. Flaherty in "Access to historic census data in Canada: a comparative analysis," *Canadian Public Administration* 20 (1977): 481–98. Recent research which uses census evidence includes Louise Dechêne, *Habitants et Marchands de Montréal au XVIIe siècle* (Montreal: Plon, 1974); Michael B. Katz, Michael J. Doucet, and Mark J. Stern, *The Social Organization of Early Industrial Capitalism* (Cambridge, Mass.: Harvard University Press, 1982); David Gagan, *Hopeful Travellers: Families, Land, and Social*

Change in Mid-Victorian Peel County, Canada West (Toronto: University of Toronto Press, 1981); and the publications of the Project d'histoire sociale de la population du Saguenay, such as Gérard Bouchard, "Introduction à l'étude de la société Saguenayenne aux XIXe et XXe siècles," *Revue d'histoire de l'Amérique française* 31 (June 1977).

2. For background on census data, see David Gagan, "Enumerators' Instructions for the Census of Canada, 1852 and 1861," *Histoire sociale/Social History* 7 (1974): 355–65, and Alan A. Brookes, " 'Doing the Best I Can': The Taking of the 1861 New Brunswick Census," *Histoire sociale/Social History* 9 (1976): 70–91. A number of debates have arisen about the meaning and accuracy of specific variables. For examples, see H.J. Mays and H.F. Manzl, "Literacy and Social Structure in Nineteenth Century Ontario: An Exercise in Historical Methodology," *Histoire sociale/Social History* 7 (1974): 331–45; Harvey S. Graff, "What the 1861 Census can tell us about Literacy: A Reply," *Histoire sociale/Social History* 8 (1975): 337–49; and R.M. McInnis, "Some Pitfalls in the 1851–1852 Census of Agriculture of Lower Canada," *Histoire sociale/Social History* 14 (1981): 219–31. The intricacies of record linkage are detailed in Ian Winchester, "The Linkage of Historical Records by Man and Computer: Techniques and Problems," *Journal of Interdisciplinary History* 1 (1970): 107–24, and an historian's guide is offered in Ian Winchester, "Priorities for Record Linkage: A Theoretical and Practical Checklist," in *Historical Social Research: The Use of Historical and Process-Produced Data*, ed. Jerome M. Clubb and Erwin K. Scheush (Stuttgart: Kletta-Cotta, 1980), 414–30.

3. For an accessible sampling of demographic approaches in historical and contemporary perspective, see "The Human Population," a special issue of *Scientific American*, September 1974. The best introduction for historians is E.A. Wrigley, *Population and History* (New York: McGraw-Hill, 1969). The problems of using cross-sectional data to study longitudinal change are discussed in Robert Wells, "On the Dangers of Constructing Artificial Cohorts in Times of Rapid Social Change," *Journal of Interdisciplinary History* 9 (1978): 103–10.

4. E.A. Wrigley, "Family Reconstitution," in *An Introduction to English Historical Demography*, ed. E.A. Wrigley (London: Weidenfeld and Nicholson, 1966), 96–159, and "Some Problems of family reconstitution using English parish register material: the example of Colyton," in *Communications, Third International Conference of Economic History, 1965* (Paris: Mouton, 1972), 199–221. Similarly, David Levine, "The Reliability of Parochial Registration and the Representativeness of Family Reconstitution," *Population Studies* 30 (1976): 107–22. The Department of Demography at the University of Montreal is a world leader in the use of parish registers for demographic research; see Hubert Charbonneau, *Vie et mort de nos ancêtres: Étude demographique* (Montreal: Université de Montreal, 1975), as well as the classic work by Jacques Henripin, *Tendances et facteurs de la fécondité au Canada* (Ottawa: Bureau fédéral de la Statstique, 1968). Also, see Gérard Bouchard, "Family Structures and Geographic Mobility at Laterrière, 1851–1935," *Journal of Family History* 2 (Winter 1977): 350–69.

5. Kinship has not been an important topic for historical demographers. Suggestion of some of the possibilities is offered by John J. Mannion, *Point Lance in Transition: The Transformation of a Newfoundland Outport* (Toronto: McClelland and Stewart, 1976); and Rosemary Ommer, "Highland Scots Migration to Southwestern Newfoundland: A Study of Kinship," in *The Peopling of Newfoundland*, ed. John J. Mannion (1977).

