

**THE PRINCIPLE OF THE INFORMATION MAXIMUM,
HIERACHY OF ELEMENTS OF CULTURE,
AND MEASUREMENT OF INDIVIDUAL CULTURAL DEVELOPMENT**

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The principle of the information maximum is considered to be a good basis for building models of various systems, mainly social ones (Golitsyn & Petrov, 1995). In turn, the most widely spread particular version of this principle is the principle of the entropy maximum, which possesses different variants; whenever resource limitation arises, Zipf's law (Zipf 1949) will come into play to connect the probability of the elements with their ranks within the system studied. In studies of art and culture this law becomes one of the most fundamental regularities (see, e.g. Martindale 1995).

Any system of culture consists of discrete elements, which are assimilated by different subjects. These elements constitute a hierarchical structure with vertical dimension determined by the number of subjects having assimilated each given element. The horizontal dimension reflects overlapping of sets of subjects having assimilated different elements. So a tree-like structure is formed, consisting of a "trunk", and "branches", and "twigs", etc. Such a structure has some features of "self-similarity"; i.e. it contains a kind of so-called "fractals".

For the "trunk" and each branch of this structure a model for the assimilation of its elements can be built (Petrov & Yablonsky 1980, Suna & Petrov 1985). Here the main coefficient in Zipf's formula (describing the probability that a given subject has assimilated an element of a given rank) evidences the subject's individual cultural efforts towards increasing his/her diversity of cultural assimilation. For this reason this coefficient was called the "index of cultural activeness". Such an index was used in many sociological and psychological investigations.

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