EDITORIAL

Classification and Cognition

The Third Annual Conference of the Gesellschaft für Klassifikation e.V. (Society for Classification) in Königstein/Ts, Germany, April 1979 on "Classification and Cognition" may be remembered as a milestone in classification history; for *cognition* really has been introduced into the classification scenery – if I may say so. The papers were given in German and English – since the conference was also announced as the First Regional Conference of FID/CR – soon they will appear in three volumes.[1]

To convey to our readers some of the more important papers given in German we selected two of them for this issue (W. Dahlberg, R. Fugmann/H. Winter). A third plenary paper which likewise brought some extraordinary important conclusions was the one of A. J. N. Judge, Ass. Gen. Secr. of the Union of International Assoc., Brussels, which was related to the content of the series of articles of which we bring in this issue the third and last part. His paper presented at the conference summarized these three parts. Regarding these papers in general they take import for basic research as well as for applied classification.

The paper of *W. Dahlberg* deals with the most crucial and most important but least understood elements of classification, of scientific endeavor, even of cognition as a whole: it is the most fundamental, most basic central concepts of our cognitive cosmos he strives to englihten. Basic concepts not only govern and build up the keystones of natural language but enter also into all branches of learning respectively their languages and terms – with artificial languages presupposing natural language for their adaptation and interlinkage as well as for their creation. Therefore these basic concepts are the pillars which support our cognitive efforts on the whole and with the degree of clarity and profundity of our understanding them we will grow in our ability to better understand where we are in using more specific terms and concepts.

W. Dahlberg probes into the subject from four angles: (1) From a purely structural point of view he shows the possibility of ordering in distinguishing basic principles of order. (2) In introducing a geometrical approach he presents methods of geometrically visualizing conceptual relationships thereby creating 'concept clarifications'. (3) Enhancing the whole of cognitive functions he emphasizes the need for a thorough unfoldment of all aspects of cognition for a dynamic realization of all cognitional momenta inherent in conceptual contexts, (4) In presenting examples for 'self-clarificatory concept patterns' he shows how – in applying the principles of order, methods of representation and functions of cognition – one can step by step realize a thorough, clear and complete classification of basic concepts by starting from a classification of structural basic concepts and by using it to structure subject scopes which then are dynamized by operational facets and projected onto the whole of objective data.

Though the language of the paper is difficult to read and unusual the interested reader will be able to follow by investing some additional cognitive receptivity and activity of his own.

The paper of *R. Fugmann* and *J. H. Winter* ("Reverse Retrieval: towards analogy inferences by mechanized classification") bases firstly on the theory that classes resp. their concepts can be understood as a set of characteristics whereby these are represented in each case by the broader concepts of a concept and secondly in the possibility of applying the analogy inference for conclusions which follow from the specific combination of characteristics, e.g. that specific chemical substances show certain properties or that a certain kind of literature exists in a library although direct retrieval has not or would not have been able to locate it. This work is so relevant for it not only calls for a clear concept analysis which any work in connection with classification systems demands, but proves also that *only* by the aid of concept analysis and its results a meaningful subject description of our literature can be accomplished. The method is so very simple that mostly it is not quickly realized that with this socalled reverse retrieval much more can be obtained from our databases and our libraries than with the method used so far.

For this reason a reversal in thinking is needed likewise, in particular a reversal from alphabetical thesauri to classification systems developed by concept analysis. How much time will it take until this reversal is achieved?

The contribution of A. J. N. Judge ("Representation of sets: the role of number") brings us also a remarkable step ahead regarding the pragmatic aspect of classification. The mode in which man combines and systemizes his knowledge to explain and communicate it to others is oriented towards number and proportion which insight we have seen likewise in W. Dahlberg's contribution where the complexity of conceptual clarifications can be lead back to simple principles of order which in turn are nothing but numbers corresponding to logical and ontological valencies. These structures of ordering should be observed when creating classification systems. To the degree this is possible the systems will become not only more easily understandable but also increasingly transparent and memorizable. Judge does not mention this but the conclusions are easy at hand: Man as likewise a system of high rate of order seems to be organized according to certain numerical proportions. Not to recognize and not to use these accordingly would be unwise and unrealistic. Therefore we believe that this contribution too has to be understood as a programme for future studies.

