

Werner Bies  
Universitätsbibliothek der Freien Universität Berlin

## Thinking with the Help of Images: On the Metaphors of Knowledge Organization

Bies, W.: *Thinking with the help of images: On the metaphors of knowledge organization.*

Knowl.Org. 23(1996)No.1, p.3-8, 28 refs.

In the literature of knowledge organization, metaphors and images such as 'tree of knowledge', 'map of knowledge' or the 'world as a network' play an important role. This imagery - although not yet thoroughly documented - should be examined from the various points of view of epistemology, the typology of metaphors, discourse analysis, metaphorology and iconography. The crucial point: Not only knowledge as such, but also its organization, is an essential part of our cultural heritage.

(Author)

### 0. Introduction

In the literature of knowledge organization metaphors, images and tropes play an important role. Classifiers cherish the image of the 'tree of knowledge'. There is a type of classificatory knowledge organization whose mere designation relies on the image of the 'facet'. Recent cognitive approaches in science are based on the metaphors of 'mind mapping' and 'maps of knowledge'. The exhortation to think with the help of the 'net' metaphor and to understand our world as a 'network' belongs to the commonplaces of editorials. To mention just a few more examples of the figurative language of knowledge organization, there are semantic 'frames', the 'scenario' providing actions with a sense-giving context, the 'code' of the DNA-structure, the 'building plan' of life. In a book on the tropical rainforest we are warned: „If the rainforest is burning, the fire of so-called progress devastates whole libraries of genetic information.“ (22, p.191)

### 1. Metaphors, imagery and figurative language: Problems of definition and documentation

Knowledge organization, as an interdisciplinary science, should deal more intensively with the imagery of knowledge organization. Initial approaches to this subject should avoid sophisticated differences between metaphor, simile, figurative language, image, trope and allegory. More important than over-attentive definitions is the figurative dimension, the non-literalness common to all these figures of speech which, at the same time, may be defined as figures of thinking. In the literal sense, the rainforest is definitely *not* a library.

In many cases, it is very difficult to determine whether



Dr.phil. Werner Bies is subject librarian (English studies, linguistics, library science) at the University Library of Freie Universität Berlin and teaches library science at Humboldt University. He is co-editor of *Bibliographie zur Symbolik, Ikonographie und Mythologie* and has written numerous articles and book reviews in the fields of knowledge organization, library science and English studies.

imagery is still alive and active or is already sunken or even dead. When speaking of 'facet classification', most people are likely to use the term 'facet' with no figurative sense. In these cases, the figurative potential of the designation 'facet' is deactivated and dead; it merely serves the quasisynonymous designation of 'Colon-Classification'. The imagery of the facet is, however, undoubtedly still active in the following considerations by A. Diemer, who is enthusiastic about a potential polyhierarchical and polydimensional classification system which he compares to a „faceted diamond or even better: brilliant“: „Each of these facets would represent a scheme of ordering, so that one could call it the faceting of a classification system“ (11, p.57) In this context, however, it should be stressed that imagery is not only an aspect of verbal, but also of visual, communication. Consequently, visual documents are as welcome as verbal ones.

Unfortunately, up to now all this imagery has not yet been systematically registered and still awaits thorough documentation. Of course, the present article cannot claim to overcome this documentary deficiency. At its best, it may inspire both to document and to analyze the imagery of knowledge organization and it may emphasize some rewarding aspects of the topic.

### 2. Imagery: knowledge organization and epistemology

The history of philosophy bears ample proof of the richness and variety of figurative language: In all times, images and metaphors have served to represent and communicate philosophical, especially epistemological, principles. Examples of an epistemological grounding and intention of philosophical images and metaphors and, at the same time, of the imagery of epistemological aspiring occur in the writings of almost all philosophers: Plato's cave parable; Galileo's metaphor of the 'book of nature', written in mathematical language; Francis Bacon's image of the human mind as a clouded and uneven mirror prone to mixing up the nature of the world with the distortions due to the imperfection of the mirror; John Locke's metaphor of human understanding resembling at its birth a white paper or *tabula rasa* (cf. 19).

