REPORTS AND COMMUNICATIONS

Concerning 'Hierarchy' in Classification

A. Neelameghan's paper for the 1975 Seminar on Thesaurus in Information Systems "Non-Hierarchical Associative Relationships : Their Types and the Computer Generation of RT Links" seems to me too enthousiastically, and unhelpfully, to restrict the idea of hierarchy in two ways:

a), that alone is taken as hierarchical which manifests the pure (substantive) relation of Genus and Species, and
b), that alone is taken as hierarchical which manifests the pure (formal) relation of Subsuming and Subsumed (concepts which are more commonly verbalized by classification theorists and documentalists as Superordinate and Subordinate). The same can be expressed in a negative way:
a), that is not hierarchical which manifests such (substantive) relations as Whole and Part, Species and Individuum, Entity and Characteristic, etc., and
b), that is not hierarchical which manifests the (formal) relation of Coordination.

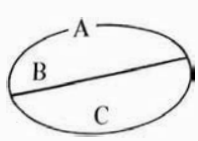
In the course of the Seminar, question was raised as to which (by analogy to genealogical diagrams) was the 'Father'-concept and which the 'Son' in the diagramming of classificatory trees.

Since, first, it seems to me that the major *operational* justification for the use of hierarchy (however defined or instantiated) in classification for documentation is that it promotes economy (by allowing that a document on a subsuming concept need not be surrogated under each of the subsumed concepts), we can provisionally define hierarchy by *extension* with the aid of the well known classing directive:

if all B are A, and some A are B, then A subsumed (is superordinate to) B;

if all C are likewise A, and some A are C, and if no B are C then A subsumed (is superordinate to) C, and B and C are coordinate to each other, and B and C are both subordinate to A –

or



And since, second, generalization is commonly and rightly taken as being performed by an act of abstracting from (prescinding from, negating) some of the characteristics of a concept/object, the *conceptual* justification for the use of hierarchy (however defined or instantiated) in classification for documentation is that the subsumed concept is in several senses (depending on the particular sort of generalization aimed at) subjected to negativity to generate from it its subsuming concept(s), and we can provisionally classify several hierarchical relations by *intension*, thus:

1) in terms of *similar* concepts/objects:
  i) Species (concepts p ∤ q)
  Genus (concept p alone; q is taken as the specific difference; its lack is what generalizes)
  ii) Part (object p, but not q or r)
  Whole (object p ∤ q ∤ r; q and r are the non-p parts that are by double negation included in the definition of the whole)
2) in terms of *dissimilar* concepts/objects;
  i) Individuum (concept p ∤ matter s)
  Species (concept p alone, not instantiated by matter)
  ii) Characteristic (⌊'accidental'⌋ concept p without ⌊'substantial'⌋ concept q)

Entity ⌊object or concept⌋ (concept q characterized by concept(s) p, r, . . . ; p, r, . . . are 'accidental' concepts ignored in pure consideration of the 'substantial' concept q).

It can be seen that in this grouping only *1. i.* manifests a relation between subsuming and subsumed concepts/objects that can be called *analytic* and thus always true; *1. ii, 2. i,* and *2. ii* are on the contrary all *synthetic* relations in that the truth or falsity of the subsumption does not affect the truth of the subsuming/subsumed relation. Thus it is certainly true that a more permanent classification can be erected on analytic relations alone as basis, since e. g. a man is still a man though lacking eyes (*1. ii*), since e. g. there can always be another quattrocento sculptor to enumerate (*2. i*), and since whether or not e. g. cocaine is addictive can be disputed (*2. ii*). But the listing of 29 types of 'associative' relations by Neelameghan as relations not to be allowed into the hierarchical structure of a classification reduces that structure to a very poor repertory of actual concept/object-assignments, and puts an undue strain upon the syntactical devices of the classification (taken as an artificial language).

