



KNOWLEDGE ORGANIZATION

INTERNATIONAL CLASSIFICATION

formerly

INTERNATIONAL JOURNAL
Devoted to Concept Theory,
Classification, Indexing,
and Knowledge Representation

**On Some Contributions of the
Cognitive Sciences and Epistemology
to a Theory of Classification**

**Subject Authority Control in a Union
Catalogue: Perspectives for a National
Cooperative Project in Portugal**

**The SUM of Science: The Taxonomy
and Methodology of Sociophysics**

INDEKS Verlag, Frankfurt
ISSN 0943 - 7444 Knowl.Org.
Vol. 20 (1993) No. 3

Contents

Editorial

Knowledge Organization on Its Way -
between Madras and Copenhagen 125

Articles

F.J.Garcia Marco; M.A.Estebar Navarro: On some contributions
of the cognitive sciences and epistemology to a theory of
classification 126
M.I.Lopes: Subject authority control in a union catalogue:
Perspectives for a national co-operative project in Portugal 133
P.Armpopoulos: A SUM of science: The taxonomy and
methodology of sociophysics 139
S.V.Grinev: Terminological research in the former USSR 150

Reports and Communications

Chinese Society of Indexers founded in Shanghai (160) - Universal
Knowledge Tools and their Application (160) - New English Edition of
UDC (to appear in late 1993) (161) - DEWEY News (161) - IFLA Section
on Classification and Indexing (161) - Ranganathan Centre for Information
Studies (RCIS) (162) - Expert Meeting "Environmental Data Catalogue"
(162) - German Language Terminology Initiative (162) - Towards
a Global Expert System in Law. Selected Examples from Health
and Environmental Law (162) - First International Conference on Applied
Synergetics and Synergetic Engineering (ICASSE 94) (162)

ISKO News 14

Knowledge Organization and Quality Management, Copenhagen (163)
- 3rd Conference of German ISKO Chapter (163) - Thesauri as Terminological
Lexicons. A concept, a definition, and software requirements
(163) - First Meeting on Knowledge Organization in Information Systems,
Madrid, Nov.'93 (164) - Ernst Schröder Zentrum für Begriffliche
Wissensverarbeitung e.V., Darmstadt (164) - Personal Information (164)
- In Memoriam (164).

Book Reviews

Alluri, R., Kemp, D.A., Boll, J.J.: Subject analysis
in online catalogs. (O.Oberhauser) 165
NISKO'91. International Conference on Knowledge Organization,
Terminology and Information Access Management
(D.Benediktsson) 166
Herines, H.J., Havekost, H.(Eds.): The use of classification
systems in OPACs: On the instruments available for ordering
and retrieval. (In German) (W.Gödert) 168
Satija, M.P., Comaromi, J.P.: Beyond classification:
Book Numbers (W.Bies) 169
Bernhard, R.: Numbering systems: Basic concepts and
introduction. (In German) (B.Düsterbeck) 170
Cunningham, A.M., Wicks, W.: Guide to careers in
abstracting and indexing (R.Fugmann) 171
Rada, R.: From Text to Expertext. (R.Kuhlen) (Transl. into English) 172

Knowledge Organization Literature 20(1993)No.2 173

KNOWLEDGE ORGANIZATION

Devoted to Concept Theory, Classification, Indexing, and
Knowledge Representation

The journal is the organ of the INTERNATIONAL SOCIETY
FOR KNOWLEDGE ORGANIZATION (General Secretariat:
Woogstr. 36a, D-6000 Frankfurt 50)

Editors

Dr.Ingetraut DAHLBERG (Editor-in-Chief), Woogstr.36a, D-6000 Frankfurt 50

Dr.Robert FUGMANN, Alte Poststr.13, D-6270 Idstein

Prof.Jean M.PERREAUULT, The Library, Univ. of Alabama at
Huntsville, P.O.Box 2600, Huntsville, AL 35807, USA

Prof.Daniel Benediktsson (Book Review Editor), University
of Iceland, Libr. & Inform. Science Studies, Oddi 101, Reykjavík,
Iceland

Consulting Editors

Prof.Kenneth G.B.BAKEWELL, Liverpool Business School,
Liverpool John Moores University, 98 Mount Pleasant, Liverpool
L3 5UZ, U.K.

