A place for each toy

An interview with Ingetraut Dahlberg

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Imagining that we are talking in an informal way, leaving apart definitions for a moment, how would you describe what knowledge organization (ko) is?

Our knowledge is based on our ability to think and speak. Since our childhood we learned the names of things and stored them in our brains. We also learned that things need a location. The toys used needed to go back into a box or a cupboard. Not knowing however, we also made statements about the things of our environment and by this we created already our "knowledge elements" of these things in our brains and memory. And by the sum of a number of such knowledge elements of one and the same thing, we established, so to speak, a concept of the thing and gave it a name or some kind of a designation, such as *a toy–box* as a «small or large wooden or carton–like box for toys for a child of a special age». And now we can say: all of these properties — small or large, wooden or carton, differing ages — are knowledge elements or characteristics of the toy–box in mind.

What may look like a simple game or language action of a learning child is essentially the same that adults do with the things of their mind on a somewhat higher level, and scientists do when they create new concepts and their names and introduce them in their environment. By the statements of necessary knowledge elements of referents, the characteristics of concepts are created and it is obvious that, if different concepts have the same or similar characteristics, then a relationship between such concepts must exist. On these relationships, of which ko–people distinguish four kinds, among which two hierarchic ones, it is possible to build a classification system with its well–known hierarchical structures.

Since thus concepts come into being by the sum of knowledge elements stated about their item of reference, it is possible to call a concept a knowledge unit. Thus a classification system is composed of singular knowledge units and classes of them.

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Coming to the second element of the term *knowledge organization*, we return to the toy box and the need to take care of order and to place the toys in a suitable location. The knowledge units, our concepts, need their proper place by which they are organized in the most suitable way according to their characteristics. If we follow the categorial relationships we may place them according to a categorially suitable order. As any system needs an element position plan, it is reasonable to establish one in the way our sentences are built, so that the sequence of concepts can be used for statements about topics occurring in reality, as e.g. titles of books or articles, or any other application need.

However, the chosen element position plan which must accompany each classification system as its location system is also needed to find and retrieve the concepts searched for. It must be made explicit and characterizes the kind of organization preferred by the system builder.

How, and why, did you first get interested in knowledge organization?

When I started to work in a library and documentation center for the books and journals in the field of documentation itself (1963), I needed an ordering system for the description of their contents. Thus I created my first thesaurus for these documents. At that time nobody spoke of knowledge organization. I went through an annual course in scientific documentation in Frankfurt (1962–63) with lectures on the UDC and the Colon Classification and that was the time I really got interested in classification.

In 1964–65 I had the chance to spend almost a year in the library of Florida Atlantic University at Boca Raton, Florida, which was the first US university library with a computer for cataloging purposes. I worked with Jean Perreault in the Research Department in order to improve the search vocabulary, especially with regard to relationships between subject headings or class descriptors. We used the excellent book of Eric de Grolier *A study of general categories applicable to classification and coding in documentation* and developed a scheme of *relators* which could be used together with class descriptors. The experiences from this time inspired me in my later activities back in my German library and documentation center. It also helped me in collaborating in a UDC working group to improve the schedules for kinds of documents, resulting later on in ideas to improve the UDC entirely.

My doctoral dissertation of 1973, with the topic "The universal classification system: its ontological, science–theoretical and information–theoretical foundation", published as *Foundations of universal knowledge ordering* used much of the experiences I had made in the Sixties and lead lateron to the founding of a Classification Society in Germany (1977) and the founding of the International Society for Knowledge Organization in 1989. Actually, our

founding group wanted to name it Society for Knowledge Ordering but with regard to the English double connotation of *ordering* we decided for *Organization*. Thus we also founded this new term, *knowledge organization*.

