Brief Communication:

How to Improve ISKO's Standing: Ten Desiderata for Knowledge Organization*

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Ingetraut Dahlberg started work on thesauri and classification in the early sixties. She developed her concept theory in 1972 together with her work on the establishment of a universal classification system of knowledge fields, the Information Coding Classification, published in 1982. In 1974 she founded the journal *International Classification,* now known as *Knowledge Organization*, and was its editor for 23 years. She founded also the German Society for Classification in 1977 and chaired it until 1986. In 1989 the International Society for Knowledge Organization was founded with her as president until 1996. In 1980 she founded the INDEKS Verlag, which was taken over by Ergon Verlag in 1997.

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ABSTRACT: In 2009 ISKO had its 20th anniversary, a time for review and reflection on what might be envisaged to further Knowledge Organization in the forthcoming years. In addition to some proposals set forth at the end of this contribution, ten desiderata appear urgent. A preliminary condition to any other consideration is the recognition of the fundamental difference in the organization of knowledge between the concept (i.e., the unit of knowledge)—the conceptual level—and the word, term or code—the verbal level—and the need for implementing this distinction in theory and practice (Desideratum 1). On this basis, some further proposals are enunciated. The 2nd proposition concerns the surveying of extant classification systems, thesauri, and other means of organizing, ordering, and indexing knowledge; the 3rd proposition envisages the improvement of expert training in Knowledge Organization (KO), also with regard to curricula and professional acknowledgment. Nr.4) refers to the professionalization of the hitherto rather neglected national ISKO secretariats, as well as the international ISKO secretariat. Nr.5) urges a systematic survey of KO-relevant concepts to serve as a model or standard for other subject fields, Nr.6) claims the establishment of KO Institutes, Nr.7) views consultancy to the effect that anybody interested in KO may approach ISKO for help, Nr 8) urges ISKO's promotion of membership and chapters in as many countries as possible, Nr.9) presses for intensification of ISKO's publication activities, and Nr.10) pleads for KO as a scientific discipline on its own.

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0.0 Introductory remarks

On July 22, 2009, ISKO had its 20th anniversary. Much, very much has been achieved during these 20 years by its members. A detailed testimony of this is given in a long article on ISKO, published in the *Encyclopedia of Library and Information Sciences*, Vol. 3 (Dahlberg 2010). Knowledge Organization (KO) has developed during these 20 years into a full-fledged science as appears from the excellent collection of contributions in the ISKO journal *Knowledge Organization* 35 No.2/3 (2008) on the topic: "What is Knowledge Organization?" Profs. Ia McIlwaine, London, and Joan Mitchell, Dublin, Ohio, acting as guest editors (McIlwaine and Mitchell 2008). This achievement is also evident from the wide range of research work published in *Knowledge Organization*, as well as in the proceedings volumes of the international and national ISKO Conferences. But there is still room for development.

We wish to take the opportunity of reconsidering ISKO's evolution thus far and look for areas of improvements. Some of what had been aimed at in the beginning is still waiting to be recognized and pursued accordingly. Other aspects, not having as yet been considered, would seem to be rewarding in order to improve the present performance. The following 10 desiderata are offered for reflection. We plead that they may not be discarded on the ground of being "too far from reality", but that they may be found worthwhile and subsequently acted upon.

1.0 The science-theoretical foundation of knowledge organization

In the learned contribution of J. T. Tennis (Tennis 2008) we find the following statement: "In Knowledge Organization we are concerned with assumptions about language and how we can work with it in harmony with our conceptions of reality, how we know it and what it means". By this statement, Mr. Tennis bases KO essentially on language, resp. its units, words. B. Hjørland argued similarly in his long article on Concept Theory (Hjørland 2009), following many others, by regarding the concept, in the linguistic sense, as "the meaning of a word". Against this view I must underline that KO deals with language only incidentally as it primarily deals with concepts representing Knowledge Units. I have always defined such units in the following way:

> A Knowledge Unit (concept) is the synthesis of the essential characteristics of a referent to be represented by designations (terms, names, codes).