Prof.Pauline A.COCHRANE, GSLIS, University of Illinois,
410 David Kinley Hall, 1407 West Gregory Drive, Urbana, IL
61801-3680, USA

Mme.Nathalie DUSOULIER, INIST, 2, Allée du Parc de
Brabois, F-54514 Vandoeuvre-lès-Nancy, France

Mr.Douglas FOSKETT, 1, Dale Side, Gerrards Cross, Bucks.
SL9 7JF, U.K.

Mr.Jens B.FRIIS-HANSEN, Høesterkøbvej 7, DK-2970
Høersholm, Denmark

Mr.Alan GILCHRIST, 38 Ship Street, Brighton BN1 1AB,
U.K.

Prof.Wilfried GÖDERT, FIIBD, Claudiostr.1, D-5000 Köln

Dr.M.A.GOPINATH, DRTC, Indian Statistical Inst., 8th Mile,
Mysore Road, R.V. College P.O., Bangalore 560059, India

Prof.Eric de GROLIER, ISSC, 1, rue Miollis, F-75015 Paris,
France

Prof.Krishan KUMAR, Dept.of Libr.& Inform.Sci., Univ.of
Delhi, Delhi-110 007, India

Prof.Yukio NAKAMURA, 14-8, Nisikata-1, Bunkyo-ku, Tokyo
113, Japan

Mr.Peter PAULSON, Forest Press OCLC, 85 Watervliet Ave.,
Albany, NY, 12206, USA

Prof.Dr.Roy RADA, Dept. of Computer Science, University
of Liverpool, Liverpool L69 3BX, U.K.

Drs.Gerhard J.A.RIESTHUIS, Universiteitshuis, Singel
425, NL-1012 WP Amsterdam, Netherlands

Mr.Loli ROLLING, CEC, Dir.XIII, Jean-Monnet Centre, Kirchberg,
LU-Luxembourg

Dr.Winfried SCIMITZ-ESSER, Oderfelderstr.13, D-2000
Hamburg 13

Prof.Dr.Eugeniusz SCIBOR, IINTE, Broniewskiego 83-157,
PL-01-876 Warszawa, Poland

Dr.Otto SECHSER, In der Ey 37, CH-8047 Zürich

Prof.Dr.Dagobert SOERGEL, College of Libr.& Inform.Serv.,
University of Maryland, College Park, MD, 20742, USA

Dr.Edouard SUKIASYAN, Russian State Library,
Pr.Kalinina 3, Moskva 10100, Russia

Prof.Nancy WILLIAMSON, Fac.of Libr.& Inform.Sci., 140
St.George Str., Toronto M5S 1A1, Canada

Editors: Dr.I.Dahlberg, Frankfurt; Dr.R.Fugmann, Idstein, Prof.J.M.Perreault, Huntsville, AL, USA.

Editorial Office: c/o Dr.I.Dahlberg, Woogstr. 36a, D-60431 Frankfurt. Tel.069-52 36 90, FAX: 069-52 05 66

Issue frequency: 4x/ann. *Annual subscription rates:* Institutions per volume DM 97.-, Individuals per volume 20% less, if directly ordered from INDEKS Verlag. Single issues: DM 28.- Back issues available, ask for special offer. Subscription included in membership fee for members of the International Society for Knowledge Organization (ISKO). MwSt (domestic only) and postage are not included; for Air Mail delivery an additional DM 4.- per issue is required.

Advertising rates: Advertising rate card No.3. Advertising fact sheet with details of mechanical requirements and closing date available upon request.

Publisher: INDEKS Verlag, Woogstr.36a, D-60431 Frankfurt, Tel.069-52 36 90; FAX 069-52 05 66.

Bank Account Nos: INDEKS Verlag, Postgiro-Konto Frankfurt No.151208-608 (BLZ500 100 60). Frankfurter Sparkasse No.852082(BLZ 500 502 01)

All Rights reserved. Printed in the Federal Republic of Germany 1993 by Druckerei H.Guntrum II KG. PF 180, D-6407 Schlitz/Hessen.

Contents page

Vol.20(1993)No.3

Garcia Marco, F.J., Esteban Navarro, M.A.: On some contributions of the cognitive sciences and epistemology to a theory of classification.

Knowl.Org. 20(1993)No.3, p.126-132, 22 refs.

