

STAMMERJOHANN, Harro, JANSSEN, Hildegard (Comp.): *Handbuch der Linguistik*. Allgemeine und angewandte Sprachwissenschaft. München: Nymphenburger Verlagshandlung 1975. 584 p.

Information scientists – always concerned to remain in terminological control of their field – gladly welcome every new appearance of a dictionary or handbook, even if it covers only a related field of knowledge. For it will classify and order yet another area, or at least its editor is likely to claim that it does. But experience has taught in the meantime that every attempt to define and explain concepts has more descriptive than normative (i. e. norm-setting) power. The question is, should it be otherwise? The terminological inventory of a science or a specialized field of endeavor is not normally imposed from above, i. e. by terminological specialists or functionaries; instead, it develops with all its nuances from the needs which arise in praxis. Just like philosophers, terminologists and lexicographers should perhaps not intrude in any too definitive or reglementary a way during the innovatory stage of a discipline, but rather simply follow, with more reserve, the flow of the current. The real benefit of dictionary work actually consists in recognizing prevalent opinions and terms as such and presenting them accordingly, in strengthening growing tendencies by fixing them in writing, and in only briefly referring to idiosyncrasies or, by glossing over them completely, enabling them to disappear of their own accord. The influence thus exerted, the service thus rendered are great enough as it is.

If, in very young sciences, terminological control may be a hindrance, in older, firmly established, or even merely highly developed sciences, it is extremely difficult to achieve. Indeed, objectivity may be virtually impossible for a single individual, since this single individual can never survey all schools objectively, no matter how hard he tries. According to widely accepted hermeneutical principles, the 'pre-judgement', the standpoint of the reviewer, always enters in, either in the division and distribution of concepts or indeed in their treatment. A structuralist may understand a behaviourist, but the computer scientist or formal logician will not be likely to come to any agreement with a representative of the 'ordinary language school', with a psycholinguist, or a sociolinguist.

One way out of this dilemma is to be found in a summation of pre-judgements, standpoints and knowledge, in the hope of achieving neutrality and objectivity. The *Handbuch der Linguistik* (Handbook of Linguistics), joint enterprise of 20 authors, who cover 17 areas of inquiry altogether in long encyclopaedic articles, does just this. Harro Stammerjohann, in collaboration with Hildegard Janssen, has compiled the handbook from this small number of original articles – the result: ca. 1200 keywords. In the process of collating, the individuality of the authors has disappeared to a great extent, so that what is intended to be objectivity looks more like anonymity. Such a system of editing works, of course, only if and when the authors observe deadlines. And that is the problem with most scientific teamwork done under a time limit. Extraction and co-ordination of keywords appear to have been possible in the following areas (the names of the authors responsible for the original articles are given in parentheses): Structuralism (European: Karl-

Hermann Körner; American: Gerhard Stickel), Generative Grammar (Christoph Schwarze), Phonetics (Georg Heike and Eike Thürmann), Quantitative Linguistics (Willy Martin), Comparative Historical Linguistics (Werner Betz), Foreign Language Teaching (History and Methods: Harald Gutschow; Educational Aids and Media: Reinhold Freudenstein). Selectivity has occurred, however, often at the price of topicality. Bibliographical references seldom extend beyond 1972.

The remaining long articles include 'Language Science, History' (Hans Arens – 24 p.), 'Translation' (Wolfram Wilß – 22 p.), 'Sociolinguistics' (Norbert Dittmar – 21 p.), and perhaps 'Semantics' (Joseph M. Barone – 12 p.), all of which either could not be or were not intended to be edited according to the above system. The latter applies perhaps as well to the areas of 'Text Linguistics and Pragmatics' (Elisabeth Gülich and Harald Weinrich) and 'Psycholinguistics' (Carl Friedrich Graumann).

How does one go about judging such an undertaking in a more or less fair way? In any case, it will be difficult to be objective, for this reviewer's interest – and that of the majority of readers of this review – is not only a linguistic one, but is also concerned more with the possibilities of the application of linguistic terminology to problems in the field of information and documentation, especially since, according to the subtitle of the handbook, applied as well as theoretical linguistics is to be expressly covered.