Because of its close affinity to epistemology, knowledge organization has always been eager to refer to the imagery of epistemology. Besides, it is impossible to define in purist manner a genuine imagery of knowledge organization, a figurative language solely belonging to

order and classification. The boundaries between the imagery of knowledge organization and both the figurative language of philosophy and numerous special branches of science such as biology, are fluid. And not only as far as these questions are concerned would knowledge organization do well to be reminiscent of its philosophical origins, affinities and proximities.

### 3. Typologies of knowledge organization imagery

Various criteria and aspects can help to setup typologies of the imagery of knowledge organization. To begin with, two basic approaches have to be distinguished:

1. We may analyze various images expressing a definite idea or process of knowledge organization (to follow the terminology of I. A. Richards, 23, p.99-: the various vehicles of a tenor). It would be fascinating to examine, for example, the figurative language used to convey the essential points and ideas of knowledge organization, such as analogy, affinity, likeness, hospitality, derivation, descent, migration, symmetry, repetition, variation, focussing, markedness, universality and even fuzziness and vagueness (cf. the fundamental study by I. Dahlberg, 9). The high degree of abstraction of these essentials, however, sets a limit to the efficiency of figurative language. And yet philosophers, scientists and authors alike have always felt the need to refer to figurative language in order to communicate ideas of knowledge organization. The idea of movement from an inferior to a superior state, from lower to higher ranks and qualities, for example, has been visualized as a 'journey', as a 'succession of steps' or as a 'tree'.

2. We may analyze the various, and often multifarious, ideas which may be communicated by a single image (i.e., the various tenors which may correspond to a single vehicle). The image of the tree may communicate such ideas of knowledge organization as different from each other as relationship, descent, evolution, or classificatory dependence. Examples of the figurative use of the tree are: the tree of relationship (*arbor consanguinitatis*, cf. 25, p.149-193), the genealogical tree of zoology (cf. 15, plate VII), the topical tree, the tree of classification and the linguists' *Strukturbaum* (in English: 'branching diagram' or 'phrase marker', cf. 6, p.746). The following considerations, which should be understood as preliminary suggestions only, favour an approach which focusses on the image and the vehicle rather than one which focusses on the idea and the tenor.

Imagery and its vehicles may be separated on the basis of manifold criteria. Only a few of them are selected here. Their order of appearance does not imply any priority.

1. According to traditional typology, metaphors fall into four categories. In the first, one living thing is substituted for another; in the second, the inanimate is substituted for the animate; thirdly, the inanimate may be substituted for the animate or, fourthly, the animate for the inanimate. The transferences from animate to inanimate (e.g., the 'tree of knowledge') or from inanimate

things to animate (e.g., the 'library of the rainforests') are especially interesting.

2. The metaphors of knowledge organization may be assigned to various lexical fields. Two lexical fields of special prolificacy are the cartographical field (e.g., the 'map of knowledge') and the architectural field (e.g., the 'house of knowledge').

3. The imagery of knowledge organization may be divided on the basis of some fundamental approaches, mostly of a dichotomic character. The rather inflexible approach shown in the metaphor 'tree of knowledge' is in contrast to the rather flexible approach in images such as 'facet' or 'networked knowledge'. Of cultural-historical significance is the often-quoted antithesis of organic imagery vs. technical imagery (e.g., 'tree' vs. 'house'). Often related to this dichotomy, though not identical with it, is the difference between rather 'soft' and rather 'hard' metaphors (e.g., 'journey' vs. 'house'). Also promotive of insight is undoubtedly the differentiation between, on the one hand, rather universal, archaic topoi and metaphors ('tree', 'journey') and, on the other hand, rather sophisticated and 'second-hand' images and figures (e.g., 'navigating search'). In recent times, the opposition between topoi tending to represent objects (e.g. 'house') and topoi tending to convey processes (again as an example: 'navigating search'), has played an important part.

