mortality from all causes and from all medical causes (excluding trauma) than did DZ twins.
Using life-table methods, survival (l_x) functions have been computed from the accumulated data that estimate the probability of living to a specific age for the twins surviving their brothers death. These functions have been compared between MZ and DZ twins and a somewhat greater mortality was found among the MZ twins. For all MZ twins, the probability of living to a specific age was comparable to that of the DZ twins.
The various measures of concordance for early total mortality and for early mortality from medical causes provide various evaluations of the genetic determination of these events.

Dr. Zdenek Hrubec, Department of Environmental Hygiene, The Karolinska Institute, S-104 01 Stockholm 60, Sweden

TWIN CONCORDANCES IN SWEDEN FOR MORTALITY AND THEIR VARIATION WITH ZYGOSITY

ZDENEK HRUBEC, ULLA LORICH, ULF DE FAIRE, TORBJÖRN LUNDMAN

Department of Environmental Hygiene, The Karolinska Institute, Stockholm, Sweden
Medical Department, Serafimer Hospital, Stockholm, Sweden

The Twin Registry of the Karolinska Institute in Stockholm consists of 9680 male and 12210 female individuals, identified as same-sex twins from birth certificates for the years 1886 to 1925, and replying to a questionnaire in 1961. These twins are being followed for mortality through the Swedish Central Bureau of Statistics and through questionnaire mailings. In June 1972 there were 1341 deaths among the males and 1269 deaths among the females. There were, respectively for males and females, 237 and 199 twin pairs with both members deceased. Only 92.9 and 65.9 such pairs would be expected respectively among the males and the females in the Registry under the hypothesis of no association of death within pairs.
Using the questionnaire responses it has been possible to classify the concordantly deceased twins as MZ and as DZ. Differences in mortality concordance between the two zygosity groups are evaluated using intrapair correlations of age at death and concordance rates for deaths from different causes.
Various cause-of-death groups appear to have different degrees of genetic determination. While the extent of apparent genetic determination depends on the measures of concordance used, the relative ranking of different diseases seems fairly consistent.

Dr. Zdenek Hrubec, Department of Environmental Hygiene, The Karolinska Institute, S-104 01 Stockholm 60, Sweden

TECHNIQUES AND PROBLEMS OF DYNAMIC FEATURES IDENTIFICATION IN HUMAN POPULATION PARAMETERS WITH A SPECIAL REFERENCE TO THE SERIAL ANALYSIS OF INFANT MORTALITY

ANTONIO BELLACICCO

Department of Statistics, University of Rome, Italy

As a general rule, we have to distinguish between observational data and experimental data. As a consequence, we have to distinguish among the various techniques to be used in the analysis of a given phenomenon.
In the same way, we distinguish between instantaneous and dynamic phenomena.
Chronogenetics concerns the temporal evolution of hereditary parameters. Generally speaking, there are phenomena, like mortality, which can be analysed either through special stochastic models, like Poisson processes, particularly suitable for experimental data, or through the approximation of "given" data by dynamic models and analysis of basic hidden characteristics, like principal cycles.
As an example of the latter approach, infant mortality can be studied in a dynamic way through spectral-analysis techniques. This approach can help the researcher in building up suitable models of the evolution of some basic characteristics in a population. Moreover, it is possible to detect the environmental influence and therefore to