It might be considered necessary to add to this definition also those for concepts of characteristics (i.e., knowledge elements), "category" or "concept relationships," etc., as I had pointed out in my paper on "Concepts and Terms" (Dahlberg 2009) and in many other contributions (Dahlberg 1974, 1978, 1981, 1987). A concept definition is hence the shortest possible form of summing up "essential characteristics". In as far as we are concerned with concepts as defined above, we stand already with one foot in the so-called Theory of Science, which is still a sub-discipline of Philosophy in our universities.

In order to clarify our concepts, we must, in each case, analyse carefully the referent in question to include its essential characteristics as these take care of the relationships between concepts, also indicating the next higher level and thus assist in ranking them within their pertaining hierarchy. Obviously, if two different concepts share the same or similar essential characteristics, this indicates a relationship between them.

Desideratum No. 1: Recognize the units in an order system (classification system, thesaurus, ontology, etc.) as concepts/knowledge units, analyse their essential characteristics, and use these characteristics when creating a Knowledge Order System.

2.0 Need for surveys

In vol. 1 of the *International Classification and Indexing Bibliography* (ICIB 1), all universal and special classification systems and thesauri were listed for the years 1952-1982. A continuation of this huge collection can be found in the section *Classification/Knowledge Organization Literature* of ISKO's quarterly, *Knowledge Organization.* It cannot be guaranteed, however, that all relevant systems could be listed. It seems therefore highly advisable for each country to probe for an updated survey for the 30 years which have lapsed since; a summary of the results of these surveys could become a project of ISKO. For this, one would need to contact libraries, documentation and information centers, archives, museums, terminology centers, editorial offices of certain publishers, television companies, and the like. Thereby it will also be possible to get into contact with the persons in charge of these systems.

Desideratum No. 2: Establishment of country surveys of order systems to identify their main respective scope, as well as their preferred kind. Also, summaries of the results of these surveys by ISKO.

3.0 Educational questions in knowledge organization

Training in classification, thesauri and ontologies in Europe is mainly dispensed at Polytechnical Schools under Library and Information Science. An ISKO group or an ISKO Project Manager might take care of collecting their curricula, compare them with regard to KO and survey the findings for different countries, in order to reach conclusions on training curricula and expert level of awardees. On the basis of those results, it may be possible, on the one hand, to formulate proposals for improvement, and, on the other, to evaluate chances to recruit for KO future

experts among these awardees. An ISKO Committee for Training should elaborate a schedule of qualifications and awards for KO expertise.

Desiratum No. 3 covers two proposals: 1) An ISKO group should elaborate a curriculum for the various KO activities to be published after approval by the ISKO Executive Board (EB). Together with this, the qualifying titles of different professionals (teacher, professor, system designer etc.) should also be discussed by the ISKO EB, adopted and proposed for acknowledgement by official institutions; and, 2) It may be possible for ISKO to establish its own Academy and also take care of teaching with the elaborated curricula.

4.0 Establishment of national secretariats, as well as the international secretariat

Each country with an ISKO Chapter organizing national conferences biannually should have—in addition to the elected chairperson—a paid expert for all organizational matters in relation to the proposals made here. The ISKO Secretary General also needs additional experts in order to coordinate all activities more effectively. Financial help for this could be applied for in Europe with the European Union; other countries would have to turn to their governmental agencies or research institutions. The results of Desiderata 2 and 3 may evidence abundance or missing uniformity of data, precluding intelligent communication among colleagues and hence the need for further work on clarification and updating. Variation may be a positive factor, however, if it occurs only for lack of knowing better, it will turn out wasteful and irrational.

Desideratum No. 4: Every national ISKO Chapter and the General Secretariat should make efforts to employ a paid expert for the necessary secretarial work, and seek financial support therefore from national or international organizations, in order to become more professionalised.