### 4. The imagery of knowledge organization: materiality and the media of communication and information

Culture may be defined as a system based on material media (cf. 13, p.21): this programmatic thesis formulates one of the most productive paradigms of contemporary humanities - the paradigm of the media-based materiality of all communication and information. It is a project which promises fascinating insights into the history of knowledge organization and its imagery, too, for this imagery also relies on media and their materiality. For centuries, knowledge organization has been primarily dependent on the material quality of the oldest medium, the book.

On the one hand, epistemological imagery and the figurative language of knowledge organization are often found in the strategic places in books: paratexts such as preface, epilogue or title page. A famous example is the prolific mirror imagery in title pages of the Middle Ages and English Renaissance (14). Another example is a book by F. Vester, *Unsere Welt, ein vernetztes System* [Our world, a network system] (26), a publication which displays the metaphor of the net - the fundamental image of the study - even on the book cover.

On the other hand, the book itself, its function as a store of organized knowledge, based on its materiality and mediality, has been the figurative source of many ideas of knowledge organization (the 'book of nature', the 'book of life', the 'readability of the world'). More extensive stores of knowledge - sometimes called 'metastores' -

such as the archive and, above all, the library as the standard store of books and knowledge - have also provided knowledge organization with metaphorical meaning (c. g. 'gene library').

The debate on the computer as a new medium and its processes has produced a veritable flood of metaphors. The figurative language of the computer is dominated by the imagery of landscape, cartography and navigation: 'navigating search', 'log-book', 'netscape', 'cyberspace' etc.

### 5. The imagery of knowledge organization: discourse analysis

The discourse analysis of knowledge organization should examine its figurative language, metaphors, images and tropes in wider contexts: history of science, tradition of knowledge organization, societies and their political and ideological premisses, linguistic frames, occasions of speech, didactic intentions, information culture, technological scenarios.

Let us take a rather unpretentious example, a definition of indexing by Collison dating from 1972: „Indexing is largely a matter of setting one's house in order. Nearly everyone does it in private life in some way or other, merely so that they can find things again when they need them. When a housewife makes a separate place for everything in the kitchen she is in fact creating a living index, for not only she, but all her household, will gradually get used to the system she created and be able to discover things for themselves, even though it may involve knowing that sugar is always kept in a jar labelled SAGO. A man will get into the habit of always putting change in one pocket, keys in another, cigarette-case in a third - an elementary indexing habit which stands him in good stead when he checks up in his hurry to the station to see whether he has remembered his season-ticket. There is, in fact, no part of an orderly life which does not have some form of indexing as an essential part of its functioning, and many famous people would doubtless admit that they owe some measure of their success to the system they imposed on themselves early in their career.“ (7, p.12)

A discourse analytical interpretation of this passage emphasizes:

1. the comparison of indexing with everyday life which, from a didactic point of view, seems at first sight to be quite useful
2. the questionable metaphors of home and housekeeping
3. the strenuousness and solicitude, characteristic of the British theory of indexing
4. the ideology of ordering and an „orderly life“ in connection with the promise of a success story.

From a rhetorical point of view, the tension between the duty to *perspicuitas* (perspicuity) and the desire for *ornatus* (ornamentation) deserves the discourse analyst's special attention. Those who laugh at the paltry intellec-

tual dignity of the passage in question, are reminded of the cultural historian's experience that mediocrity often better serves knowledge than excellence.

Metaphors of knowledge organization are readily made use of in the popularization of texts, in popular science, in science reports in the media (often written in feuilleton manner), even in advertising. The network-expert, surfing on the ocean of internet - a recent adaptation of the traditional nautical metaphor - is just one example of this popular imagery.

