

STANFORD UNIVERSITY SCHOOL OF MEDICINE

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DEPARTMENT OF GENETICS

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Dr. Bertie H. R. Woolf  
Executive Secretary  
Human Ecology Study Section  
Division of Research Grants  
National Institutes of Health  
Bethesda 14, Maryland

Reference: NIH grant HD-00045-01

Dear Dr. Woolf:

I was happy to learn from Dr. Bodmer of the constructive results of his visit with you in company with our colleagues at the Bureau of the Census and the National Institute for Child Health and Human Development. I believe that you brought up the question of a site visit, and I hasten to say that we would welcome this as a most constructive means of clearing up any of the questions that you and the study section might have, and also as a means of eliciting specific constructive comments on the specifications of the census tabulations which are the main substance of our request.

I am particularly encouraged by the cooperative spirit of the discussions that Dr. Bodmer reported on. This should be a promising sign for establishment of a meaningful understanding involving the federal bureaus and academic scientists like ourselves interested in the efficient application of population data for medical problems. After all, the census is unquestionably the most extensive source of data on human biology, and ~~it~~ would be foolish not to utilize reasonable opportunities for taking advantage of the very large investment that goes into the production of this file for a wide variety of important health-related research questions. As indicated in our application, we are most interested in establishing output files that would be of the greatest usefulness for further research, and also in relying on the advice of a number of our colleagues in establishing these specifications. Dr. Bodmer has already taken steps in this direction, for example, during his attendance at the recent Macy Conference on human genetics.

I enclose some remarks that Dr. Grabill from the Bureau of the Census has summarized on the utility of childspacing information for the analysis of fertility. I would second these remarks and ask that they be included, together with his letter, as part of our application, but I would put special stress on item 5 of his outline, the significance of these studies as a control base for other health statistics with special reference to (1) mental retardation, (2) the perinatal morbidity study now under way under the auspices of the NINDB, especially a more detailed analysis of the relationship between maternal age and parity of birth, and duration since the last previous birth. In our

application I have already alluded to the connection between this analysis and the understanding of the etiology of mongolism, which is so strongly influenced by maternal age.

Our application also instances several other studies which have been clearly enough formulated, for example, family structure with respect to sequence of sexes and with respect to the effect of sex of a given child on the interval to the next one.

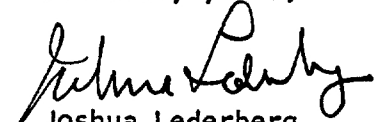
A very important by-product of any of the specific tabulations which are produced as the basic purpose of this research will be the production of pre-tally data tapes which contain most of the essential information for the further study of distributions, but from which all confidential information has already been deleted, and which can therefore be made more conveniently and widely available than is possible for the original census file.

Finally, as our discussions have initialled, our cooperation with the Census Bureau will make it possible to produce statistical measures of distributions of family data for research purposes which are painfully lacking in published tabulations which are used primarily for meeting requirements for information on a different basis than for demographic research. These measures, principally the series of moments of the distributions in the tabulations, are important not only for an understanding of the data as they are usually presented, but because of the adjustments and poolings that are necessarily involved in the practical production of published tables, are not often readily re-obtainable from the final output tables themselves.

There are a number of limitations in census data, as we are very well aware, and there are, of course, a number of sources of bias that must be taken account of. It would be most constructive to discuss these in more detail with a site visiting group; for example, as cannot be reiterated too often, the census data refer to households rather than families, and measures must be taken to account for families with incomplete membership in the household. It is not sufficient to merely count those households which have complete families, although this criterion can be established by comparing the reported total number of children ever born to the number of children presently resident, since there can be a significant bias, for example, in the sex of absent children, both from sex-dependent differential mortality and age at departure from the family group. Since the main bulk of the computational effort in this project will be borne by the Bureau of the Census, it is perhaps in the elucidation of problems of this kind that most of our own creative effort will be spent, in cooperation with them.

Whatever the limitations, in certain respects, of the present data, they represent too valuable a file to overlook in studying these problems. Furthermore, only such a study can establish the basis on which future census enumerations can be conducted in a biologically more meaningful context.

Sincerely yours,

  
Joshua Lederberg  
Professor of Genetics