But all of these contributions point into one direction: an increased consciousness for the possiblities classification opens for the rest of our cognitive endeavors; classificare necesse est!

Ingetraut Dahlberg

1 These may be had at the Secretariat of the Gesellschaft für Klassifikation eV, Woogstr. 36a, D-6000 Frankfurt 50. The program of this conference was published in I.C. 6 (1979) No. 1, p. 39–40; a report on its results will appear in the next issue of this journal.

GESELLSCHAFT FÜR KLASSIFIKATION EV

TAGUNGSANKÜNDIGUNG
UND
AUFRUF FÜR VORTRAGSBEITRÄGE / CALL FOR PAPERS

Mit der Themenplanung für unsere 4. Fachtagung vom 16.-19. April 1980 in Salzburg wollen wir an die Ergebnisse einer Tagung von 1967 anknüpfen, die unter dem Titel "System und Klassifikation in Wissenschaft und Dokumentation" stattgefunden hat und in der Schriftenreihe "Studien zur Wissenschaftstheorie" (Bd. 2), herausgegeben von Prof. A. Diemer, im Verlag Anton Hain, Meisenheim 1968 erschienen ist.

Das Thema dieser 4. Fachtagung soll lauten:

WISSENSSTRUKTUREN UND ORDNUNGSMUSTER

Folgende Fragen sollen z. B. behandelt werden:

1) Welche formalen Möglichkeiten (logische, mathematische, statistische) der Hypothesenbildung, Analogie, Isomorphie, Datenanalyse u. a. besitzen wir für die Ableitung und Darstellung von naturimmanenten Ordnungsstrukturen ?

2) Welche Strukturmuster liefern uns die uns umgebenden Lebewesen in ihrer Entwicklung, ihrem Aufbau, ihrem Verhalten? Wie lassen sich diese in begriffliche Ordnungen übertragen?

3) Nach welchen Ordnungsmustern (linearen, vernetzten, geometrisch abbildbaren ?) arbeitet das menschliche Gehirn, welche Weltmodelle vermag es zu erfassen?

4) Welche Gesetzmäßigkeiten zeichnen sich bei der Aufstellung von Wissensordnungen im geschichtlichen Ablauf der Erkenntniszunahme ab?

5) Welche Wissensstrukturen sind in der menschlichen Sprache, den Begriffen, Begriffsrelationen und begrifflichen Aussagen enthalten?

6) Mit welchen Wissensmustern lassen sich Klassen bilden, zusammenfassen, anordnen und überschaubar und benutzergerecht darstellen? Mit welchen Vorstellungen von Klassenordnungen wird z. B. eine Bibliothek oder eine Bibliographie benutzt?

Wir wenden uns mit diesem Aufruf an Wissenschaftstheoretiker und Wissenschaftshistoriker, an Fachvertreter der einzelnen Wissenschaften, an Mathematiker und Statistiker, an Systemtheoretiker und Organisatoren, an Informationswissenschaftler und Informatiker und nicht zuletzt an alle Klassifikationsexperten in Wissenschaft und Praxis und bitten um Ihre Vorschläge zu den o. g. allgemeinen Problemen der Strukturierung und Ordnung von Gegenständen und von Wissen über diese Gegenstände wie auch zu speziellen Anwendungsbeispielen aus einzelnen Wissensgebieten.

Wir bitten Sie, Ihre Vorschläge für Vorträge, Thesen oder Diskussionsbeiträge bis zum 1. Oktober 1979 an die Geschäftsstelle der Gesellschaft für Klassifikation e. V., Woogstr. 36a, D-6000 Frankfurt 50 zu senden.

Die Vorträge sollen veröffentlicht werden. Bitte, entnehmen Sie beiliegender Publikationenliste, welche Themen bisher in unseren Tagungen behandelt wurden.