5.0 Establishing knowledge order systems

Once Desideratum No.1 is recognized as the fundamental difference to the existing language orientation, it should be understood by ISKO's KO experts and by the creators of order systems, to base any work on analyzed and defined concepts and their acknowledged terms. There are many concepts which possess a multitude of terms, which means their terms are synonyms of a concept with the same definition. They should all be listed. However, if two equally sounding terms have different definitions—the case of homonymity—different concepts are at stake which need suitable verbal distinctions. In each scientific domain, indeed in each subject field, its representatives and professionals who should know its concepts, should be able to recognize on the basis of respective definitions and the necessary analytical identification of concept characteristics, the systematic relationships by comparison of characteristics and should also be able to demonstrate this accordingly. In the paper mentioned (Dahlberg 2008), I outlined and proposed this necessary work for the scientific discipline of KO itself as a task for ISKO. If this work can be accomplished, the result could serve as a model for other sciences and subject fields.

Desideratum No. 5: The ISKO Executive Board should decide to elaborate and publish an order system of all KO-relevant concepts to serve as a model and perhaps sometimes as a standard for similar work in other scientific disciplines and knowledge fields.

6.0 Establishment of knowledge organization institutes

The activities mentioned under Desideratum 5, which could serve as a model for other sciences and knowledge fields need an institutional framework. The ideal would be the establishment of autonomous Knowledge Organization Institutes. It was proposed that KO scientists should collaborate with subject experts from other fields and also with terminologists in elaborating, analyzing, and defining—according to Desideratum 1—the specific concepts of each discipline and subject field, including also the identification of obsolete terms. This will finally result in a new general Knowledge Order System. Such a general classification of concepts is missing so far—not only in Germany but also in Europe and world-wide—the result of such a collaboration would serve everybody and could become an essential help for all those who are teaching (in schools, universities, etc.), who are working in the area of disciplinary or interdisciplinary communication (media), in translation, etc. Obviously, much work has been done in this respect at documentation centers and in translation departments (e.g., the EU), as well as by Infoterm in Vienna which can be relied on. Such work may also be performed at the proposed Academy as mentioned under Desi-

deratum 3. Results of this work could also serve KO experts in their possible research work.

Desideratum No. 6: Establishment of national Knowledge Organization Institutes should be scheduled by national chapters, planned energetically and submitted to corresponding administrative authorities for support. They could be attached to research institutions, e.g., the Max-Planck or Fraunhofer Institutes in Germany or to universities. Their scope and research areas relate to the elaboration of knowledge systems of subject related concepts, according to Desideratum 1, and may be connected to training activities and KO-subject-related research work.

7.0 Process- and product-orientation in knowledge organization

Special expert knowledge in KO has hitherto been too much ignored by technology, especially computer technology with the result that we have been confronted already for many years with the fact that computer scientists have discovered KO-knowledge, which they propagate under their own terms. Against this development, KO-experts should demonstrate their own expert knowledge and rub it in. Consultancy should be made available—on the one hand—at the national secretariats, according to Desideratum 4, and—on the other—at the KO Institutes. The elaborated standard knowledge systems (Desideratum 5) could serve therefore, as well as a reconsideration of "KO Recommendations" to be elaborated by ISKO Committees. Further publications of relevant textbooks in KO could also serve this purpose; thus far, only two have appeared (Fugmann 1993 and Iyer 1995).

Desideratum No. 7: ISKO experts should not accept to be impressed by Internet and Computer Science, but should demonstrate their expertise more actively on the public plane. They should tend to take a leading part in the ISKO Secretariats and the KO Institutes, and act as consultants and informants, as well as editors of statistics and other publications.