Fortunately, it happens that Hans Müller, with similar interests, has reviewed, in *Nachrichten für Dokumentation* (6,74), the *Wörterbuch, Linguistische Grundbegriffe* (Dictionary. Basic Linguistic Terms), compiled by W. Ulrich in 1972, and has set up four criteria for judgement:

- a. Number of lexical entries and principle of selection
- b. Form of presentation
- c. Informational value of definitions
- d. Bibliographical aids

If a clearer distinction is made here between quantitative and qualitative criteria and if the scope and interests of the intended user are considered as well, then these are quite suitable criteria for the evaluation of dictionaries.

1. *Number of entries*. The handbook contains 1200 entries (all figures are approximate). Of these, there are 120 items which comprise more than 10 lines, 570 which comprise between one and ten lines; 110 one-line items; and 130 cross references. If the number of accepted linguistic terms (in English) is taken to be 3000, as reported by Müller, then the handbook would account for 30 % of them.

2. *Bibliographical aids*. 350 items contain bibliographical references, which, however, have not always been brought up to date. The fact that in a rapidly developing discipline like machine documentation the most recent entry is an article by Salton from 1969 is surprising. And yet, theoretically it could have been otherwise, as, for instance, the items 'Binarism', 'Functionalism' and 'Text Linguistics' demonstrate. Perhaps this shortcoming could have been avoided, if there had been a general bibliography subdivided into the 17 main areas. But the

editing staff was undoubtedly too small for such an undertaking.

### 3. *Form of presentation – outward form, accessibility.*

The handbook is clearly divided into lexical items. The many drawing and diagrams (tree diagrams, tables, flow charts, sketches) facilitate understanding and learning. The index of authors is a welcome aid, providing the user with another possibility for access and functioning almost like a science citation index by outlining the importance of the various linguistic researchers. Although an additional keyword index would be almost paradoxical in a handbook which is already in the form of a dictionary, it would nevertheless have been useful in this case. A user who wants to know something about bottom-up or top-down analysis, for example, must already know enough to look for them under the item 'Parsing' (in itself excellent).

4. *Informational value.* This criterion cannot be separated from the following one (Principles of selection), as informational value is dependent upon the fore-knowledge and the interest of the user.

It would appear that the areas of traditional linguistics up to transformational grammar – and even, for the first time in a handbook, their application to (foreign) language teaching and to human and machine translation. (Heinz Dieter Maas and Harald Zimmermann were originally responsible for the latter) – are well covered and presented. Varieties such as case grammar, dependency grammar, and valence theory are somewhat neglected.

Computer linguists have been second-class citizens in the eyes of theoretical linguists for years, and their theories, concepts, and methods were advanced to 'real' linguistics only with the utmost of care. Perhaps this (and not the competence of the author responsible, Stephan Braun) is the explanation for the fact that the items in more technical areas are astonishingly elementary. Thus, under 'Algorithmic Linguistics' the user might expect – especially when this term is said to be synonymous with computer linguistics – more than just a short explanation of algorithms, of a few programming terms (such as block diagram, go-to command, main and sub-routine program), and of the difference between the storage of non-numerical information in a chain and in a list structure. Similarly, the items concerning propositional logic and Montague grammar are too basic; the item 'Formal Languages', too short ('Automaton' is more informative). Under 'Computer' the user will find the rather thoughtless judgement that will only reinforce already existing prejudices: "In answer to the question as to whether two words have the same meaning, a computer can, accordingly, not be used" (75). Of course, a computer cannot be used, unless it has been properly instructed, i. e. programmed for linguistic analysis, but without instruction it cannot add 2 and 2 either. Is there then no such thing as computer semantics? At any rate, there is a lack here which is all the more embarrassing in that the whole area of artificial intelligence is ignored, in spite of the fact that its goal is a supremely linguistic one, i. e. how to understand natural language. But this is already into

5. *Principles of selection.* Stammerjohann has looked through the nomenclatures of at least the most common dictionaries of the last few years and apparently con-

siders this sufficient to assure him a clear conscience\*. But he does not take complete advantage of the possibility of giving his handbook a special character of its own, different from that of existing ones. The inclusion of applied linguistics is a welcome addition, as it has until now been excluded; however, attempts at locating items belonging to this area are sometimes unsuccessful. The explanation for this is perhaps to be found in the proposed definition of applied linguistics (author of the item with the same title: *Gerhard Nickel*): "direct or indirect application of linguistic knowledge in language teaching, and especially foreign language teaching". To be sure, this terminological restriction will not disturb the majority of users, who will be either 'pure' linguists or 'appliers' in language teaching. But specialists in this area will be disappointed. Thus there are items such as 'Educational television' and 'Audio-visual media', but the entire terminology, in the meantime well developed, from the area of information and documentation has been squeezed into the item 'Documentation, machine' – not even one page long – which sticks out like a sore thumb not lastly because of the reversed order of its keywords, a practice not frequent elsewhere in the handbook.

