product if it is viewed simply as a high level, general classification scheme. The *Manual*, which is a commendable addition, is well written and clear. It deals straightforwardly with the project's difficulties, goals, decisions, and procedures. Its directions for use of the scheme are easy to interpret and follow; however, some degree of sophistication in classification theory on the reader's part is necessary.

The scheme itself is modern in its flexible notation, moderate synthetic properties, and careful structure and faceting. It also has facilities for handling materials dealing with discussions of phenomena outside the structure of a discipline. For instance, the succession of topics reflects integrated level theory as explored by the Classification Research Group. Careful attention has been paid to placement of technologies with respect to the sciences on which they depend. Synthesis is allowed between any two class numbers, but the permissable relations are more restricted than in UDC. Careful scheduling generally allows the principle of inversion to determine combination order. Exceptions are carefully spelled out and grounded in theory. The combination provisions work because of the use of "implicit" faceting. Under this method, all subdivisions of topics are listed according to the following pattern:

1) Tools or equipment for carrying operations
2) Operations (i.e. purposive activities by people)
3) Processes, interactions
4) Parts, subsystems of objects of action or study, or of products
5) Objects of action or study, or products, or total systems.

When reversed, the pattern produces the standard facet combination order and also a clear order of precedence among aspects, should one wish to select, rather than combine, facets. The pattern, beginning with operations is clearly visible in the following example:

745 WATER TRANSPORT TECHNOLOGY AND SERVICES;

- ,05 Environmental, safety and rescue aspects of water transport Expand like 740,05, e.g.
  - ,86 Water traffic safety and accident prevention
  - ,88 Water transport rescue and salvage
- ,20 Water transport services
- ,26 Merchant shipping, freight and cargo services
- ,28 Passenger shipping, services and lines
- ,30 Water traffic and shipping control (incl. channel marking and signalling)
- ,35 Ship operation
- ,36 Navigation (sea and inland water)
- ,40 Ship and boat technology (both sea and inland water craft)
- ,42 Ship and boat design (= Naval architecture)
- ,43 Shipbuilding and Boatbuilding
- ,45 Marine engineering (both sea and inland water craft)
- ,47 Ship propulsion systems
- ,50 Surface craft (For navel craft, warships, see 764,50)
- ,52 Smallboats (incl. canoes, rowboats, and dinghies)
- ,53 Yachts (incl. sailers and motor-sailers)
- ,54 Sailing ships (incl. schooners, barques and brigs)
- ,55 Motor vessels (incl. large motor launches)
- ,58 Hydrofoil craft
- ,59 Underwater craft (incl. bathyscaphes and bathyspheres) (For navel submarines, see 764,56)

Classes 745,42,43, and 45 are operations.
Class 745,47 is a subsystem and classes 745,52–59 are products or objects of study.

The notation is flexible and expandable. It consists of three numbers, which can be divided by sets of two numbers, set off by commas, e.g. 867,78,47. In addition a "–" is used for combining the Time and Place facets, which may be used freely after either three or two number groups. Letters are also used for such lists as artists and countries, and "0" is the indicator reserved for combinations of scheduled numbers. Finally, as in Bliss, provision is made for concretes outside the discipline classes by the optional use of section 088. A general work on energy, for instance, would be classed in 088,212, where 212 is the number for energy from the physics schedules. This device is helpful in dealing with multi-disciplinary, mission oriented, materials.

However, the use of implied, rather than explicit faceting, lack of fully expressive notation, reliance on literary warrant, and the overall generality of the scheme occasionally combine to produce some unfortunate (if atypical) results, such as the following section from the Music schedules.

951 MUSIC
"
"
"
"

- ,30 Musical styles and genres
- ,32 Primitive music
- ,35 Oriental classical music
- ,40 Western (esp. European) music
- ,48 Modern music (incl. atonal and twelve-note music)
- ,52 Folk and traditional music
- ,54 Popular music (incl. jazz, swing and 'pop' music)
- ,56 Classical music
- ,61 Sacred, religious music
- ,63 Concert music (For theatre music, see 955–951)
- ,65 Dance music
- ,67 Programme music

The *Manual* and the schedules together have considerable potential move as a tool for teaching modern principles of classification. The clarity of the explanations in the Manual and the compactness of the scheme make it very attractive for that purpose. Nonetheless, didactic use alone cannot justify the amount of labor represented by the BSO. At present it appears to be a scheme in search of a purpose. No doubt it will need some modification for whatever use it is put to eventually. Also, although there is emphasis in the *Manual* on the design of a scheme that can be easily updated, the future of the scheme in that respect is not mentioned. We now have a new general classification scheme, if a very abridged one, but the question remains, will it find a user?