Though the concept of hierarchy seems historically to have come to the fore from the consideration, in the writings of Dionysios the pseudo-Areopagite, of the ranks of the various classes of angels (and thus not at all of subsumption in the sense of concepts related as Genus and Species, but rather of subsumption in a very figurative sense, namely of entities related as Governing and Governed or the like), the diagrammatic similarity of genealogical relations to classificatory trees seems to me to be an illusory one unless we consider the relation of Father and Son to be either of *entities* as such or of (quasi-)*concepts*. If of concepts, then each individuum is coordinate to each other (as with King 'N', father of King 'P', each of whom is a quasi-concept defining a period in the history of the area governed. (The 'species' here must be something such as the dynasty that included them both as individua, or Whole to their Parts.) If of entities,

a) taking the pseudo-Dionysios' *ranking* idea, we can look upon Charlemagne as subsumptive in relation to his sons because each of them governed a territory that was the equivalent of their father's only by summation (double negation) with his brothers'. And if

b) in the *genetic* sense, Son is subsumptive to Father (and Mother) just because of their genetic situation as seen through extensional hierarchicality: all the genes of both parents are represented in the child, but not vice versa.

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Thus we see that there is some justification for the Father/Son terminology if we expand it to include Mother: since the subsuming is always a partially negated subsumed, that part which is negated in the subsumed must come from somewhere else: it is either the specific difference, the Mother, or some other such source. No classificatory tree can possess more than one order (and a tree of only one order is no tree at all) without differentiation (reading downward; read upward it is partial negation, abstraction), and differentiation always implies concepts not intensionally possessed by the subsuming concept. That too is why extensional analysis ('description') is necessary to generate helpful hierarchy: because intensional analysis ('definition') alone does not reveal all that any concept subsumes.

J. M. Perreault

1) Documentation Research and Training Center: Seminar on Thesaurus in Information Systems. Bangalore, India: DRTC 1975. p. A1 – A8.

ASIS–1975 and Classification

In the program of the huge Boston Conference of the American Society for information Science, last October, some classification relevant topics were offered such as the two during the SIG/CR Session "Trends in Classification" by *C. D. Batty* "Education for Classification Research" and by *P. Richmond*: "What Next in Classification"; then in a socalled Poster Session (4) again *P. Richmond* with "Classification Research: The Bigger Revolution Ahead" and *H. G. Small*: "A citation model for scientific specialties"; finally in the Platform Session 6 the following seven papers: *Weinberg, B. H.:* Levels of linguistic analysis and information processing; *Stalcup, W. S., Petrarca, A. E.*: Automatic vocabulary control and its evaluation in computer-produced indexes; *Brisner, O.*: A system for automatic indexing and keyword translation as the basis for international cooperation; *Marcus, R. S.*: Networking information retrieval systems using computer interfaces; *Horsnell, V.*: The Intermediate Lexicon: the possibilities for information exchange networks; *O'Connor, J.*: Passage retrieval services for scientists; *Bender, T. K.*: A literary text conceived in a data bank.

A British-Library-Workshop on Multilingual Systems

The British Library sponsored a workshop on Multilingual Information Systems in October, 1975, at Dunchurch Industrial Staff College, near Rugby. The workshop was attended by 23 participants and chaired by Dr. R. H. Richens of the Commonwealth Bureau of Plant Breeding and Genetics. After hearing introductory papers on problems of multilingual working, the participants divided into two groups, to discuss 'linguistic' and 'management' problems. These groups recommended that:

a) A clearing house for information on thesauri and research into mono and multilingual thesauri should be established, preferably on an international scale.
b) The effect of 'noise' on the cost and effectiveness of information systems, particularly multilingual systems, should be investigated.
c) One or more interlingua for multilingual systems should be developed, with attention concentrated on the identification of concepts and the use of interlingua as switching languages for translingual information systems.
d) Overlap in the core areas of thesauri should be identified so that the cores may be reconciled, cores and fringes may be more clearly differentiated, the number of thesauri required to cover all knowledge may be ascertained and progress may be made towards constructing a macrothesaurus.
e) Methods should be elaborated for searching across a number of files.
f) User needs in respect of multilingual system should be ascertained.
g) A scheme should be elaborated for comprehensive specification of a multilingual system including details of subject field, categories of user to be served, hardware and software configuration, staffing, management structure, historical determinants of configuration, political objectives, real costs, funding and system of charging.
h) A study should be launched to compare existing multilingual systems with equivalent unilingual systems in terms of operational effectiveness, efficient use of scarce resources, and costs.