Discourse analytical research on the imagery of knowledge organization should be aware of both the advantages and the risks of figurative language. On the one hand, metaphors serve the illustration of the topics and problems of knowledge organization. On the other hand, the inflationary use of imagery (cf., e.g., the metaphor of the net) runs the risk of evening out differences and blurring necessary distinctions. All those interested in the didactic dimension are also asked to weigh the chances of the imagery of knowledge organization against the risks. And the didactic dimension of knowledge organization should be the everyday interest of almost all teachers and instructors, including scientists introducing their pupils to the propaedeutics of their discipline, museologists teaching museum education, educationalists engaged in the theory of instruction, and librarians engaged in user education.

### 6. Example: Architectural imagery / Metaphors of construction and building

The example of architectural imagery, of the metaphors of construction and building, is chosen to display the enormous variety of different ideas of, and attitudes to, knowledge organization which can be conveyed by a single lexical field.

1. The architectural images of title pages - buildings, foundations, columns - do not only serve mere ornamentation, conveying the sublime or alluding to antiquity. Architectural images rely on the *topos* 'house of knowledge' / 'knowledge as a building' and communicate criteria such as tectonics, measure and proportion - criteria of paramount importance, not only in architecture, but also in knowledge organization.

2. *Ars memoriae* or the art of memory (28) advised its pupil to imagine a structured place, preferably a house with several floors or a colonnade. Then the pupil had to place images (*imagines*) of the things to be remembered at several *loci* of the place in question. He was then asked to walk mentally through the imagined building, which would thus become a thesaurus or 'treasure' (another metaphor of knowledge organization). It is easier to recall the images of things than their words: this is the fundamental device of *ars memoriae*.

3. In 1820, the German librarian Friedrich Adolf Ebert (1791-1834) made didactic use of architectural imagery to stress the categorical difference between the librarian's pragmatism, closeness to life and practicability of knowl-

edge organization, and the philosopher's ideality, strictness and abstractness of systematization: The philosopher's house has open joints; its scaffolding is still visible. The librarian's house, however, is a homogeneous whole (12, p.27).

4. The idea of faceted classification, founded by the Indian librarian S. R. Ranganathan (1892-1972), has been inspired by a Meccano set: „In the Colon Classification, ready-made Class Numbers are not assigned to subjects. The schedule in the Colon Classification may be said to consist of certain standard unit-schedules. These correspond to the standard pieces in a meccano apparatus. By combining these standard pieces in different ways, many different objects can be constructed. Even a child knows this. So also, by combining the numbers in the different unit-schedules in assigned permutations and combinations, the Class Numbers for all possible subjects can be constructed. In this scheme, the function of the Colon (:) and other connecting symbols is like that of the bolts and nuts in a meccano set. It is therefore an Analytico-Synthetic Classification.“ (21, p. 12-13) I do not intend to discuss to what extent the image of the Meccano set represents a model of the analytico-synthetic method of faceted classification. It should be stressed, however, in this context, that knowledge organization has to deal with both the modelling functions of images and the imagery of models. The tension of models between a graphic and an abstract dimension is a fascinating topic (16).

We have discussed various images derived from the lexical field of architecture. These images convey very different ideas and differ from each other especially as far as their *habitus* is concerned. Compare, for example, Ebert's pragmatic, even somewhat resigned *habitus*, to Ranganathan's constructional and optimistic *habitus* or even *aura*. Let me emphasize that the concepts *habitus* and *aura* should be accepted as essential concepts of knowledge organization and that imagery is a major contribution to these concepts.

## 7. The imagery of knowledge organization and metaphorology

An even more important function may be attributed to the images of knowledge organization within the framework of Hans Blumenberg's metaphorology (*Metaphorologie*, 1, 2). The central theses and the fundamental concepts of Blumenberg's philosophy are as follows:

1. Imagery is not necessarily deficient, it is as efficient as abstract conceptual knowledge. Metaphors accomplish authentic epistemological achievements of their own.

2. Even in the rationalistic context of modern science, pure conceptuality does not replace imagery completely. Even now, imagery is indispensable to thinking.

3. Notwithstanding the superficial dominance of abstraction and conceptuality, metaphors still structure, organize and control world-views and world-models.