There are no items concerning indexing, information retrieval, fact retrieval, question-answering systems, thesauri, technical languages, abstracts, descriptors, indexes etc. This lack has, of course, an effect on other keywords: under the items 'Information' and 'Communication' only the Shannon-Weaver and the Osgood definitions respectively are considered; in 'Propositional logic' there is no reference to the use of Boolean operators in retrieval; under 'Association' there is no mention of statistical relations; 'Reduction' appears only as a term in phonetics, etc.

The integration of quantitative linguistics (originally responsible: *Willy Martin*) is more successful, with keywords such as quantitative language features, Zipf's law, frequency, random variables, etc.

*Conclusion.* The *Handbuch der Linguistik* is undoubtedly not an epoch-making standard work, but this was perhaps not the intention of its editors. Pure linguistics and its application in (foreign) language teaching and translation are presented convincingly and informatively. There are problems, however, in the area of computer-oriented application. But regardless of this, the idea of bringing 20 researchers together in the hope of greater objectivity is a worthwhile endeavor. The fact that for a larger undertaking a great deal more patience is required can be seen in the *Historisches Wörterbuch der Philosophie* (Historical Dictionary of Philosophy), of which only 3 volumes (up to H) have appeared in the last ten years, in spite of a staff of a dozen editors and approximately 600 authors. But philosophers are not necessarily trying to meet the demands of the market.

The following are the most important reference works (only *Ludewig* and *Bohusch* were not consulted by *Stammerjohann*):

*Althaus, H. P., Henne, H., Wiegand, H. E.* (Eds.): *Lexikon der Germanistischen Linguistik*. Tübingen 1973.

*Bohusch, O.*: *Lexikon der grammatischen Terminologie*. Donauwörth 1972.

- Dubois, J. et al.: Dictionnaire de linguistique. Paris 1973.
- Ducrot, O., Todorov, T. et al.: Dictionnaire encyclopédique des sciences du langage. Paris 1972.
- Hartmann, R. R. K., Stock, F. C.: Dictionary of Language and Linguistics. London 1972.
- Heupel, C.: Taschenwörterbuch der Linguistik. München 1973.
- Hofmann, J. B., Rubenbauer, H.: Handwörterbuch der grammatischen und metrischen Terminologie. Heidelberg 1963.
- Köhring, K. H., Beilharz, R.: Begriffswörterbuch Fremdsprachendidaktik und -methodik. München 1973.
- Lewandowski, Th.: Linguistisches Wörterbuch I (A–K). Heidelberg 1973.
- Ludewig, W.: Lexikon der deutschen Sprachlehre. Gütersloh 1969.
- Martinet, A. (Ed.): La Linguistique. Guide alphabétique. Paris 1969.
- Ulrich, W.: Wörterbuch. Linguistische Grundbegriffe. Kiel 1972.
- Vermeer, H. J.: Einführung in die linguistische Terminologie. Darmstadt/München 1971.
- Welte, W.: Moderne Linguistik: Terminologie/Bibliographie. 2 Vol. München 1974.

Rainer Kuhlen

VOGEL, Friedrich: *Probleme und Verfahren der numerischen Klassifikation*. (Problems and processes of numerical classification). Göttingen: Vandenhoeck & Ruprecht 1975. 410 p. DM 56,—

Mit diesem Werk legt der Verlag innert Jahresfrist einen weiteren Beitrag zum Thema ‚Automatische Klassifikation‘ vor<sup>1</sup>. Diesmal ist es ein Buch für den Praktiker, dem die kritische Auseinandersetzung des Autors mit den Klassifikationsmaßen und -verfahren gute Dienste leisten wird. Er findet für seine Probleme zwar keine Patentlösung (und wer vermöchte diese auch zu geben), aber er lernt, sie richtig anzugehen und Lösungen zu interpretieren. Vom Leser wird ein wenig Übung im Umgang mit automatischen Klassifikationsverfahren vorausgesetzt, aber er muß kein Mathematiker sein.