A report on the workshop will be made available in the British Library Research and Development Reports series.

From: Research and Development Newsletter Nr. 6, Jan. 1976, p. 2–3

Klassifikationsthemen beim IX. INER-Kolloquium

Mit fast 800 Teilnehmern, darunter ca. 30 Gästen aus 11 Ländern hat das Institut für Informationswissenschaft, Erfindungswesen und Recht der Technischen Hochschule Ilmenau (INER), DDR vom 12.–14.11.75 in Oberhof/Thüringen eine thematisch und organisatorisch hervorragend geleitete Konferenz abgehalten. In vier Parallel-Vortragsserien mit ausreichenden Zeiten für Diskussionen wurden 70 Vorträge gehalten und ihre Ergebnisse in einer Schlußveranstaltung resümiert. Die Themenkreise II, III und IV enthielten die folgende ansehnliche Anzahl von klassifikationsrelevanten Themen, die um größten Teil vorab in Form von Thesen und Kurzfassungen in Heft 20 der INER-Schriftenreihe angekündigt worden waren und in den nachfolgenden Heften im Wortlaut veröffentlicht werden sollen:

Manecke, H. J.: Zur Fachbezogenheit des Indexierens technischer Dokumente; *Reball, S.:* Methodische Untersuchung des Indexiervorganges; *Schuler, W., Preisler, W.:* Ein mathematisches Modell des Indexierprozesses; *Herrmann, P., Rudorf, D.:* Einfluß der optimalen Thesaurusgröße auf Aufbau und Zusammenwirken internationaler Informationssysteme; *Scibor, E.:* Kriterien für die Erarbeitung von Informationsrecherchesprachen; *Smerdjiev, G.:* Fachthesaurus und System der Informationsrecherche mittels Sichtlochkarten im Gebiet der Elektroche-

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mie; *Bauer, G.:* Thesaurus als Instrument zur Rationalisierung der Forschungstätigkeit; *Müller, J.:* Bewertung von Informationen durch klasseninvariante Prozeduren; *Müller, J.:* Klassifikation von Informationen nach ihrer Funktion im Prozeß der Bearbeitung von Aufgabenstellungen; *Feitscher, W.:* Möglichkeiten und Grenzen für eine partielle Faktenrecherche; *Feitscher, W.:* Aufgaben und Aufbau von Informations-logischen Systemen; *Cigánik, M.:* Realisierung einer automatischen Indexierung mit Rückkopplungssystem im Rahmen des IRIS-Systems; *Lamprecht, H., Lamprecht, H.:* Vor- und Nachteile der automatischen Indexierung; Freiwortindexierung als Zwischenstufe von der manuellen zur automatischen Indexierung; *Mater, E.:* Digitale und analoge Informationsverdichtung; *Schramm, R.:* Möglichkeiten der Einbeziehung deutschsprachiger Erfindungsbeschreibungen in automatisierte Inhaltserschließungsverfahren; *Gräf, K.:* Hinweise für die Inhaltserschließung und Übersetzung von USA-Patentschriften; *Dahlberg, I.:* Zur Normung im Bereich der Klassifikation. – Es sei darauf hingewiesen, daß eine Notiz über das VIII. Kolloquium von 1973 in Intern. Classificat. 1(1974) No. 1, S. 44 erschien.