Intended is first of all a preliminary review of the implications that the new approaches to the theory of classification, mainly from Cognitive Psychology and Epistemology may have for information work and research. As a secondary topic the scientific relations existing among Information Science, Epistemology, and the Cognitive Sciences are discussed. Classification is seen as a central activity in all daily and scientific activities, and, of course, of knowledge organization in information services. There is a mutual implication between classification and conceptualization, as the former moves in a natural way to the latter and the best result elaborated for classification is the concept. Research in concept theory is a need for a Theory of Classification. In this direction it is of outstanding importance to integrate the achievements of 'natural concept formation theory' (NCFT) as an alternative approach to conceptualization different from the traditional one of logicians and problem solving researchers. In conclusion both approaches are seen as being complementary: the NCFT approach being closer to the user and the logical one being more suitable for experts, including 'expert systems'.

(Authors)

Arnopoulos, P.: A SUM of science: The taxonomy and methodology of sociophysics

Knowl.Org. 20(1993)No.3, p.139-149, 80 refs.

Attempt to order the main parameters of scientific theory into a coherent taxonomy. To that end, a System Unification Model (SUM) is constructed which serves as a formal frame classifying the salient structures and functions of empirical existence. The terse presentation should give a synopsis of the scope and method of knowledge organization applicable in a global scale.

The methodology used is based on a Triadic Interface Paradigm which combines dialectic and syllogic algorithms to arrive at synthetic conclusions of general application. This holistic perspective situates the static and dynamic contents of matter, energy and information systems in their space-time context. Finally, these dimensions are manipulated by formal operational codes to produce systemic and systematic knowledge.

The Model has been used to demonstrate a new Theory of Sociophysics which integrates the basic principles of social and natural sciences into an all-inclusive conceptual framework. Sociophysics assumes the fundamental isomorphism of nature and culture, thereby projecting heuristic metaphors between them. As a result, it contributes in enhancing, understanding and appreciating the global picture of human reality. (Author)

Lopes, M.I.: Subject authority control in a union catalogue: perspectives for a national co-operative project in Portugal

Knowl.Org. 20(1993)No.3, p.133-138, 7 refs.

In 1989, the existence of an online union catalogue, the National Bibliographic Database - PORBASE, raised the urgent need for mechanisms of co-operation in the field of subject authority control. A national co-operative project called CLIP (Compatibilizacao de Linguagens de Indexacao em Portugues) was launched. With CLIP special libraries will assume responsibility for the final content of the authority file with respect to terminology for subject access in different subject areas. Reference is made to the general situation in Portuguese libraries with respect to the availability and application of subject indexing tools, and also to the work being carried out towards standardization and harmonization of procedures in such matters. (Author)

Grinev, S.V.: Terminological research in the former USSR.

Knowl.Org. 20(1993)No.3, p.150-159, 10 refs.

Outlines in short the history of terminology in the former USSR from the thirties to the nineties and draws a picture of terminological research activities using statistics of terminology dissertations in chronological order (by five and ten year cumulations) with regard to their correspondence to scientific and technical disciplines/subject areas, languages and fields of terminology science itself with an analysis of the latter's findings. Concludingly seven proposals for the development of a theory of terminology are made stressing the need for the establishment of regional research centers and co-ordination of activities.

(K.O.)

This contents page may be reproduced without charge.

KNOWLEDGE ORGANIZATION



Scope

The more scientific data are generated in the impetuous present times, the more ordering energy needs to be expended to control these data in a retrievable fashion. With the abundance of knowledge now available the questions of new solutions to the ordering problem and thus of improved classification systems, methods and procedures have acquired unforeseen significance. For many years now they have been in the focus of interest of information scientists the world over. Until recently, the special literature relevant to classification was published in piecemeal fashion, scattered over the numerous technical journals serving the experts of the various fields, such as

philosophy and science of science
science policy and science organization
mathematics, statistics, and computer science
library and information science
archivistics and museology
journalism and communication science
industrial products and commodity science
terminology, lexicography and linguistics

Beginning 1974, KNOWLEDGE ORGANIZATION (formerly INTERNATIONAL CLASSIFICATION) has been serving as a common platform for the discussion of both theoretical background questions and practical application problems in many areas of concern. In each issue experts from many countries comment on questions of an adequate structuring and construction of ordering systems and on the problems of their use in opening the information contents of new literature, of data collections and survey, of tabular works and of other objects of scientific interest. Their contributions have been concerned with

- (1) clarifying the theoretical foundations (general ordering theory, science theoretical bases of classification, data analysis and reduction)
- (2) describing practical operations connected with numerical taxonomy/ classification, as well as applications of classification systems and thesauri, manual and machine indexing
- (3) tracing the history of classification knowledge and methodology
- (4) discussing questions of education and training in classification
- (5) concerning themselves with the problems of terminology in general and with respect to special fields.

