

such objects as retrieval services, and not just retrieval systems. However, the expediency of evaluating other macroevaluated objects may also be arguable. An interesting example is a search strategy. By "a search strategy" we mean a set of rules (operations) governing the search process. In particular, these rules may provide for correcting a query formulation, selecting the best search method (from several different methods), and so forth. It is clear that the evaluation of a search strategy, much as the evaluation of a retrieval service, should allow for the prediction of the functional effectiveness of a search for specific queries. (In this context these objects may be considered similar.) At the same time, it is important to stress that a retrieval service represents a more "fuzzy" object from the perspective of evaluation than does a search strategy because, unlike the search strategy, the search process in a search service is not specified. For example, it is rather reasonable to assume that in a search for different search requests, a retrieval service may utilize different search strategies. Such a possibility should be pursued in further studies along with those addressed in Cherniavsky & Lakhuti (1970) and Lakhuti (1971) when dealing with the evaluation of retrieval services. Lakhuti also indicated this possibility when discussing the evaluation of retrieval services

Evaluation of search with manual correction of queries, i.e., essentially the evaluation of a retrieval service, calls for a special study. It should be clearly realized that debugging and evaluation of (algorithmic) retrieval system and (non-algorithmic) retrieval service are very dissimilar. It is reasonable to debug and evaluate the algorithmic retrieval system in algorithmic mode without manual "query game," whereas the system should be used under specific conditions of a retrieval service using any procedures, including non-algorithmic ones, such as, for example, supplementary (test) "query game," and be evaluated in the same mode. (Lakhuti, 1971)

Lakhuti's remark also confirms our assumption that a retrieval service may provide for various search strategies; that is, it confirms the "fuzziness" of retrieval services from the point of their evaluation. Hence, for the purpose of a more accurate evaluation of a retrieval service, it is essential that in consideration of this object all search strategies used in it appear in an explicit form. Note that the prediction of the functional effectiveness of a search (for a specific search request) based on an evaluation of search strategy is more accurate than that based on the evaluation of retrieval service. The reasons for this assumption lie in the fact that the search strategy defines a more specific search process for any individual search request in comparison with a retrieval service (in general).

Furthermore, note that in connection with the realization of search strategies, a need arises to evaluate another macroevaluated object, namely, a scheme for the creation of a document search variant. Recall that in a number of papers by one of the authors (see, e.g., Voiskunskii, 1985), the *document search variant* was defined as a pair: (query formulation, output criterion). One of the methods

for creating the document search variant follows from the definition involving the execution of two procedures: the construction of query formulations and the formulation of an output criterion. Note that each of these procedures may have different realizations, and by "realization" of a corresponding procedure we mean a certain algorithm or technique that enables the execution of a desired process. The set of specific realizations of the procedures mentioned earlier, whose execution allows the document search variant to be created, was named the *creation scheme of a document search variant*.

It is important to clarify the relationship of the notions discussed earlier. For this purpose consider a hypothetical retrieval service utilizing, for example, an interaction information retrieval system offering a retrospective retrieval function. Assume that a retrospective collection of document profiles in this system is formed automatically from some collection of documents. Also assume that several algorithms for constructing query formulations are available in the system and that each of these algorithms uses information obtained during a dialogue with a user. This information may be presented in the form of a search request in natural language, the user's evaluation of the documents obtained by the system, and so forth. Any of these algorithms is a corresponding (algorithmic) realization of a procedure for constructing query formulations discussed earlier. As for the output criterion for constructing query formulations used in an explicit form because only one output criterion is generally used in retrieval systems. At the same time, the output criterion used in our information retrieval system may be thought of as a result of a certain realization of its formulation procedure. In general, such a realization, depending on particular conditions, may lead to different output criteria, but in our case the same output criterion will be always formulated. Such an assumption makes it possible to say that the information retrieval system under consideration has several creation schemes of document search variant, each consisting of a "conditional" realization of the output criterion formulation procedure and one of the available algorithms for constructing query formulations. It is clear that when created in this case document search variants for the same search request differ only in the query formulations. The possibility of creating different document search variants assumes that there is a mechanism for selecting the best variant (in a certain sense). We will assume that such a mechanism is available in our system, and it allows one to algorithmically select a document search variant that will attain the highest functional effectiveness among the available variants (this issue is described in more detail in Voiskunskii, 1985). Finally, we assume that the system considered has at its disposal an algorithm for ranking documents in descending order of pertinence.

Mechanisms available in our system allow for the creation of various search strategies. As an example, we will consider two such strategies. The first search strategy is oriented toward users who favor a high precision level in