There is no thinking without a horizon of metaphors. *Mythos* is never wholly outgrown by *logos*: a position which should not be misunderstood as an unreflecting support of irrationalism, however.

4. Imagery exercises a greater influence on the history of ideas than abstraction and conceptuality. Central metaphors which deserve the cultural historian's special attention are, for example, the metaphor of existence 'life as a voyage', or the 'world as a book to be read'.

Knowledge organization should not neglect the significance of imagery. It should at least deal with more fundamental images, such as the 'world as a book'.

## 8. Imagery and paradigm

T. S. Kuhn (18) defines paradigms as agreements by scientific communities concerning their shared generalizations, heuristic models, problem-solvings and scientific values, i.e. the framework of their research. Paradigms are shaped by the pilot metaphors of knowledge organization and their aesthetic attraction. Cybernetics, whose mere designation is of a metaphorical nature (*kybernetes*, Greek: 'the steersman') relies on the imagery of navigation. In cognitive science, the concept of 'mind mapping', of the 'maps of knowledge', plays a great role. Cognitive linguistics likes to refer to the metaphor of script. The modelling on automaton theory, characteristic of contemporary psychology and linguistics, produces many images borrowed from automation and electronic data processing (the human brain as 'computer'). F. Vester's cybernetic ecology (26) is essentially defined by the imagery of 'nets' and 'networks'.

## 9. The imagery of knowledge organization and iconography

The imagery of knowledge organization, its history of images and metaphors may also be defined as an iconographical problem. What does 'iconography' signify? What is its purpose? As an art-historical discipline, iconographical research deals with the 'contents' of the visual arts and with the interpretation of its subjects. Often iconographical research requires sophisticated decoding and painstaking study of literary sources such as the Bible or the texts of ancient authors. Just one example: A blindfold woman with scales is identified as the allegorical figure of *iustitia*.

Knowledge organization has iconographical traditions of its own, too. The essential role of the tree in the history of monohierarchical classification is only one example: The image of the tree is dominant enough to serve as a metaphorical abbreviation of this type of classification. Vickery, e. g., disapproves of „traditional 'tree-of-knowledge' schemes“, considering them to be inferior to faceted classification and its more flexible „instruments of much greater subtlety and efficiency“ (27, p.5).

## 10. The imagery of knowledge organization: the historical memory

The analysis of the imagery and the figurative language of knowledge organization comes to the following conclusion: Not only knowledge as such, but also its organization, representation, condensation and communication are an essential part of the cultural memory. Not only ideas and subjects, but also their ordering and organization belong to our cultural heritage. The manifold tensions inherent in cultural tradition - between textual and visual communication, between the rationality of the discourse and the magic of the image, between cognition and logocentrism on the one hand and emotion and affect on the other - are immanent in the history of the imagery of knowledge-organization, too.

As soon as the historical dimension of knowledge organization and its imagery are emphasized, a mere contemporary interpretation of the concepts 'knowledge representation' and 'information design' can be avoided. Although 'information design' is a rather recent term, and although the term 'knowledge representation' is often used solely to cater for the processing of knowledge in electronic data processing, the interests covered by both 'information design' and 'knowledge representation' have a long, rich tradition and a prodigious history. The cultural resources of this history should be documented, analyzed and used.

## 11. The imagery of knowledge organization: an interdisciplinary project

The imagery of knowledge organization is a fascinating topic, worthy of detailed trans- and interdisciplinary research. It is a subject which challenges the assistance of manifold disciplines: philosophy (epistemology, logic), anthropology, semiotics, cognitive science, linguistics, psychology, history of science, cultural history, history of mentalities, history of discourse, history of perception, visual communication and aesthetics (e. g., aesthetics of space), literary studies, art history, history of the media and the book.

