Ingetraut Dahlberg (1927-2017)†

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H. Peter Ohly is a sociologist from Cologne, who worked in the field of information and documentation until his retirement in 2010. In 1978, he became part of the scientific staff of the Information Center for the Social Sciences in Bonn, later incorporated into the GESIS Leibniz Institute for the Social Sciences in Cologne. From 1999-2009 he was president of the German ISKO, from 2006-2010 he was secretary/treasurer, and from 2010-2014 he was the president of ISKO.

Ohly, Peter. 2020. "Ingetraut Dahlberg (1927-2017)." *Knowledge Organization* 47(2): 173-182. DOI:10.5771/0943-7444-2020-2-173.

Abstract: Dr. Ingetraut Dahlberg essentially introduced and shaped the term "knowledge organization." She also was the main engine in the founding of the scientific associations *Society for Classification* and *International Society for Knowledge Organization* as well as the journals *International Classification* and *Knowledge Organization*. In 2017, Ingetraut Dahlberg died at the age of ninety years. Some life data and scientific contributions are presented here.

Received: 31 May 2019; Accepted: 3 June 2019

Keywords: knowledge organization, Dahlberg, classification, concepts, conceptual systems, ISKO

† Derived from the article of similar title in the ISKO Encyclopedia of Knowledge Organization, Version 1.3 (= 1.0 + substantial integrations to bibliography by BH and link to ICC schedules); version 1.0 published 2018-07-03, this version 2018-11-29. Article category: Biographical articles. A German version has been published by Ohly (2018).

Dr. Ingetraut Dahlberg, 19th May 2014 in Krakow at the 13th international ISKO conference (photo by Peter Ohly).

1.0 Vita

Dr. Ingetraut Dahlberg was born on February 20, 1927 in Cologne as Ingetraut Gessler. She died on October 24, 2017 in Bad König, Odenwald. Her father, Theodor Gessler, came from Wesel, Lower Rhine and had studied economics in Cologne. Her mother, Luzie, née Sauvageot, was from Cologne. The family moved to Frankfurt where Ingetraut Gessler grew up with her brother and sister. From 1955-1956 she was married to Reinhard Dahlberg, the later protagonist of the hydrogen transformation. Her son Wolfgang Dahlberg was born in 1955. He was the author of many books, such as *Ordnung, Sein und Bewußtsein* (Order, Being, and Consciousness) in 1984, and died in 2012.

1.1 Studies and career (1948-61)

Ingetraut Gessler studied philosophy, Catholic theology and English and occasionally biology in Frankfurt and Würzburg. In 1948/49 she spent one academic year in the United States at Mary Manse College in Toledo, Ohio. In 1959, Ingetraut Dahlberg came to the Gmelin Institute for Inorganic Chemistry, Frankfurt, whose director Erich Pietsch was president of the German Association for Documentation (DGD) at that time. Here she edited bibliographies for Atomic Energy Documentation (AED). In

1961, she joined the Rationalisierungs-Kuratorium der Deutschen Wirtschaft (RKW—Rationalization Curatorship of the German Business).

1.2 Documentary orientation (1962-65)

Ingetraut Dahlberg began with a training as a scientific documentarian in 1962 and worked in 1963 at the German Association for Documentation on the recording of library stocks and a documentation of literature on documentation including thesaurus creation. Later she became head of the Library and Documentation Center of DGD-. From 1964 to 1965, she was a resident of the Groth Institute for Crystallographic Data Documentation and the University Library of Florida Atlantic University, Boca Raton. Here she collaborated with Jean Perreault (known for his term relations, cf. Perreault 1994).