Der Autor berichtet zunächst aus seiner Erfahrung bei der Anwendung von Klassifikationsmaßen. Er stellt sie einander gegenüber und diskutiert ausführlich ihre Güte in Abhängigkeit vom Merkmalstyp, von der Art der Ähnlichkeit bzw. Unähnlichkeit zwischen den Objekten (Klassen) und von ihren speziellen Eigenschaften. Dabei legt er besonderen Wert auf die Entropie als Maß für die Unähnlichkeit bzw. Homogenität bei binären Merkmalen. Zum besseren Verständnis dieses Maßes fügt er einen verständlichen Exkurs in die Informationstheorie hinzu.

Bei den Klassifikationsverfahren geht es dem Verfasser, von Ausnahmen abgesehen, um hierarchisch-agglomerative Verfahren für binäre Merkmale. Solche Methoden interessieren den Informationswissenschaftler weniger, einmal, weil sie nur disjunkte Klassen liefern, aber auch, weil sie für große Datenmengen ungeeignet sind. An einem Beispiel aus der Unfallursachen-Statistik werden die Klassifikationsergebnisse, die die verschiedenen Verfah-

<sup>1</sup> 1974 erschien bei Vandenhoeck & Ruprecht das umfangreiche Werk von H. H. Bock: *Automatische Klassifikation*. 480 S. (Besprechung siehe Intern. Classificat. 1 (1974) No. 2, p. 107–108)

ren zeitigen, demonstriert. Dabei gibt es bei gleichen Daten ganz unterschiedliche Klassen (Dendogramme), was auf den wenig erfahrenen sicher verwirrend wirkt. Trotzdem haben alle Verfahren (und ebenso alle Klassifikationsmaße) eine Berechtigung, und keines kann schlechthin als das bessere oder schlechtere bezeichnet werden, worauf der Verfasser wiederholt hinweist. Bei der Auswahl der Verfahren ist die Merkmalsstruktur und auch die Zielsetzung von entscheidender Bedeutung. Nur in Bezug auf diese kann ein Verfahren beurteilt werden.

Die Bibliographie ist mit über 700 Titeln reichhaltig, doch entsteht bei der Lektüre der Eindruck, daß nur ein Teil direkten Niederschlag gefunden hat. Dieser Verdacht wird durch das Fehlen eines Autorenverzeichnisses noch bestärkt.

Häufige Zitate in englischer Sprache erschweren die Lesbarkeit, besonders dann, wenn sie Bestandteil deutscher Sätze werden.

Hermann Fangmeyer

Zur Rezension meines Buches „Probleme und Verfahren der numerischen Klassifikation“ von H. Fangmeyer sind — um Mißverständnisse auszuräumen — einige wenige korrigierende Anmerkungen angebracht.

Der Rezensent schreibt unter anderem: „Bei den Klassifikationsverfahren geht es dem Verfasser, von Ausnahmen abgesehen, um hierarchisch-agglomerative Verfahren für binäre Merkmale“.

Mir geht es in erster Linie um leistungsfähige, wirtschaftliche und praktisch anwendbare Verfahren zur Bildung disjunkter Klassen. Ich glaube gezeigt zu haben, daß wegen der sehr restriktiven Annahmen, die den neueren iterativen (nicht-hierarchischen) Klassifikationsverfahren zugrunde liegen (insbesondere muß die Anzahl der zu bildenden Klassen a priori festgelegt werden), die hierarchisch-agglomerativen Verfahren in aller Regel den iterativen Verfahren vorzuziehen sind. Aus diesem Grunde werden Verfahren dieses Typs besonders ausführlich erörtert. Dabei steht zwar die Klassifikation von Einheiten anhand binärer Merkmale im Vordergrund des Interesses, doch ist von den acht hierarchisch-agglomerativen Verfahren, die gründlicher als andere Verfahren untersucht wurden, nur eines, nämlich die Entropieanalyse, ausschließlich für binäre Merkmale definiert. Alle anderen Verfahren sind auch zur Klassifikation von Einheiten anhand metrischer Merkmale geeignet. Entsprechende Hinweise fehlen nicht.

Friedrich Vogel

DANIEL, Ruth, MILLS, J., with the assistance of SELWOOD, R. and ELLIOTT, Pirkko: *A Classification of Library and Information Science*. For the Classification Research Group. London: The Library Association 1975. 127 p. Copyright: The Library Association, The Polytechnic of North London, and the Classification Research Group. = Library Association Research Publication No. 15. £ 2.50. ISBN 0 85365 118 3