Aims

Thus, KNOWLEDGE ORGANIZATION is meant to be a programme for the improvement of classification methods and processes, a forum for discussion for all those interested in the organization of knowledge on a universal or a subject-field scale, using concept analytical and/or concept-synthetic approaches as well as numerical procedures and comprising also the intellectual and automatic compilation and use of classification systems and thesauri in all fields of knowledge, with special attention being given to the problems of terminology.

KNOWLEDGE ORGANIZATION publishes original articles, reports on conferences and similar communications, the Newsletters of the International Society for Knowledge Organization (ISKO News) and the Committee on Classification Research of the International Federation for Information and Documentation (FID/CR News) as well as book reviews, letters to the editor, and an extensive annotated bibliography of recent classification and indexing literature, covering now some 500 items in each issue.

KNOWLEDGE ORGANIZATION should therefore be available at every university and research library of every country, at every information center, at colleges and schools of library and information science, in the hands of everybody interested in the fields mentioned above and thus also at every office for updating information on any topic related to the problems of order in our information-flooded times.

KNOWLEDGE ORGANIZATION was founded in 1973 by an international group of scholars with a consulting board of editors representing the world's regions, the special classification fields, and the subject areas involved. From 1974-1980 IC was published by K.G.Saur Verlag, München. Back issues of 1978-1990 are available from INDEKS Verlag, too. (The 14 volumes of 1978-1991 are offered now at the highly reduced price of DM 400.-).

As of 1989, KNOWLEDGE ORGANIZATION has become the official organ of the INTERNATIONAL SOCIETY FOR KNOWLEDGE ORGANIZATION (ISKO) and is included for every ISKO-member, personal or institutional in the membership fee (DM 60.-/DM120.-).

Rates: From 1990 on for 4 issues/ann. (including indexes) DM 97.- + postage (DM 6.-). For air mail delivery add DM 4.- per issue. Membership rates see above. - INDEKS Verlag, Woogstr.36a, D-60431 Frankfurt.

Instructions for Authors

Manuscripts may be submitted in either English, German or French to the editor-in-chief in two sets (the original and one copy) typed in double space, comprising between 1500 to 3000 words. They should be accompanied by an English indicative abstract of 100-200 words. The contributions are refereed.

Criteria for acceptance will be appropriateness to the field of the journal (see Scope and Aims) taking into account the merit of the content and its presentation. Papers are accepted with the understanding that they have not been published, submitted or accepted for publication elsewhere and that, if the work received official sponsorship, it has been duly released for publication. Authors will usually be notified within 6 to 10 weeks. Unless specifically requested, manuscripts or illustrations will not be returned.

The text of the contributions should be structured by subheadings; it should contain (a) an introduction, stating the purpose, (b) a description of materials and methods in sufficient detail, (c) information on results or systems developed, and (d) a conclusion on and/or summarization.

References should be listed at the end of the paper with the numbers in brackets referring to such numbers in brackets within the text part.

Additional notes should be indicated in the text by lifted single numbers behind a word and equally collected with their texts at the end of the paper under the heading *Notes*.

Journal References should contain the names and initials of all authors, full titles of the publication, abbreviation of the journal

according to the ISO Standard 4, volume number, year of publication in brackets, issue number and first and last page numbers. *Monograph References* should give the name(s) of the author(s), full title, edition, place of publication, publisher, year and the number of pages.

Examples: Brandhorst, J.P.J.: Quantifiability in iconography. *Knowl.Org.* 20(1993)No.1, p.12-19, 11 refs.

Hunter, E.J.: Classification made simple. Aldershot, GB: Gower 1988. 115p.

Illustrations should be restricted to the necessary minimum.

Graphs and diagrams should be supplied as black and white drawings suitable to reproduction. *Half-tone illustrations* should be sharp, well-contrasted glossy prints. Illustrations should be numbered lightly with a soft pencil on the back. Numbered legends should be attached on a separate sheet.

Tables should be typed double-spaced on a separate sheet, contain a number and a title at the top and be cited in the text. Each column should have a heading.

Authors shall receive 25 *reprints* of their papers free of charge. Additional reprints may be ordered.

Corrections in gally proof exceeding 10% of the typesetting costs will be charged to the author.

Contributions on microflexible discs are welcome if delivered in DOS compatible standard software such as Word (DOS or Windows), WordStar, WordPerfect, Euroscript, Multimate, In*avision, DCA/RFT-files or plain ASCII code - our standard is Word/DOS (Word/Windows) and PageMaker 3.1/4.0/5.0