1.3 Work in association and commissioned work (1966-83)

With Martin Scheele (chair) she (secretariat) founded in 1966 the DGD committee Thesaurus Research and Classification. Later, this committee resulted in the publication of Dagobert Soergel's *Indexing Languages and Thesauri: Construction and Maintenance* (Dahlberg 1975). Furthermore, a descriptor system for information science was created here. From 1967 to 1969, Ingetraut Dahlberg was chair of the FID Revision Committee for the Universal Decimal Classification UDC-03/04 (Common Auxiliaries of Materials and Common Auxiliaries of Relations, Processes and Operations). This resulted in a classification of the document types and their special aspects as well as a proposal for the revision of the UDC. From 1967 to 1974, Ingetraut Dahlberg led in the DIN Standards Committee Terminology the revision of DIN 2330 *Concepts and terms—General principles*, of DIN 2331 *Systems of Concepts and their Presentation*, and of DIN 32705 *Classification Systems; Establishment and Development of Classification Systems*. At the International Organization for Standardization, she worked on ISO/TC 37 *Terminology and other Languages and Content Resources* and ISO/TC 46 *Information and Documentation*. In 1970, she was a member of the *Working Group on Indexing and Classification* in the framework of UNISIST (*UNESCO Intergovernmental Program for Co-operation in the Field of Scientific and Technical Information = World Science Information System*, chaired by Douglas John Foskett) and in 1971 on the advisory board *Database System* for the Federal Republic of Germany of the Ministry of the Interior of the Federal Government. In 1972-1973, Ingetraut Dahlberg had a DGD project assignment for the collection of the names of fields of knowledge. From 1972-1974 she worked in the *Subject-Field Reference Code Panel* of FID/CR on the creation of the UNISIST—*Broad System of Ordering* (BSO). From 1978-1979, she investigated the thesaurus abilities of keywords in the pilot study *DB-Thesaurus*. From 1979, she also served on the *Committee on Conceptual and Terminological Analysis* (COCTA) (founded by Fred W. Riggs, Giovanni Sartori) of the *International Political Science Association* (IPSA) and the *International Sociological Association* (ISA). In 1981, she conducted a COCTA conference in Bielefeld. From 1981-1987 she chaired the *FID Committee on Classification Research* (FID/CR). In 1983, she published the expert documentation *Who Is Who in Classification and Indexing*.

1.4 Doctorate (1973)

In 1973, she received her doctorate from Alwin Diemer, Düsseldorf in the field of Philosophy with the minor subjects general linguistics and history of science. Her dissertation *Das Universale Klassifikationssystem des Wissens, seine ontologischen, wissenschaftstheoretischen und informationstheoretischen Grundlagen* (The Universal Classification System of Knowledge, its ontological, scientific-theoretical and information-theoretical foundations) was published in 1974 as *Grundlagen universaler Wissensordnung* (A Foundation of Universal Knowledge Order) by the publishing house Verlag Dokumentation (today: De Gruyter) (Dahlberg 1974). Here she examines various universal classification concepts (including *DDC*, UDC, *LCC*, Colon Classification) and problems of universal classification systems and makes suggestions for a new universal classification system.

1.5 Teaching and research

From 1976-1979, she carried out the DFG project Logstruktur at the University of Mainz, in which substantive, term independent relationships between knowledge areas were investigated. In 1977, she developed from the findings of her dissertation the *Information Coding Classification* (ICC), a faceted universal classification system of knowledge fields with approximately 6,500 concepts. This was followed by executive workshops at the *Documentation Research and Training Center* (DRTC) in Bangalore. She had professorial representations 1984/85 at the University of Saarbrücken and 1985-1987 at the University of Applied Science Hannover and 1988/89 at the University of Applied Science Darmstadt.

1.6 Publishing activity/founding of associations

With Alwin Diemer, Jean M. Perreault, Arashanipalai Neelameghan and Eugen Wuester, she founded in 1974 the journal *International Classification* IC (1993 renamed *Knowledge Organization* KO). In issue IC-1994-1, her contribution *Zur Theorie des Begriffs* (Towards a Theory of the Concept) ap-

peared, in which concept formation, conceptual systems and conceptual types are discussed. In 1979, she founded with her son Wolfgang the company INDEKS for the creation of registers and classification systems and eventually became the INDEKS publishing house.