Does the German term Ordnung *include a connotation of "sorting in some systematic order" often lost by those using the English translation of this term into* Organization? *The present fashionable thesis says, with computers there is no need of systematic sorting anymore; but it seems to me that principles for ordering are still much needed as a component for browsable interfaces...*

If the terms of concepts are not given in any order or in an alphabetical one, it will not be possible to recognize the relationships which combine concepts. In a systematically arranged concept system, the user and also the programmed machine will immediately recognize the relationships between the different concepts, and will use this recognition for further search and establishing further relationships. For a human being this means also enlargement of his/her insight into the dependencies which open themselves and which will widen the understanding of a given situation. The German term *Ordnung* indeed presupposes several ways of ordering, like space–related ones (above, down) or time–related ones (earlier, later). Ranganathan had listed 14 such ordering principles. They play a role in addition to using an element position plan, such as his PMEST, or my Systematizer.

How did the creation of such an international society as ISKO *arise?*

As after 12 years of existence, my formerly mentioned German Classification Society had grown up to comprise 200 members, 100 of them were mathematicians. It happened so that this group succeeded in the elections of March 1989 "conquering" the Executive Board. We, the conceptualists in the Society, decided thereupon to leave and to create a new society and since I had already started in 1974 a journal *International Classification* we asked its Advisory Board for advice and received full applaud to create an international classification society. But we decided not to use the term *classification* anymore in our title. Thus the International Society for Knowledge Organization, ISKO, was born on July 22, 1989 with representatives of three different countries and also with a new name for the English speaking world: *Knowledge Organization*.

Research and publications in KO *obviously address a wide variety of topics and approaches, including theories,* KO *systems, technical issues of digital representation, data sharing and practical applications. In general, do you find that they are being focused on the right direction, or is there any important aspect that is being neglected too much in these years?*

This is again a very good question. Indeed I see really neglected the absolutely necessary establishment of a new order of the vast growth of our present knowledge. We lost the survey indeed: not only we in our field but the society at large does not recognize the need for it and for the necessary activities for its realization. Every establishment works only for itself and tries at least to establish a so called ontology but does not see the need for cooperation in preserving in suitable systems what is known in terms of concepts, and to establish useful general conceptual ordering systems. And the representatives of the Semantic Web are absolutely helpless to take care of the mass of terms they accumulated without any order. Of course, the existing library classification systems try to update their files, but their structures are outmoded and don't allow short notations for e.g. the plentitude of technical innovations. Therefore ISKO should strive to get governments to understand this lack of initiatives in what may be called science politics, recognizing the necessity of establishing university chairs for the pertinent organization of knowledge and the creation of national and international cooperative agencies to elaborate a new universal system, like the Information Coding Classification (ICC) which covers all knowledge fields and which is based on theories and principles.

What does the current emphasis on digital information, linked data, etc. mean to KO? *To use McLuhan's terms, does the medium really affect the message of our research field?*

The fact that an unsurveyable plentitude of data exist and linking them here and there has already started, there is hope that an understanding arises that methods are needed to accomplish this in the best way whatsoever. Here again I would like to refer to the ICC with its nine ontical levels and its nine categorial subdivisions coded by the easiest international language, namely numbers, which designate 9x9 subject areas, and its 729 subdivisions and still many more subdivisions thereof up to some 6500 subject fields, however not as yet their necessary components but all of them with definitions from encyclopedias or competent professors. Thus every subject field has its own number and is placed at its categorial position, so that retrieving the concepts of such a field is mnemotechnically based when knowing the element position plan established for this universal classification system.

The message therefore of our field: Look, here are the methods and there is even a system that will help to solve your problem. Therefore: Understand and prepare your capacities to make use of it!

What do you wish for the future of knowledge organization?

I would like to see understanding in the heads of governments for the need to establish the necessary order of our knowledge units in all subject fields existing. For this I propose that an international or European academy should be installed where first of all teachers should be trained in our field and in working with the ICC and its theories and principles mentioned. After a certain number of such teachers exist they should be given the opportunity to establish and head their own academy in different countries and collaborate with the others in updating and filling the ICC with the necessary subdivisions and concepts, in order that very soon a new universal classification system can be established which will also be able to serve as a switching system to combine the existing universal systems with each other, and thus relate the already existing literature to the new one, to be classed furtheron by the ICC.