It is recommended that the historiographer of the imagery of knowledge organization acquaint himself with the essential metaphors and imagery of other disciplines and domains of knowledge and make use of their methods and insights. He should consult the fascinating studies of philosophical metaphors (Blumenberg, 3, 4, 5), the history of the *topos* in European literature (Curtius, 8), the so-called social metaphors (Peil, 20; Schramm, 24), the imagery of law (Kocher, 17) or the metaphors of history (Demandt, 10).

### References

- (1) Blumenberg, H.: Paradigmen zu einer Metaphorologie [Paradigms towards a Metaphorology]. In: *Archiv für Begriffsgeschichte* 6 (1960), p. 7-142.
- (2) Blumenberg, H.: Beobachtungen an Metaphern [Considerations of the metaphor]. In: *Archiv für Begriffsgeschichte* 15 (1971), p. 161-214.

- (3) Blumenberg, H.: Schiffbruch mit Zuschauer: Paradigma einer Daseinsmetapher [Shipwreck with Spectator: Paradigm of a Metaphor for Human Existence]. Frankfurt a. M.: Suhrkamp, 1979.
- (4) Blumenberg, H.: Die Lesbarkeit der Welt [The readability of the world]. Frankfurt a. M.: Suhrkamp, 1981.
- (5) Blumenberg, H.: Höhlenausgänge [Exits from Caves]. Frankfurt a. M.: Suhrkamp, 1989.
- (6) Bußmann, H.: Lexikon der Sprachwissenschaft [Dictionary of linguistics]. 2nd, completely rev., new ed. Stuttgart: Kröner, 1990. (Kröner's Taschenausgabe, 452).
- (7) Collison, R. L.: Indexes and indexing: Guide to the indexing of books, and collections of books, periodicals, music, recordings, films, and other material, with a reference section and suggestions for further reading. 4th rev. ed. London: Benn, New York: de Graff, 1972.
- (8) Curtius, E. R.: Europäische Literatur und lateinisches Mittelalter. Bern: Francke, 1948. [English ed.: *European Literature and the Latin Middle Ages*, London, 1953].
- (9) Dahlberg, I.: Grundlagen universaler Wissensordnung: Probleme und Möglichkeiten eines universalen Klassifikationssystems des Wissens. Pullach bei München: Verlag Dokumentation, 1974. (DGD-Schriftenreihe, 3).
- (10) Demandt, A.: Metaphern für Geschichte: Sprachbilder und Gleichnisse im historisch-politischen Denken [Metaphors of history: Images and parables in historical-political thought]. München: Beck, 1978.
- (11) Diemer, A.: Klassifikation, Thesaurus und was dann? Das Problem der „dritten Generation“ in Dokumentation und Information [Classification, thesaurus and what next? The problem of the „third generation“ in documentation and information]. In: *Nachr. Dok.* 23 (1972), p. 52-57.
- (12) Ebert, F. A.: Die Bildung des Bibliothekars [The education of the librarian]. 2nd, rev. ed. Leipzig: Steinacker und Wagner, 1820. Complete facsimile ed. With a postscript by Horst Kunze. Leipzig: Harrassowitz, 1958.
- (13) Giesecke, M.: Der Buchdruck in der frühen Neuzeit: Eine historische Fallstudie über die Durchsetzung neuer Informations- und Kommunikationstechnologien [Bookprinting in early modern times: A case study of the implementation of new technologies of information and communication]. Frankfurt a. M.: Suhrkamp, 1991.
- (14) Grabes, H.: Speculum, mirror und looking-glass: Kontinuität und Originalität der Spiegelmetapher in den Buchtiteln des Mittelalters und der englischen Literatur des 13. - 17. Jahrhunderts. Tübingen: Niemeyer, 1973. (Anglia, Buchreihe, 16). [English ed.: *The mutable glass: mirror-imagery in titles and texts of the Middle Ages and English Renaissance*. Cambridge: Cambridge University Press, 1982].
- (15) Haeckel, E.: Allgemeine Entwicklungsgeschichte der Organismen: Kritische Grundzüge der mechanischen Wissenschaft von den entstehenden Formen der Organismen. Begründet durch die Descendenz-Theorie. Mit acht genealogischen Tafeln [General history of the evolution of organisms: Critical characteristics of the mechanical science of the emerging forms of organisms. Based on the theory of descent. With eight genealogical plates]. (Generelle Morphologie der Organismen, Bd. 2). [General morphology of organisms, vol. 2]. Berlin: Reimer, 1866. Reprint: Berlin, New York: de Gruyter, 1988.
- (16) Kaulbach, F.: „Modell. I“ [Model. I]. In: *Historisches Wörterbuch der Philosophie*, Bd. 6: Mo - O [Historical encyclopedia of philosophy, vol. 6: Mo - O]. Eds. Ritter, J., Gründer, K. Basel, Stuttgart: Schwabe & Co., 1984. Sp. 45-47.
- (17) Kocher, G.: Zeichen und Symbole des Rechts: eine historische Ikonographie. [The symbols of law: a historical iconography]. München: Beck, 1992.