Ingetraut Dahlberg founded in 1977 with Robert Fugmann, Martin Scheele, Hanns-Hermann Bock and others the German *Gesellschaft für Klassifikation* (Society for Classification; first abbreviated as GFK, starting from 1979 as GfKl). She had her first conference in Münster in 1977. In 1989, when in the GfKl the Numerical Taxonomy and Data Analysis became dominant, she founded with Robert Fugmann, Padmini Raj, Rudolf Ungvary and others, the *International Society for Knowledge Organization* (ISKO) with more conceptual orientation. This association had its first meeting in 1990 in Darmstadt. Its communication media was the journal *International Classification* IC, respectively its successor journal *Knowledge Organization* KO.

Around 1997, major changes took place, not least because of a cancer diagnosis. The INDEKS publishing house went over to the Ergon publishing house. She handed over the editor-in-chief of the *Knowledge Organization* magazine (first successor 1997-1998: Charles Gilreath, The Texas A&M University System). The new president of ISKO 1996-1998 became Hanne Albrechtsen, Royal School of Librarianship, Copenhagen. Her extensive library for classification, terminology and information science went to the Maastricht McLuhan Institute (MMI), European Center for Digital Culture, Knowledge Organization and Learning Technology (Director: Kim Veltman), but had to be taken back later and is now residing at Ernesto de Luca, Georg Eckert Institute—Leibniz-Institut für internationale Schulbuchforschung (for International Textbook Research), Braunschweig.

1.7 Publications

Ingetraut Dahlberg has released a variety of publications, so at the end of November 2017 in Google 13,300 are listed in connotation with her name. The article in Wikipedia about her mentions 300 publications, and an ASIS Persons Documentation of 2014 lists 337 references (ASIS&T 2014). In addition to the interviews with her, 2008 in *Knowledge Organization* 35 (Feature: Interview with Ingetraut Dahlberg, No.2-3, p.82-85), 2012 for ASIS & T (Romen, 2012), 2015 with Claudio Gnoli (A place for each toy, AIDAinformazioni, 207-211) the following lectures or publications have to be emphasized for the last years:

– Talk on German ISKO conference 2009: "Desiderate für die Wissensorganisation" (Dahlberg 2013)/"How to improve ISKO's standing: ten desiderata for knowledge organization" (Dahlberg 2011)
– Talk on German ISKO conference 2013: "Was ist Wissensorganisation?" (Dahlberg 2017)/"Brief communication: What is knowledge organization" (Dahlberg 2014b)
– Book 2014: "Wissensorganisation: Entwicklung, Aufgabe, Anwendung, Zukunft" (Dahlberg 2014a)
– Talks on workshops 2016: 88. Ernst-Schröder-Seminar, Darmstadt 2015, and Dagstuhl Workshop *Book Project "Corporate Semantic Web,"* Wadern 2016: "Warum Universalklassifikation?" (Why universal classification?)
– Article in the journal *Information—Wissenschaft & Praxis* 2016: "Dokumentenkunde—Dokumentologie: damals —und heute?" (Documentary science—documentology: then—and today) (Dahlberg 2016)

1.8 Honors

Together with S. D. Boon, Eindhoven, Ingetraut Dahlberg was awarded the prize of the *International Association of Documentalists and Information Officers*, Paris (A.I.D.) in 1965. In 1996, she received the *International Ranganathan Award* for fundamental work in classification research. In the *German ISKO* and then in the international ISKO, she became an honorary member around 2000. In 2006, she was awarded the *Eugen Wüster Special Prize* of the *International Information Center for Terminology*, Vienna (Infoterm).

