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Harry Page's paper allows us, I think, to have a good understanding of the feeling of frustration which affects, in our time, a great number of Canadian demographers. Let us have a close look at two particular points:

On the one hand, Vital Statistics only give obviously too summary informations on the demographic evolution of Canada. The progress of demographic analysis, during the past thirty years has thought us that, in order to study the occurrence of demographic events, the best approach consists in taking into account their necessary succession in an individual's history. In other words, if the occurrence of an event B is to be studied, a demographer shall first try to find out what is the event A which is the most immediately and necessarily anterior to B:

- for divorces, widowhood, first order legitimate births, the anterior event is marriage;
- for second order legitimate births, the anterior event is the first order legitimate birth... etc.

Then the demographer will try to calculate:

- a) the average number of occurrences of B per person having lived through event A;
- b) the distribution of time-intervals between the occurrence of events A and B.

Now, for want of pertinent questions on Vital Statistics forms, such an approach is most often not possible in Canada. For instance, we don't know how many brides of a given marriage cohort have a first child; and of course we don't know either the time-interval since marriage.

On the other hand, we know that the administration of the Canadian system of family allowances might supply, at least for fertility, the very informations we are lacking, if only these informations were treated by an appropriate statistical process.

Thank God, Mr. Harry Page just announced the near end of our misfortune. It seems that he has taken good note of certain provinces irreducible opposition to any drastic revision of vital statistics forms, and he offers us today with our sheet-anchor: the automatic linkage of records, which will at last supply the informations that we have waited for so long.

I had the opportunity to follow the work of Hubert Charbonneau and Jacques Légaré who, at the Department of Demography of the Université de Montréal, are precisely doing the automatic linkage of vital statistics records of New France, during the 17th and 19th centuries. And we know that such an operation requires, besides talent, a great deal of time, and of technical and financial means. No doubt the researchers of

Statistics Canada have the talent. But will they also have, easily and rapidly, all the desirable technical and financial means? More precisely — and this is a question for Mr. Page — in how many years from now will all necessary informations be easily and regularly available?

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The automatic linkage process raises delicate problems of identification and Newcombe's experience shows it clearly. In an article published in 1969 in "Population", Newcombe stated that these identification problems would be reduced if the date of birth of spouses was recorded on the marriage record and if the date of birth of parents was registered on the birth certificates. Then it seems that a fundamental revision of vital statistics records could only contribute to improve the efficiency of automatic record-linkage. Consequently I wonder if, whatever hope one places in record linkage, one should not start the battle again for the revision of vital statistics certificates.

The opposition to adding new questions, and particularly questions relating to demographic events, cannot be maintained, it seems to me, in all good faith. Why would it be politically and administratively more delicate to ask the date of birth instead of age, as was done at the 1971 Census? Why would mothers refuse to give the date of their last confinement, when they give, at the census, the date of birth of their children? And is it more puzzling to ask the date of marriage of the mother, than to ask, as it is now done, if the father and the mother are married to each other? If only the recording of these three dates was obtained from the provincial governments, a great improvement in Canadian Vital Statistics would be realized. And it should be noted that this improvement would have a very low cost.

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Whatever may be our personal training, we will all agree, I think, that the innovations contemplated by Statistics Canada are to be welcomed. But I would like, at the end of these comments, to suggest one supplementary innovation which seems necessary.

There is general agreement that in Canada, the recording of demographic events is practically exhaustive. But completeness of recording does not necessarily mean completeness of tabulation. Because of the very long delays between the occurrence of an event and its local recording, and also between local and central recording, a certain number of records are not received on time and cannot be submitted to statistical processing. That is a regrettable situation for two reasons:

- a) the magnitude of the under-utilization of data. For the Province of Quebec only, 3 to 4000 births, out of an annual total of 100,000, are lost in this way for the analysis.
- b) the time-selection of this under-utilization. The Late records predominantly relate to events occurring during the last months of the year, so that any analysis of seasonal variations from published data is bound to be biased.

If all that is right — and Mr. Page can tell us about it — wouldn't it be possible to envisage two types of vital statistics tabulation:

- a) a current tabulation of records which are received on time;
- b) a revised tabulation, one or two years later, which would integrate late records?

In their paper, Nathan Keyfitz and Anders Lunde have sketched with brio a wide panorama of the potential analyses offered by vital statistics, and they have underlined, in the conclusion, that there is a long way to the full exploration of these possibilities. Since they have said almost everything, I shall limit myself to two complementary remarks.

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My first comment is related to the authors' insistence on placing vital statistics analysis under the heading of past reconstruction. Without denying that this is an important aspect, I would like to mention that the analysis of vital statistics also permits, in certain circumstances, to get some insight of the future.

It may happen, indeed, that the simple calculation of demographic indices leads without ambiguity to the conclusion that a certain increase (or decline) of nuptiality or fertility, during a recent period, cannot be interpreted as a lasting but an obviously transitory phenomenon. Such indices as parity-progression ratios and cumulative age-specific current marriage rates<sup>(1)</sup> have been of great help in allowing demographers to point out catching-up periods or periods during which the occurrence of events is postponed. Such successes in the diagnosis of a situation have certainly played an important role in the reputation of seriousness that demography has acquired.

(1) Called "mariages réduits" in French.

Most certainly also, such successes require particularly refined vital statistics data. One particular refinement which is required is the possibility to calculate time-intervals between consecutive events. For this, we need the date of occurrence of the most important previous events. In other words, it is required that the events observed during a given year can be associated easily to their respective type of cohorts: generation, marriage cohorts, parity-X women... etc.

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My second comment is motivated by the lack of reference, in the paper, to the possible use of the vital statistics system, as a support for a follow-up type of observation.

To my knowledge, the most extended example of that kind of utilization, is the French survey of mortality by occupation. The 1954 Census has been used to draw a sample stratified by occupation. Since then, year after year, death certificates of the sampled individuals are searched by the vital statistics personnel and periodically, the survivors are contacted to control the validity of the survey.

A similar process might be used for surveys of a different nature, fertility surveys for instance. Whenever a personal identification number has been selected, it is easy, through the vital statistics system, to collect informations related to the individuals of the sample in a longitudinal way. One of the advantages of such a procedure — it is worth while mentioning it — is to eliminate selectivity effects and to avoid the problems related to the interpretation of ex-post variables.

There is no doubt that the utilization of vital statistics in this way will be of great help to future demographic research.

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To conclude, if it is true that vital statistics still have more to teach us on the past, as Keyfitz and Lunde have very well shown, they can as well become a more efficient tool for demographic future prospecting, if they are properly managed.