8.0 ISKO and global expansion

Although ISKO had started 1989 in Europe, its second international conference in 1992 took place in India. It was considered from the very beginning to implicate in the Society colleagues from as many countries as possible. Of course, the expenses for printing the ISKO journal, which had to be financed by membership fees, had to be taken into account. Up to the present time, ISKO still suffers from a shrinking membership since 1997, considering that members from countries with a low rate of exchange cannot be expected to pay the full fee. In the years before, they were allowed a much lesser fee, although it is to be mentioned as praise-worthy that in 2008 the membership for such countries was reduced by the ISKO EB, yet this has so far not raised the number of members in these countries, so that—to my knowledge—except for India, no other chapters have been reestablished. Also in ISKO News—a feature of our journal which had been given up for some time—nothing is being reported on developments in the KO-world. ISKO's website in all honour—but it is fleeting, the journal keeps instead the information on the Society and one has always access to it.

Desideratum No. 8: All colleagues trained in the field of classification/indexing and thesauri construction and active in different countries should be identified and approached for membership in ISKO. This would have to be accomplished by the General Secretariat with the collaboration of the experts in the different secretariats of the countries, as soon as they start to work. The more members ISKO will have, the greater will be its reputation and influence. But it will also prove its professionalism by the quality of its products, especially its innovating conceptual order systems to come.

9.0 ISKO's publication agenda

Three ISKO publications are available, namely 1) the ISKO quarterly, 2) the proceedings volumes of the international conferences (every even year), entitled *Advances in Knowledge Organization*, and 3) the biannual proceedings volumes of the national ISKO conferences, (appearing in odd years), so far in Germany, France, and Spain. Another kind of publication is the ISKO Website. The series of textbooks, mentioned above, could be taken up again, as well as the series of *Recommendations in KO* in English or in the languages of the national chapters. A further possibility of cumulated information on existing KO literature would be the printing of vols. 4 and 5 of the *International Classification and Indexing Bibliography* (ICIB) mentioned already, as well as additional volumes on extant order systems and relevant KO-literature after 1982. This is easily feasible since fortunately the bibliographical data of the section *Clas-*

sification/Knowledge Organization Literature in the ISKO journal is electronically available up to the latest issue of 2008. It has been continued since then and is now available for ISKO members on the ISKO Website.

Desideratum No. 9: ISKO should—especially in view of global expansion—intensify the promotion of knowledge about its own subject area through the publications mentioned here and in further publications as deemed necessary. It should be made clear that, especially in ISKO's own publications, professional subject indexes are a *sine qua non*.

10.0 Cooperation in knowledge organization

As it happened to "philosophy" of ancient times, many subject fields developed out of it in the course of centuries to the effect that "philosophy" finally became a scientific discipline of its own in early nineteenth century; it happened similarly in the thirties of the last century that documentation and information science developed out of library science and became disciplines on their own. And out of these three, "classification science" developed with the foundation of classification societies in England and Germany. However, in England classification science had its origin in mathematics, whereas in the German classification society, mathematics played only a minor part, which was to grow steadily during the years 1977-1989 so that in the end, half of the 200 members came from mathematics, the other half from library and information science. This was the moment when ISKO was founded as the international offspring of the latter half of the membership and as a continuation of the concept-oriented classification science, which then preferred the term "knowledge organization" in its name. Thus, we had first the founding of the international society and, later, the emergence of national chapters. Shortly after and in an analogous way to what happened to information science and information management, industry developed "knowledge management" for its own purposes. Unfortunately, this latter designation is now often mixed up with KO. And, finally, in the past years, yet another grouping appeared and assembled quickly a great number of adepts via the Internet under the name of "information architects". All those new groupings share an interest in structuring knowledge. But we should not forget the efforts made already in the 18th century by Buffon and Linné et al. to establish taxonomies for plants and animals, which are, however, purely object classification systems just as, in the years after the Second World War (WW2), classification systems for patents and products were conceived, as well as for war materials, product statistics, and even statistics for university subjects. Since the early thirties, a further area of interest arose which also needed classification and which, however, was concept-oriented (and hence analytical) from the very beginning: it was in the field of terminology, initiated by the Austrian Eugen Wüster with his famous book (Wüster 1931, 2.1966), followed by the first DIN Standards on Terminology, drawn up mainly by him. His school of thought established Terminology Science in Vienna and, under his followers, Infoterm (mentioned already) was founded. In all these areas, as well as, of course, on the Internet, concept-oriented order systems are necessary, which can be established, according to the principles outlined already by the Indian S. R. Ranganathan in his *Colon Classification* (Ranganathan 1933, 6th ed. 1964) and in his textbook *Prolegomena to Library Classification* (Ranganathan 1936, 3rd ed. repr. 1967). His way of thought and the development of his faceted classification system did not only show his mathematical background as a combination of structures, but also his pragmatism as he built into his order system psychologically important mnemotechnical features. After WW2, it was on his ideas that the British authors D. C. Foskett, B. Vickery and D. Langridge based their faceted classification systems and described them in their books on special subject areas (Foskett 1953, Vickery 1958, Langridge 1976). This faceted approach has also been my own since 1970 which was published in *Grundlagen universaler Wissensordnung* (Foundations of a universal order of knowledge, Dahlberg 1974), more precisely worked out in later contributions. It was on this basis that the *Information Coding Classification* (ICC) was developed in 1977 (Dahlberg 1982) as a universal system of knowledge fields with its mnemotechnical "Systematifier," which among other things, takes care of system positions indicating interdisciplinary and transdisciplinary relationships between different knowledge fields.

