Techniques in Research and Documentation, with Particular Reference to Biology). In 1955 he published a report entitled "Die Bedeutung der Verschlüsselung für die Anwendung der Lochkarten" (The Importance of Encoding Procedures for the Application of Punched Cards). In September 1955 he presented a paper in Brussels to the FID on this subject. As early as then the author was working with the technique of classification through definition. As long as Mr. Soergel fails to produce concrete bibliographical references showing when and where this principle was applied first, his sweeping statements and judgments are valueless.

8. In summing up, the author is forced to remark that Mr. Soergel's entire review is based on thin air. If an author announces his intention of building a table, no critic can blame him for not having built a cupboard. Much less is the critic entitled to declaring the building of tables impermissible in the first place. That, precisely, is the situation here: the author has declared repeatedly and explicitly according to what principles he devised his classification and what purposes it is to serve. The reviewer, however, centers his entire citicism around his contention that the consistent application of the principles used by the author is impermissible.– Such an approach is hardly conducive to the further development and discussion of classification systems. – Such being the facts, the author can only request the readers of this reply to purchase the inexpensive (DM 26.00) book themselves to form an independent judgment.

Martin Scheele

Reviewer's response

The examples given in the review were intended to illustrate the general point of inadequate structure, not just to show a few inadequacies here and there. An examination of some of Scheele's answers serves the same purpose. According to Scheele, *Mechanics* is represented by the combination of 0930 *Motion in general* with 3104 *Physics.* Yet there are many other phenomena that fall in the purview of *Mechanics*: 081 *Forces*, 082 *Gravity*, 091 *Effect of forces*, 092 *Weight*, 094 *Types of motion.*

Acoustics is fine as shown, *Optics* should be 0860 3104 rather than 0870 3104 as a quick look at the concepts listed under 086 and 087 will show. Scheele chooses not to give a combination for *Solid state physics.* 4952 *Rail transport* listed under 495 *Administration of transportation* clearly means *Administration of rail transport*, not the elemental concept *Rail transport.* For the record, 0398 is *Structure in space*, not the general concept *Structure*, and 4073 *Gewalt* (physical force) is not at all the same as the political science concept *Power.* Finally, if one assumes that a user requesting documents on the *Performing arts* wants to retrieve documents on *TV news and comments* or *Weather forecast*, then Scheele's hierarchy is correct. If one is of a different opinion, then one must conclude that it is very well open for discussion whether *TV* and *Film* are properly subordinate to *Performing arts.* It might just be that these concepts are not in a hierarchical relationship at all, and that one should form a combination "Performing arts on TV" if that is the subject at hand.

Anybody interested in the history of the idea of concept combination (combining elemental concepts to define compound concepts), which spans at least 700 years, is referred to

De Grolier, Eric: A study of general categories applicable to classification and coding in documentation. Paris: Unesco 1962. p. 107–122, and

Dahlberg, Ingetraut: Grundlagen universaler Wissensordnung. München: Verlag Dokumentation 1974. p. 54–60 and elsewhere.

D. Soergel

MEYER-UHLENRIED, Karl-Heinrich: **Methodische Grundlagen für die Planung von Informationssystemen.** München: Verlag Dokumentation, 1977 = DGD Schriftenreihe 7, 520 p., ISBN 3-7940-3627-1.

It is not customary to review only one chapter of a book, and it may even be unfair to the author to single out a few dozen pages from a much larger work, but readers of this journal will mostly be interested in chapter 3.4. "Prinzipien der Ordnung", in which the author seeks to analyze the theoretical underpinnings of the various systems of order on which all information storage and retrieval systems are based. The concept denoted by the German word "Ordnung" is not easily translatable into English, because "order" is a polyseme; perhaps "orderly arrangement" is the nearest equivalent to the concept dealt with by the author, but for the sake of brevity, the word "order" (in this sense) will be used here.

The chapter begins with a brief discussion of "Problems of order", resulting in a rather concoluted definition of "order" that is not necessarily better and certainly not any more concise than the definitions taken from the philosophy of science which form the author's starting point. The next section deals with "Principles of order", providing a useful theoretical analysis of the basic principles on which ordered systems must rely, namely either serialization (and its varieties), and "grouping" or classification. The latter is dichotomized into "horizontal" or equivalent grouping, and "vertical" or hierarchical grouping of entities.

The heart of the chapter is the section on "Orders and ordering systems" in which the author develops a model of four fields arranged as quadrangles around a central core of ordering principles, namely: (A) Linear order; (B) Ontological-topological order; (C) Relational or hierarchical order; and (D) Teleological-correlative order. Field A comprises alphabetical, chronological or numerical order; field B is the domain of equivalent order; field C is the one of hierarchical or generic order; and field D contains what the author calls categorial or perspectivic order, the latter being a combination of functional and relational factors applied to the orderly arrangement of entities, showing their relations not only within one hierarchy but also those to other hierarchies as perceived from a particular functional point of view.