6. This list is based on the publications listed by André LaRose in "A Current Bibliography on the History of Canadian Population and Historical Demography in Canada," which has appeared annually in *Histoire sociale/Social History* since 1977.

Discussion of all sources which have been used by historical demographers exceeds the focus of this paper. For example, the studies of artifacts and tombstones deserve full consideration in their own rights. Some indication of this variety is suggested by P. Schledermann, "Prehistoric Demographic Trends in the Canadian High Arctic," *Canadian Journal of Archaeology*, 2 (1978): 43–58; and Patricia Thornton, "The Demographic and Mercantile Bases of Initial Permanent Settlement in the Strait of Belle Isle," in *The Peopling of Newfoundland*, ed. J.J. Mannion, 151–83.

7. These problems are obviously less important for twentieth-century research. For the modern period, see Warren E. Kalbach and Wayne W. McVey, *The Demographic Bases of Canadian Society* (Toronto: McGraw-Hill, 1971).

8. The importance and meaning of illegitimacy have been central issues in recent debates among historical demographers; see, for examples, Peter Laslett, *Family Life and Illicit Love in Earlier Generations* (Cambridge: Cambridge University Press, 1977); Peter Laslett, Karla Oosterveen, and Richard M. Smith, eds., *Bastardy and Its Comparative History* (London: Edward Arnold, 1980); Edward Shorter, "Illegitimacy, Sexual Revolution and Social Change in Modern Europe," *Journal of Interdisciplinary History* 2 (Autumn 1971): 237–72; and David Levine and Keith Wrightson, "The Social Context of Illegitimacy in Early Modern England," in *Bastardy*, ed. Laslett, Oosterveen, and Smith, 158–75.

9. For an introduction to this topic, see John Hajnal, "European Marriage Patterns in Perspective," in *Population in History*, ed. D.V. Glass and D.E.C. Eversley (London: Edward Arnold, 1965). An example of recent research in John Knodel and Mary Jo Maynes, "Urban and Rural Marriage Patterns in Imperial Germany," *Journal of Family History* 1 (1976): 129–68.

10. Major works include Thomas McKeown, *The Modern Rise of Population* (London: Edward Arnold, 1976) and *The Role of Medicine* (Oxford: Basic Blackwell Ltd., 1979); William H. McNeill, *The Human Condition* (Princeton: Princeton University Press, 1980) and *Plagues and People*, (Garden City, N.Y.: Anchor Press, 1976).

11. McKeown dismisses the argument that improved medical practices had an important effect on population growth; see Thomas McKeown and R.G. Brown, "Medical Evidence Related to English Population Changes in the Eighteenth Century," in *Population in History*, ed. Glass and Eversley, 285–307.

12. For example, David Levine, *Family Formation in an Age of Nascent Capitalism* (New York: Academic Press, 1977).

13. Some of the best work in historical demography has been collected in the following books: Ronald Demos Lee, ed., *Population Patterns in the Past* (New York: Academic Press, 1977); Charles Tilly, ed., *Historical Studies of Changing Fertility* (Princeton, N.J.: Princeton University Press, 1978); and Maria A. Vinouskis, ed., *Studies in American Historical Demography* (New York: Academic Press, 1979).

14. Michael B. Katz, *The People of Hamilton, Canada West: Family and Class in the Mid-Nineteenth Century* (Cambridge, Mass.: Harvard, 1975), and M.B. Katz, Michael J. Doucet, and Mark J. Stern, *The Social Organization of Early Industrial Capitalism* (Cambridge: Harvard, 1982).

15. David Gagan, "Land, Population, and Social Change: The 'Critical Years' in Rural Canada West," Canadian Historical Association, *Historical Papers* 14 (1978): 293–318, and *Hopeful Travellers: Families, Land, and Social Change in Mid-Victorian Peel County, Canada West* (Toronto: University of Toronto, 1981).

16. R.M. McInnis, "Childbearing and Land Availability: Some Evidence from Individual Household Data," in *Population Patterns in the Past*, ed. R.D. Lee, 201–27.

17. Richard A. Easterlin, "Does Human Fertility Adjust to the Environment?" *American Economic Review* 61 (1971): 399–407.