Desideratum No. 10 covers again two proposals: 1) Knowledge Organization, having arisen from librarianship and documentation, the contents of which has many points of contact with numerous application fields, should—although still linked up with its areas of descent—be recognized in the long run as an independent autonomous discipline to be located under

the science of science, since only thereby can it fully play its role as an equal partner in all application fields; and, 2) An "at-a-first-glance knowledge order" could be implemented through the *Information Coding Classification* (ICC), as this system is based on an entirely new approach, namely based on general object areas, thus deviating from discipline-oriented main classes of the current main universal classification systems. It can therefore recoup by simple display on screen the hitherto lost overview of all knowledge areas and fields. On "one look", one perceives 9 object areas subdivided into 9 aspects which break down into 81 subject areas with their 729 subject fields, including further special fields. The synthesis and place of order of all knowledge becomes thus evident at a glance to everybody. Nobody would any longer be irritated by the abundance of singular apparently unrelated knowledge fields or become hesitant in his/her understanding of the world.

11.0 Final remarks

By no means do these 10 Desiderata provide for all that could be wished ISKO for the future. In any case, it should be possible to enlarge the membership month by month. The acknowledgment of Unesco should also be sought and all members should receive leaflets about ISKO, as this was the case in ISKO's first years, so that members will have something at hand for distribution to colleagues, thus promoting ISKO. The special ISKO Committees which had been established at ISKO's beginning, could also be taken up again. Their members would not need to meet personally but could discuss problems via the Internet.

Now, what may be the eventual outcome of these 10 Desiderata? Many of the term-oriented people will presumably say, "This is really not necessary; we have the Internet, where we can find what we are looking for." Well, this is about the same as if one looked into a traditional encyclopedia, one will always only find the single object or item, not the item in its context with all its relations, its natural environment. And what will happen if the Internet collapses, and the satellites don't work any longer? Others might argue: "Well, this is all very nice, but where to find the money to implement these wonderful ideas?" All right. But if we envisage the probable results of these efforts (i.e., the representation of human knowledge by optimal, easily understandable concepts in their natural environment, namely in their relevant relationships based on their characteristics and presenting to everybody a clear and significant order), it appears that the necessary costs are well spent in comparison with many other expenses for culture and research, for this investment will also serve the mutual understanding of people of different countries. To achieve this, it will, of course, be necessary for our KO-experts to get going and make themselves perceptible. The money will become available if concrete, well-founded projects for the tasks outlined are submitted to national or international funding agencies. To adopt these proposals supposes surely hard work and a lot of courage, but it will enhance ISKO's future. I am sure that we will get what we want, if we are determined and do our best: all that matters is our good will!

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