I. D.

Scientometrics and Bibliometrics. The Idis-Conference, Jan. 1976

One of the topics which the FID/CR Conference in Bombay, Jan. 1975 has formulated for further basic research on designing ordering systems (see Intern. Classificat. 2(1975) No. 1, p. 40) suggested "Quantification for bibliometric and scientometric studies of world literature on all subject-fields". Apparently unaware of this recommendation but still in line with the present trend of mathematization of features and variables in the information processes, Prof. O. Nacke and the staff of his Institut für Dokumentation und Information über Sozialmedizin und öffentliches Gesundheitswesen (Idis) in Bielefeld organized a two-day conference (23–24 Jan. 76) on "Tasks, methods and results of scientometrics and bibliometrics for planning and research", thus celebrating its 20th anniversary of existence. The lectures concentrated on the basics of both 'scientometrics' (*A. Diemer, W. Gerdel, G. Murza*) and bibliometrics (*O. Nacke, R. Pfeifer*) and showed the application of bibliometrics in library planning (*G. Krug*) research documentation (*H. Stegemann*), and thesaurus- and classification research (*R. Henzler*), as well as in cancer research (*L. Sandor*), occupational medicine (*H. Lange*), and environmental hygiene (*W. Krämer*). Henzler's paper was not concerned with the quantitative analysis of literature in relation to given classes of a classification system, as e. g. work done by Kofnovec and Simandl with the UDC. He showed how a realistic construction of a vocabulary may be based on a computerized text processing and collecting of significant terms. Among others his tables demonstrated also that with the steady growth of a document store the documents would need an increasing number of descriptors. This raises the question whether perhaps, a structured document description may impede such a development.– The printing of the proceedings of this very challenging conference is under way. They may be ordered from Idis, Westerfeldstr. 15, 4800 Bielefeld.

I. D.

Symposium on General Classification Systems

The Central Classification Committee of FID (FID/CCC) will organize a two-day symposium in Brussels, Belgium, on 25–26 November 1976. The symposium will have as its theme "*General classification systems in a changing world*".

In addition to the different aspects of the Dewey Decimal Classification and the UDC (Universal Decimal Classification: mechanization, future development, present position, etc.), the following subjects will be discussed:

- history and historic approach
- the main present-day functions
- future prospects
- experience in mechanized/automated systems
- thesaurus aspect; the relation between thesauri and general classifications
- retrieval strategies using general classifications.

Papers on the above subjects are invited and should be submitted in A 4 format in English, French or German, contain not more than 3000 words and be provided with an abstract of not more than 200 words. Abstracts of the papers should be submitted by 30 June 1976, full texts by 31 August 1976.

The participation fee of $ 50 includes costs for copies of all abstracts and should be paid by 30 September 1976 into FID postal account, giro 513826 or FID account 51.95.24.780 with the Algemene Bank Nederland, The Hague.

All correspondence should be addressed to Mr. H. Verschoor, FID/CCC secretary, Classification Department of FID, 7 Hofweg, The Hague.

From: FID News Bulletin 26(1976) No. 3

French Publications in Classification

Ever since its start in 1964 the Société du Stage en Bibliothéconomie de La Pocatière (100, ave. Painchaud, La Pocatière, Quebec, Canada), devoted to the education and training of librarians, has been providing publications as teaching aids, an interesting number of which concerning classification topics. A first publication catalogue (16 pages) of 1974/75 lists among others the following titles with descriptions of their contents:

1. *Rioux, J.-L., Martin, A.:* Manuel pratique de classement des fiches de catalogue. 2nd ed. rev. 1972. 268 p., $ 5,–
2. *Immroth, J. P.:* Classification Library of Congress; manuel pratique d'utilisation. (Trad. de l'américain par R.-B. Bernier et G. Chaput). 1969. 301 p., $ 7.50
3. *Lévesque, R.-L.:* Introduction à la classification décimale de Dewey. Adaptation française de l'Introduction de l'Editeur. 1970. 67 p., $ 2,–
4. Abrégé de la Classification Library of Congress. Version française provisoire; trad. de l'américain par D. Belley, R.-B. Bernier, G. Chaput and A. Poulin. 1970. 427 p., $ 7.50
5. *Corriveau, A., Desruisseaux, I., Girard, E., Lévesque, R.-L., Savard, L.:* La classification décimale de Dewey (cours et exercices). 1971. 388 p., $ 8,–

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6. *Bernier, R.:* La classification Library of Congress (cours et exercices). 2nd ed., ref. & augm. 1973. 346 p., $ 8.75
7. *Robillard, J.-J.:* Les vedettes-matière. 1971. 234 p., $ 5,–
8. *Guilbault, F.:* Etude comparative des systèmes de classification de la Library of Congress et de Dewey. 3rd ed. rev. & corr. 1969. 38 p., $ 1,–
9. Classification décimale de Dewey et index, établis par Melvil Dewey. Première version française intégrale d'après la 18e édition ... Lake Placid Club. – Albany, N. Y.: Forest Press 1974. 1426 and 1559 p., $ 40,– for the two volumes.