18. McInnis, "Childbearing and Land Availability," 226.

19. See note 2 as well as E.A. Wrigley, ed., *Identifying People in the Past* (London: Arnold, 1973).

20. Peter Knights, "The Facts of Lives; or Whatever Happened to 2808 Nineteenth Century Bostonians?" paper presented to the Canadian Historical Association, June 1982.

21. Examples of recent publications included Gérard Bouchard, "Demographie et société rurale au Saguenay, 1851–1935," *Recherches sociographiques* 19 (1978): 7–31 and "Un Essai d'Anthropologie Régionale: L'Histoire sociale du Saguenay aux XIXe et XXe siècles," *Annales: Economies, Sociétés, Civilisations* 34 (1979): 106–25. For a description of research strategy, see Bouchard and Yolande Lavoie, "Le Projet d'histoire sociale de la population au Saguenay: l'appareil méthodologique," *Revue d'histoire de l'Amérique française* 32 (1978): 41–56.

22. Bouchard, "Family Structures and Geographic Mobility at Laterrière, 1851–1935," *Journal of Family History* 2 (1977): 350–69.

23. Some examples of recent work include Chad M. Gaffield, "Canadian Families in Cultural Context: Hypotheses from the Mid-Nineteenth Century," Canadian Historical Association, *Historical Papers* (1979): 48–70 and Bettina Bradbury, "The Family Economy and Work in an Industrializing City: Montreal in the 1870s," Canadian Historical Association, *Historical Papers* (1979), 71–96. For helpful listings of recent publications, see the annual bibliographies compiled by André LaRose in *Histoire sociale/Social History*.

24. Discussion of these and related problems is included in Maris A. Vinovskis, "Recent Trends in American Historical Demography: Some Methodological and Conceptual Considerations," *Annual Reviews in Sociology* 4 (1978): 603–27.

25. Progress towards bibliographic computerization is surveyed in C.D. Batty, "The Use of Computers in Bibliographical Compilation," in *Systematic Bibliography*, ed. A.M. Lewin Robinson, 3d ed. (London: Clive Bingley, 1971), 78–86; and, more recently, the group of articles under the heading, "Library Data Banks—electrifying the book shelves," in *Data Management* 20 (January 1982).

26. The results of this activity are reported in Theodore Hershberg, ed., *Philadelphia: Work, Space, Family and Group Experience in the Nineteenth Century: Essays Toward an Interdisciplinary History of the City* (Oxford and New York: Oxford University Press, 1981).

27. These theses include Harvey J. Graff, "Literacy and Social Structure in the Nineteenth Century" (Ph.D. thesis, University of Toronto, 1975); and Ian Davey, "Educational Reform and the Working Class: School Attendance in Hamilton, Ontario, 1851–1891" (Ph.D. thesis, University of Toronto, 1975).

ECONOMIC HISTORY AND THE LIMITS OF STAPLE THEORY†

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Economics is vital to historical understanding, although not all contemporary economic theory can be applied to history. Economic history is a bridge between the two disciplines that is pursued by those trained in economics or specialized programs. At one time closely allied to history, economic history has moved closer to economics during the past several decades as economics itself has become more mathematically oriented.

The tradition of political economy within economic history has highlighted the importance of economic factors in explaining historical developments. In this area, Canada's foremost contribution has been the staples thesis, which was most fully explored by Toronto economist Harold Innis during the period between the two World Wars. Innis brought to light the fundamental role that the export of staple commodities—fish, furs, timber, wheat, and mineral resources—had played in shaping the Canadian economy. The demand for timber from the Ottawa and St. John River valleys early in the nineteenth century or the rush for gold in the Klondike after 1896 brought significant social and economic consequences, but Innis also adduced important political repercussions. Staple production meant that Canada was formed not in spite of its geography, but because of it, and economic activity such as the fur trade had even helped to define national boundaries.*

† "Staples, Super-Staples and the Limits of Staple Theory: The Experiences of Argentina, Australia and Canada Compared," in *Argentina, Australia and Canada: Studies in Comparative Development 1870–1965*, ed. D.C.M. Platt and Guido di Tella (New York: St. Martin's Press, 1985), 19–36.

* See W.T. Easterbrook and M. Watkins, eds., *Approaches to Canadian Economic History* (Toronto, 1967) and the *Journal of Canadian Studies* 12 (Winter 1977) devoted to Harold Innis.