2.0 The field knowledge organization

Following Bliss's "organization of knowledge," Dahlberg and the other co-founders of ISKO created the term "knowledge organization," which was quickly adopted by the scientific community for an area that was formerly called "Theory of Ordering/Ordnungslehre" or "Classification." According to Dahlberg, knowledge organization is the science of the structuring and systematic arrangement of knowledge units (concepts) according to their inherent knowledge elements (characteristics) and the application of the so ordered concepts and classes of concepts for the description of worth knowing contents of objects of any kind (see Dahlberg 2006). Specifically, Dahlberg (1998) understands the organization of knowledge as a subject area that deals with the order of

a) knowledge units (terms) and
b) objects of all kinds (minerals, plants, animals, documents, pictures, museum objects, etc.) are concerned, which are related to corresponding terms or conceptual classes, in order to hold the knowledge about the world of the known and to pass it on for usage.

According to her, knowledge organization comprises the following nine subareas (1998, see 2017, or the English version 2014a):

1. the epistemological, mathematical, system-theoretical, cognitive-science oriented and science-theoretical presuppositions of the order of concepts as well as their historical background,
2. the knowledge of the elements and structures of conceptual systems,
3. the methodology of intellectual creation, maintenance and revision of these systems and their computerization, including questions of the paradigmatic and syntagmatic relation of their elements and units, as well as the compatibilization and evaluation of these systems,
4. the methodology of intellectual and machine-oriented application of these systems by classification and indexing,
5. the knowledge of the existing universal and
6. the special taxonomies and classification systems as well as the documentation languages (thesauri),
7. the questions arising from the influencing areas, linguistics (~ mathematical linguistics) and terminology, including the problems of retrieval, especially in online access,
8. the applications of content indexing of all types of documents and in all subject areas,
9. the whole environment of the organization of knowledge in the workplace, in individual centers, societies, countries and internationally, as well as the questions of education, economics, users, etc.

Later, Dahlberg noted in a discussion list:[1] "The concept of 'organization' however, in its acceptation in German has a wider range than just 'order,' namely 'planned construction,' 'structure,' 'forming' (Wahrig 1975 [Remark: Wahrig, Gerhard: Wörterbuch der deutschen Sprache]), although this does not apply to some other languages where 'organization' is only used for collectivities like associations or unions, so that in such cases, 'organization' can only be related to people, not to objects." It should be noted that this was also misunderstood as "knowledge in organizations," which is more akin to knowledge management and less intended by Dahlberg.

3.0 The analytic, object-related conceptual theory

With reference to Frege (1969; Dahlberg 2014a, 36), Dahlberg attributed the extraction of knowledge units to a conceptual theory (German: Begriffe) (Dahlberg 1974a, 1979, 1987, 2009). According to her, concepts are the essential elements of any order of knowledge from which the classes are formed. In contrast, the linguistic aspect prevents the analytic aspect of concept formation and conceptual knowledge (e.g., in Dahlberg 2017, 13): "A concept is a unit of knowledge that is made by making substantial and verifiable statements about a reference object that summarize them in a short and descriptive denomination (name or code) for the purpose of communicability" (Dahlberg 2014a, 37ff).

Since the feature set of a concept is obtained in an analyzing way by means of individual predications about a reference object, she, therefore, also speaks of an "object-related, analytic concept theory." Denominations (name or code) should take into account the essential features obtained in order to convey by the usage of the concept mnemonic and clarity, but which should also be as short and memorable as possible in order to be accepted in the linguistic process. The relation between meant object, the characteristics and the designations can be seen as a conceptual triangle. The determination of the necessary characteristics, which are called by her as knowledge elements, together form the knowledge unit, which is a concept-constituting process with the possible consequence that concepts with the same or similar characteristics are led conjoined into a class (concept construction). A classification system based on these principles is then a definition system that explains itself.

The concept reconstruction is based on the language usage, from which can be read off then, what may have been the reference object of the naming and which are the characteristics of this reference object, which may reveal polysemous terms. Relations between concepts are identifiable and representable if based on the characteristics of the concepts. Dahlberg formally differentiates between logical (e.g., inclusion), form-categorical (e.g., facets), and material or substantive main types of conceptual relationships. The latter are formed by the abstraction relation, partition relation and whole-part relation, which form a hierarchy. The functional, grammatical or syntax relation appears in the breakdown of a subject area. The complementary relation finds application in the juxtaposition of objects and/or their properties (here she refers to Diemer 1969).

