Book Reviews

FUGMANN, Robert: **The Analytico-Synthetic Founda-tions for Large Indexing and Information Retrieval Systems.** Bangalore, IN: Sarada Ranganathan Endow-ment for Library Science 1983. 58 p. = Sarada Ranga-nathan Endowm. for. Libr. Sci. Series 16; Sarada Ran-ganathan Lectures 14. 1982

Classification shares the fate of many fields in a society based on the principle of the division of labour: theori-zation and practice are endeavours pursued by different groups of people who have very limited possibilities of comparing results with one another. R. Fugmann is one of those exceptional people who are both theo-rists and practitioners. In many articles in various journals, including this one, he has considered the basic problems of making literature accessible to retrieval and has — at the same time — been engaged in the practice of chemistry documentation. His lectures, here under discussion, provide an excellent and very readable résumé of his work.

In the first chapter, he first formulates five axioms for information supply and indexing[1], the term 'axiom' being used in the older mathematical sense of a basic, self-evident statement. These statements and require-ments are explained with examples.

In the second chapter, he examines the vocabulary of indexing languages. Using easily understandable exam-ples from the field of plant protection, he first points out the complex term relations which may occur even in small vocabularies. In order to obtain reliable and non-accidental indexing results, the author recommends separating the names of individual concepts from the indexing vocabulary. As these names are generally unambiguous, they can be collected from the text by clerical personnel. They are certainly indispensible for information retrieval but are no substitute for an index-ing language and are merely part of the system. An "artificial" indexing language with a controlled vocabu-lary or with notations is needed for those "general concepts" for which there is a variety of possible ex-pressions of circumlocutions in an authors language. If the vocabulary grows commensurately with the num-ber of documents in the file, the danger arises that the indexing result will become neither reproducible nor predictable as the indexer loses his overall grasp of the vocabulary as a whole. For this reason, the vocabulary must be structured and an indexing language syntax employed. In this case the author recommends the analytico-synthetic method, as with this process the vocabulary can be kept small and manageable. Concepts should be reduced to their various elements, and pre-combinations (e.g. compounds) are to be avoided. An important step in the ordering of the vocabulary is structuring it according to semantic categories. The categories suggested by Ranganathan (personality,

matter, energy, space, time) are, according to the author, hardly suitable for chemistry, for which reason he suggests the categories: matter, apparatus, living entity, process, property of matter. As the mere combination of concepts can produce ambiguous results, (synthetic) operators with their own grammar are necessary. A further structuring — which leads to greater clarity — is possible when the vocabulary is systematically sub-divided, as his examples demonstrate.

In the third chapter, the author, with the aid of those systems used for chemistry documentation (GREMAS and TOSAR), describes the possibilities of introducing operators ("synthetic devices") into an indexing lan-guage.

The book has an extensive index and also contains a short description of the author's academic background. Unfortunately, there is no bibliography of his works. The style is fluent. Only for the last chapter an elemen-tary knowledge of chemistry is required.

The book is a must for all those training documental-ists and librarians and is also highly recommended for all those engaged in developing documentation systems[2].

I was impressed by the positive influence that good typography (large type, clear print, wide margins) has on the readableness of a text. The reader approaches the text with much more concentration and attentive-ness than he does those written in small type. One or two printing errors are irritating but do not detract from the whole. The book can also be obtained from INDEKS-Verlag, D-6000 Frankfurt 50, Woogstraße 36a, price $ 16,—/DM 36,—.

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Footnotes:

1 In a shorter form cf. Fugmann, R.: Theoretische Grundlagen der Indexierpraxis. (Theoretical foundations of indexing practice) In: Henzler, R.G. (Ed.): Anwendungen in der Klassifikation Bd. 1. Proc. 8. Jahrestagung Ges. f. Klassif. Frankfurt/M., DE: Indeks-Verl. 1985 = Studien zur Klassi-fikation 14. p. 42—56. See also Fugmann, R.: Toward a theory of information supply and indexing. Int. Classif. 6 (1979) p. 3—15, and Fugmann, R.: The five-axiom theory of indexing and information supply. J. Amer. Soc. Inform. Sci. 36 (1985) No. 2, p. 116—129

2 The book would also be useful for those working on the „Regeln für den Schlagwortkatalog (RSWK)" (rules for the alphabetical subject catalogue) which, at the moment, are being developed in the Federal Republic of Germany. They will be used by many German libraries working in computer-networks and by the German National Bibliography, „Deut-sche Bibliographie". In its basic principles, this set of rules largely runs counter to Fugmann's precept, above all, because the compilers have decided to make do with the vocabulary alone, and without grammatico-syntactical aids. Precoordina-tion is given preference, e.g. preference of compounds. The consequences are obvious. There is no structured content analysis of texts and no structured representation, as is performed, for example, in PRECIS. Nor will the vocabulary be structured: only alphabetic lists of subject headings are planned. It is true that the recording of individual terms is well done, but general concepts, as a rule, submerge. In the natural sciences, due to the inflation in the number of terms, subject specialists will soon lose control of the vocabulary if they take the principle of the 'narrow' subject heading seriously, and the searcher will no longer be able to rely on any subject heading for a general concept.