- (18) Kuhn, T. S.: The structure of scientific revolutions. 2nd ed., enlarged. Chicago, London: University of Chicago Press, 1970. (International Encyclopedia of Unified Science, 2,2).
- (19) Kunzmann, P., Burkhard, F.-P., Wiedmann, F.: dtv-Atlas zur Philosophie: Tafeln und Texte [An illustrated chronology of the history of philosophy]. München: Deutscher Taschenbuch-Verlag, 1991. (dtv, 3229).
- (20) Peil, D.: Untersuchungen zur Staats- und Herrschaftsmetaphorik in literarischen Zeugnissen von der Antike bis zur Gegenwart [On the imagery of state and power in literary sources from antiquity to the present]. München: Fink, 1983. (Münstersche Mittelalter-Schriften, 50).
- (21) Ranganathan, S. R.: Colon Classification. Basic Classification. 6th ed., completely rev. London: Asia Publishing House, 1960.
- (22) Reichholf, J. H.: Der tropische Regenwald: die Ökobiologie des artenreichsten Naturraums der Erde [The tropical rainforest]. München: Deutscher Taschenbuch-Verlag, 1990. (dtv, 11262; dtv-Sachbuch).
- (23) Richards, I. A.: The philosophy of rhetoric. New York: Oxford University Press, 1965. First ed.: New York, London: Oxford University Press, 1936.
- (24) Schramm, P. E.: Herrschaftszeichen und Staatssymbolik: Beiträge zu ihrer Geschichte vom dritten bis zum sechzehnten Jahrhundert [Symbols of power and the symbolism of state. Contributions to their history from the third to the sixteenth century]. 4 vols. - Vols. 1-3: Stuttgart: Hiersemann, 1954-56. (Monumenta Germaniae Historica, Bd.13/1-3). - Vol. 4: München: Monumenta Germaniae Historica, 1978. (Monumenta Germaniae Historica, Bd. 13, 1/3 Nachträge).
- (25) Stintzing, R.: Geschichte der populären Literatur des römisch-kanonischen Rechts in Deutschland am Ende des fünfzehnten und im Anfang des sechszehnten [sic] Jahrhunderts [History of the popular literature of Roman-Canon law in Germany at the end of the fifteenth and in the beginning of the sixteenth century]. Leipzig: Hirzel, 1867. Reprint: Aalen: Scientia, 1959.
- (26) Vester, F.: Unsere Welt, ein vernetztes System [Our world, a network system]. Rev. & enlarged new ed. München: Deutscher Taschenbuch-Verlag, 1983. (dtv 10118; dtv-Sachbuch).
- (27) Vickery, B. C.: Faceted Classification: a guide to construction and use of special schemes. London: Aslib, 1960.
- (28) Yates, F. A.: The art of memory. Chicago: University of Chicago Press, 1966.

Dr. Werner Bies, Universitätsbibliothek der Freien Universität Berlin, Garystr.39, D-14195 Berlin, Germany.