Irene L. Travis

MICEVIC, A. T.: **Methodische Grundlagen der Untersuchung wissenschaftlicher Informationsströme.** (Methogological foundations for the investigation of scientific and technical information flows.) (In German). Leipzig: VEB Bibliographisches Institut 1979. 162 p., 18,– M (GDR)

Das hier zu besprechende Buch ist einem größeren Werk der Verfasserin entnommen, das in russisch die automatische Projektierung behandelt. Sie widmet den wissenschaftlich-technischen Informationsströmen deshalb besondere Aufmerksamkeit, weil bei den immer kompli-

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zierter werdenden technischen Systemen die Entwicklung weitgehend von dem Maß der Informationsversorgung abhängt.

Untersucht wird die erstmals von Bradford beschriebene Ungleichverteilung der Publikationen auf die Zeitschriften, die durch die von Zipf aufgestellte Funktion

$$d_n = \frac{C}{n} v$$

approximiert wird, wobei n die Rangzahl nach der Zahl der in ihnen enthaltenen einschlägigen Publikationen geordneten Zeitschriften und d_n die Zahl der in der Zeitschrift mit dem Rang n erschienenen einschlägigen Veröffentlichungen ist.

Diese Funktion folgt jedoch dem Kurvenverlauf nicht befriedigend, sie paßt sich dem Mittelteil der Werte recht gut an, entspricht jedoch nur schlecht dem Anfangsteil, der empirisch eine geringere Steigung hat als das Modell. Als ersten Schritt zur Lösung des Problems verwendet M. das Verteilungsmodell von P. Cole, dessen Besonderheit die Normierung der beiden Parameter für die Publikationen und die Zeitschriften ist. In Cole's Formel

$$\frac{R}{RT} = 1 + 0{,}43 \operatorname{Log} \frac{T}{TT}$$

steht T für die Rangzahl der Zeitschrift, TT für die Gesamtzahl der Zeitschriften, R für die kumulierte Zahl der Publikationen bis zur Zeitschrift der Rangzahl T und RT für die Gesamtzahl der Publikationen. Die Konstante 0,43 ist ein Mittelwert aus verschiedenen Literaturkollektiven mit der Spannweite 0,413–0,436. Diese Normierung ermöglicht es, in anschaulicher Weise die verschiedenen Kurvenverläufe miteinander zu vergleichen.

Nach einer Darstellung der Gliederung der Literaturmenge „Maschinenbau" im Pool des VINITI geht M. die Lösung des Modellproblems für das Bradfordphänomen an und zeigt, daß eine gute Approximation durch eine Funktion 3. Ordnung, also durch die Formel

$$y = ax^3 + bx^2 + cx + d$$

zu erreichen ist.

Hierbei entspricht y wieder die Menge der Publikationen, die in den Zeitschriften bis zur Rangzahl x angelaufen sind. Die Konstanten werden nach der Methode der kleinsten Quadrate ermittelt.

Das für die Berechnung der Werte verwendete in ALGOL geschriebene Programm ist im Anhang voll abgedruckt.

Ein weiterer Anhang enthält noch eine größere Zahl von Tabellen, die zur Veranschaulichung der Problematik nützlich, sonst aber nur von speziellem Interesse sind.

Micevic hat durch diese Analyse einen wertvollen Beitrag zur Betrachtung des Bradford-Phänomens geleistet. Das Büchlein ist für jeden lesenswert, der sich mit diesem Problem beschäftigt. Der Buchtitel ist jedoch zu weit gefaßt, die Untersuchung wissenschaftlich-technischer Informationsströme umfaßt weit mehr als die hier beschriebene Ungleichverteilung der Publikationen auf die Zeitschriften.

Otto Nacke

Instructions to Authors

INTERNATIONAL CLASSIFICATION publishes original papers, reports, communications, book reviews in the fields of
- general ordering theory, concept theory, science-theoretical bases and history of classification
- numerical taxonomy and intellectual construction of classification systems and thesauri as well as
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It is interested in the results of special conferences on classification in educational and training programs in classification, in improving standardization in and in the terminology of classification.

Papers in either English, French or German are accepted. Manuscripts (of 1500 to 3000 words) should be submitted to the Editor-in-Chief in two sets (the original and one copy) typed in double space. Papers are refereed and edited. They should be accompanied by an *indicative abstract* of 100–200 words in English.

The *text* of the papers 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 with a discussion and/or a 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 (e.g. text[1]) 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 title of the publication, abbreviation of the journal according to the ISO Standard No. 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 and year. Examples:

Fugmann, R.: *The glamour and the misery of the thesaurus approach.* In: Intern. Classificat. 1 (1974) No. 2, p. 76–86, 20 refs.

Sartori, G., Riggs, F. W., Teune, H.: *Tower of Babel.* On the definition and analysis of concepts in the social sciences. Pittsburgh: Intern. Studies Assoc. 1975. 107 p. = Intern. Studies Occ. Paper No. 6

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 soft pencil on the back. Numbered *Legends* should be attached on a separate sheet.

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