4.0 Clarification of the term "classification"

Since the term "classification" occurs colloquially and technical polysem, Dahlberg clarifies the various meanings by more succinct terms (Dahlberg 2014a, 58):

- Classification: a classification system
- Classify (Klassifizieren): forming classes of concepts according to common features (often confused with "classing" in colloquial language)
- Classificat: the total of classes as a result of classifying
- Classing (Klassieren): assigning classes to objects
- Classat: the product of the assignment of classes to objects and topics
- Classification science (or Knowledge Organization): the teaching on the classification systems, their theory

and history, their practice in the formation of classification systems, i.e., the formation of classes but also the application in the assignment of classes to objects.
– Class: the set of (class) elements summarized by a common ("classificatory") characteristic, called "classem."
– Classem: the common characteristic that merges class members into a class.
– Class elements: notions for objects or abstracta, not the ideas, objects, topics themselves.

5.0 The Information Coding Classification (ICC)

In 1982, Dahlberg described the Information Coding Classification (ICC) developed among others in the DGD project "Ordnungssystem der Wissensgebiete" and the DFG project "Logstruktur" in *International Classification* with a three-level hierarchy (Dahlberg 1982). This classification should have the merits of universality, faceting, and top-down approach. It was later also applied to the International Classification and Indexing Bibliography (ICIB) and the bibliography in the *KO* journal. In its main classes, it does not start from disciplines, but from nine ontic stages of development, the layers of being. It subdivides these roughly and in the other hierarchical levels also finely into nine categories, which also allows decimal coding. The locations for the knowledge areas have been determined by an element position plan (Elementstellenplan) so that the first hierarchy level is subdivided into nine layers (object areas as property categories) and the second hierarchy level is structured according to nine functionally oriented form categories. The third and fourth of subordinate fields of knowledge, as well as the fifth and sixth levels, are arranged according to the same subject and form categories. This makes it possible to always access the same categories with the digits of the numerical coding of a particular knowledge field, which reinforces the mnemonics of the system and also takes into account the localization of interdisciplinarity and transdisciplinarity. The responsibility for the ICC was transferred in 2015 by Dahlberg to the German Chapter of ISKO. Based on the results of the dissertation of 1972, she applied twelve principles concerning the theoretical foundations and the framework and arrangement of the found fields of knowledge (Dahlberg 2014a, 100-6).

6.0 The principles of the ICC

– Principle # 1: The contents of the ICC are concepts and classes of concepts.
– Principle # 2: Systematic conceptual relationships are understood as:
  – 1. Abstraction relation (genus-species relationship)
  – 2. Partitive relation
  – 3. Complementary relation and
  – 4. Functional relation.
– Principle # 3: The ICC uses the decimal principle in the arrangement of its main classes and of the aspects under which these main classes can be subdivided, that is, it starts from nine object areas, which are divided into nine aspect areas. Each of the eighty-one subject groups thus created is subdivided into nine subject areas according to the aspects mentioned above.
– Principle # 4: The main classes are object areas of being, i.e., ontic units, which can be bundled into three areas:
  – 1 shapes and structures
  – 2 energy and matter of inanimate being
  – 3 cosmos and earth
  – 4 organic area
  – 5 human-sphere animated being
  – 6 social area
  – 7 Economics and technology
  – 8 Science and information products of human activity
  – 9 cultural area
– Principle # 5: The subdivision of the object areas and the subject groups is done according to a system position plan, called "systematifier," whereby the first three aspects are the constituent ones of a subject group or a subject area, the second three contain the so-called characteristics and the third three the relations to contents of "outside" a subject group or subject area:
  – 1 General statements, theories, principles (axiomatic and structural relationship)
  – 2 Object area: Items, types, parts, properties (object relationship)
  – 3 Activity area, methods, processes, activities, (activity relationship)
  – 4 A special property or characteristic of a subject group
  – 5 Personal-relationship or even characteristic of a subject group
  – 6 Societal relationship to or even characteristic of a subject group
  – 7 External influences on area (Instrumental relationship)
  – 8 Applications of the methods in other subject groups (resource relationship)
  – 9 Information on the area and synthesizing societal tasks (actualization relationship)

These nine aspects are also used accordingly in the subdivision of subject groups in subject areas. The application of this principle in the subject groups and subject areas makes it possible to access particular aspects by searching always with the same digits of the notation when.