The last section of the chapter deals with problems of ordering in the documentation process, i.e. with the functional applications of various systems. While the theoretical explication of principles and types of orders

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is helpful in disentangling some rather intricate patterns which are often mixed up in both the design and application of ordering systems (and thus in line with the author's general purpose as stated in the preface, namely to provide a theoretical basis for the planning and design of information systems), the treatment of the topic in this last section suffers somewhat from over-simplification and even some outright inaccuracies. Thus, when discussing classification schemes (which he characterizes as "static", "rigid" and "cumbersome") he says that notation *must* be allocated before such a system can be fully designed, and that this makes changes or even additions difficult or impossible. He chooses as his paradigm for all classification systems the UDC, but even for this old and admittedly imperfect system such statements do not hold true. A look into any textbook on the design of classification systems would have shown him that his ideas are not borne out by modern classification theory and practice. His treatment of thesauri (which he clearly prefers over classified retrieval aids) shows that he seems not to be aware of the classificatory structure that of necessity underlies the verbal surface structure of a thesaurus.

The chapter concludes with the assertion that the principles which are necessary for the *design* of an ordering system are not the same that govern the *operation* of such a system, although it is not made quite clear why this should necessarily be so.

The author cites 27 references for this chapter but these reveal a somewhat unusual insularity: except for a reference to the *Encyclopaedia Britannica* (which can hardly be considered as specific to the topic) they are all from German sources. Even Soergel's work on indexing languages (which treats to a large extent the same topic but goes far beyond his earlier German writings that are cited by the author) was not found worthy of citation. It is of course true that American (and to a lesser extent British) authors are guilty of the same iniquity, yet considering that most of the basic work in this field has been done by researchers in English-speaking countries, this is a major flaw, made worse by the fact that many of the ideas first propounded by British or American authors are here presented as if they were Meyer-Uhlenried's own.

The book as a whole does not make for easy reading, both because of the theoretical approach to its subject (which is legitimate) but even more because of its turgid prose (which is less excusable). Concise and elegant style seems to have gone out of fashion among contemporary German writers on documentation.

Hans H. Wellisch

SETTEL, Barbara (Ed.): **Subject description of books**; a manual of procedures for augmenting subject descriptions in library catalogs. Syracuse, N.Y.: Syracuse University, School of Information Studies. Subject Access Project. Research Study 3, 1977. No pagination. $ 5.–

The terms used for "augmenting subject descriptions" – depth indexing – are chosen entirely from the contents pages and indexes of the books being catalogued. The job of selecting key terms to indicate the subject content of the book has already been done once, and it would be a waste of effort to do it again and look at the text itself. The principle (though it is never stated) is sound enough, but to rely on it is to make a large assumption about the relationship of index to text, to assume a constant quality of indexing. The problem is briefly and partially acknowledged in a discussion of the means of determining the number of subject entries to make for each book (determining when to stop applying the selection criteria that this manual sets out for us). The point is that this "quota" is worked out by the application of a formula to the number of entries in the book's index, taking no account of the length of the text itself, and that this is not wholly satisfactory is admitted. But it is a far more fundamental problem than that, a matter of more than just the relative lengths of index and text. That this manual should conceive of the "quality" of indexing purely in terms of the number of entries per page of text is indicative of its whole mistaken approach to the problem of subject cataloguing.

It is assumed that the subject of the book is adequately analysed by the book's own index. Relying on that assumption, the manual takes the whole question of the subject of a book entirely for granted. In spite of the fact that the aim is to provide "subject descriptions", the one thing that is not considered is the subject. The idea behind it, presumably, is to find a technique of subject cataloguing that relies on purely objective criteria for the selection of its terms. Objective they certainly are, and objective in the most crudely physical sense: the significance for cataloguing purposes of a term in the table of contents or index is determined by such criteria as whether it is printed in capitals or lower case, in boldface type, or indented, and chiefly by the number of pages of text it refers to. When this manual talks of the problems posed by "stylistic variation in contents tables" it means variation in layout on the page. A different set of rules is laid down for each of three classes of index: those with page ranges, those with "f", "ff" and "et seq.", and those with neither. As it turns out, the three sets of rules are largely identical.

This form of subject cataloguing is utterly dependent not only on the terms chosen by the compiler of the book's index, but even on the format of that index. Subject cataloguing is reduced to the level of counting pages, and it is not only the book being catalogued, but the cataloguing process as well, that is seen in merely physical terms. The selection of terms is typically referred to by means of its physical manifestation, as underlining those terms in a photocopy of the index. The manual concentrates on the minutest details of applying a technique, and the principles behind that technique are lost. Granted that this is a "manual of procedures" not a treatise on principles; granted that the format in which a word appears in the index does tell us something about its importance; granted that the recognition of three classes of index is no doubt intended to reflect merely practical considerations – but it is precisely in this directing of attention to the merely formal and merely practical that the manual is at fault.

There are a lot of rules to cope with a lot of different cases: the impression given is that chaos is with difficul-

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