Except for the last one all the other publications may be purchased at the address of the Société given above.

New UDC Developments

Twelve members from 8 countries and the FID Classification Department participated in the FID/CCC and FID/CCC/EG meetings in The Hague on 2–6 February 1976. The main points discussed were:

- *CCC membership*: the resignation of Mr. G. A. Llyod, in connection with his retirement, as secretary of CCC and CCC/EG and as rapporteur of CCC/P and his unanimous nomination as a CCC honorary member; the appointment of Mr. H. Verschoor as secretary of CCC and CCC/EG and as rapporteur of CCC/P;
- *UDC long-term development and modernization*: the disbandment of FID/CCC/DD "Drastic Development"; the establishment of FID/CCC/CG "Coordination Group" which would be responsible for the coordination, supervision and management of the analyses and evaluations of the existing UDC classes, made by UDC revision committees in light of the proposed UDC restructuring; the establishment of FID/CCC/SN "Structure and notation of the UDC", whose main function would be the study, preparation and elaboration of proposals for the future structure and notation of the UDC; the problems of manpower and funding connected with the UDC restructuring plans;
- *revision of FID 429 "UDC Revision and Publication Procedure"*: the temporary reinstatement of FID/CCC/RG "Rules and Guidelines of the UDC" so as to elaborate a revised version of the new draft UDC rules;
- *UDC Basic Medium Edition (BME)*: the recommended extension of the deadline for incorporation of proposals in the BME to include proposals published in "Extensions and Corrections" Series 9 No. 2;
- *UDC central management, service to users and promotion*: the publication of Extensions and Corrections this Spring; the publication of a new "Cumulated UDC Supplement 1965–1975";
- *Dewey Centenary Year celebration*: CCC Symposium in Brussels on 25 and 26 November on "General classification systems in a changing world";
- *current UDC revision and updating*: proposed questionnaire to UDC revision committees and P-note subscribers on a General UDC Revision Plan (GURP);
- *UDC project funding*: CCC funding request 1976 and long-term investment for UDC mechanization activities;
- *UDC and mechanization*: the necessity to create, elaborate and update a UDC master file in machine-readable form, the funding of which would be a matter of further FID Council and FID/CCC study.

The next CCC meeting was set for 22 and 23 November 1976 in Brussels; the next CCC/EG meeting was confirmed for 20 and 21 May 1976 in The Hague.

From: FID New Bulletin 26(1976) No. 3

PRECIS for Multilingual Use

PRECIS, the machine-produced subject-index system now employed in the British National Bibliography and various other publications, has been applied experimentally in a number of languages other than English. These experiments have shown the need for certain extra machine routines and codes, to deal, for example, with compound terms in German, Danish and similar languages; but they have also indicated that the syntactic and semantic logic on which the system is based can be applied successfully to a range of different natural languages.

The development of international exchange systems, especially the European information network, makes it timely to test the potential of PRECIS as a multilingual tool. Because of its special experience and expertise in this field, the Bibliographic Services Division of the British Library will house a project team, with an allocation from the Library's research funds, to evaluate the potential of PRECIS for translingual purposes, i. e. for switching indexing data from one language to another. The sum awarded, £ 63,600 over two and a half years, will be governed by similar terms and conditions as are applied to external institutions.

The project will create a set of routines and computer programs which will add a translingual component to the PRECIS system. This will enable the computer to convert the input string into a series of language-independent codes and translate these later into appropriate terms in a target language. These terms will then be manipulated into index entries in the target language without further intervention by the indexer.

The project is planned in two stages. The first stage, a pilot study, will use small specific subject data bases and, if these experiments prove successful, the project will then be extended to larger data bases, and will perhaps ultimately involve the creation of a new macrothesaurus in more than one language. For the present, it is intended that these translingual experiments should be limited to English, German and French.

Further information is available from the project head, Mr D Austin, The British Library, Bibliographic Services Division, 7 Rathbone Street, London W1P 2AL.

See also "An Indexing Manual for PRECIS" by D. Austin in: Intern. Classificat. 1 (1974) No. 2, p. 91–94.

From: Research and Development Newsletter Nr. 6, Jan. 1976, p. 2

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