

therefore, construct the frequency histogram for the 'distances' between the similar pieces and see if there are typical ones. If such values are there, and the histogram does possess sharp peaks, then they can be regarded as the shifts between the portions influenced by P_0 .

The simplest piece is two consecutive cards. If K was, in fact, obtained by means of the described mechanism, then we can expect a considerable number of nearby cards in the final deck to be neighbouring also in the original ones. Therefore, the frequency histogram for scatterings between the cards which were placed side by side in K at least once should make peaks around the values of the typical shifts between 'duplicates'.

2 The notion of a chapter-generation

The 'frequency damping' and also 'frequency duplicating' principles, have been formulated by Fomenko (1981a,b,c). The numerous versions are based on the analysis of the frequency of use, by the chroniclers, of proper names and parallel passages, etc. It should be noted that none of them pretends to universality, since we analyze multilayered chronicles which are often subjectively tinged. With the discovery in archives of an unknown ancient text, there arises the problem of dating the events described, possibly solely on the basis of its quantitative characteristics, and not on its contents which can be interpreted in substantially different ways.

For brevity, we call a textual fragment describing the events of one generation (approximately) a *chapter-generation* (or simply *chapter*). Let a narrative (historical) text X embrace the events in a sufficiently large time interval (A, B) , that is from a year A to a year B . Assume that this text is broken (or can be broken) into separate chapters $X(T)$, where T denotes the number of a 'generation' described in a fragment of the text $X(T)$. Meanwhile, we assume that the numbering of the chapters $X(T)$ is determined by their order in the text X . The natural question arises: *have these chapters been correctly ordered chronologically by the author?* If, however, the correct numeration of the chapters has been lost (or is unknown or doubtful), then how can it be restored?

3 Frequency damping principle

Let a time interval (A, B) described in a text be sufficiently large, i.e. tens of hundreds of years long. Then, as was discovered by Fomenko (1981a,b,c; 1983a,b; 1984a,b; 1985a,b) while processing quantitatively the information contained in a large set of actual historical texts, the following important observation should be taken into account. It turns out that, in the overwhelming majority of cases, different historical characters bear different names in the text.

We now formulate the *theoretical frequency damping principle*.

In chronologically correct ordering of chapter-generations of a text X , the author changes historical characters, while passing from the description of the events of one generation to those of subsequent generations. Namely, in describing those prior to a fixed chapter-generation numbered T_0 for a given ordering of chapters, the chronicler mentions no characters of T_0 . With a chronologically correct ordering of chapters this can be explained by the simple fact that these persons have not yet been born. Then, in describing T_0 , the chronicles speak most of the historical characters of this generation just in the chapter $X(T_0)$. It is quite understandable, for the historical events described by the author are related to the persons alive at that time. Finally, passing to the description of subsequent generations, the chronicler mentions the prior characters of the generation T_0 still more rarely, which is also natural, because the author describes the new historical events of the