- Principle # 6: The arrangement of the ontic object areas of 1-9 is a layered model that corresponds to the view of layers of reality ("integration levels") that cause each other, as J.K. Feibleman (1954) and Nicolai Hartmann have explained and even asserted by laws (1964). Thus, e.g., layer 1 is the prerequisite for layer 2, and so on. It was also payed attention that, quasi, each group of subjects is a prerequisite for the following.
- Principle # 7: The system position plan (or system identifier) mentioned under principle # 5 also involves the possibility of relationships between the subject groups and subject areas in the following places: 1 – "General statements" and, 8 – " Applications," 9 – "Knowledge transfer."
- Principle # 8: In the grid pattern of the ICC, again a layer 0 is above layer 1. Its possible facet classification is still waiting to be realized. Otherwise, the layer 01 to 09 contains the denominations for the aspects. (Dahlberg 1978)
- Principles # 9 and # 10 concern the possible and necessary combination of subject groups and subject concepts with concepts of space and time.
- Principle # 11: A mnemotechnique in the system. By finding principles that make the system directly obvious and have a control system with mnemonic properties, i.e., the ability to remember easily the contents of system positions.
- Principle # 12: In summary, it can be pointed out that the combination possibilities mentioned under principles seven, eight and nine make the system self-cross-linking, with which an infinite number of combinations is possible.

7.0 On "conceptual culture" in the social sciences

In 1996, in the journal *Ethik und Sozialwissenschaften*, a main article by Dahlberg (1996a) "Zur Begriffskultur in den Sozialwissenschaften: Lassen sich ihre Probleme lösen" ("On 'Conceptual Culture' in the Social Sciences: Are the Problems Solvable") made the following points (here translated from German):

- "Conceptualisation" from a psychological and linguistic perspective: a plea for vagueness and plurality.
- The council of lexicographers: Can the ambiguity of social science "concepts" be resolved?
- But the concepts, they are not like that
- Scientific concept formation and the problem of inductive ambiguity
- The concept of "conceptual culture" from a constructivist perspective
- Conceptual theory: Basis of a theory of documentation languages—basis for the explanation of cognitive information processing,
- Concepts, conceptions and examples, conceptual culture as order?
- An analytic concept theory?
- Do we need a conceptual cultural DIN committee?
- Conceptual culture vs. term association: Against information science problem solving by social science language regulation
- Order and truthfulness versus reality adequacy and progress of knowledge? Social scientific conceptual culture between Szylla and Charybdis
- Technically operational versus reflexive philosophical thinking
- Conceptual culture as charity? Benefit and relevance of classifications
- A letter
- The role of theory and formalization in conceptualization
- Can equal opportunities be normalized by concepts?
- Disambiguation as a metatheoretical problem
- Puritanism of knowledge
- stability and variability of conceptual systems
- "Conceptual culture"—or an example of how not to do it
- From the "chaos of thinking organization" to an "ethics of static conceptual systems"
- Remarks on conceptual theory and conceptual ethics
- Problem culture in the social sciences,
- The problem of scientific definitions
- Order as knowledge?

This article was debated in the same issue by Becker and Reiss (1996), Bühl (1996), Dreier (1996), Dürr (1996), Eckes (1996), Friedlmeier (1996), Gödert (1996), Hahn (1996), Kerber (1996), Kleinknecht (1996), Klüver (1996), Krause (1996), Lamnek (1996), Liske (1996), Lütge (1996), Meyers (1996), Manhart (1996), Ohly (1996), Patzak (1996), Popp (1996), Radermacher (1996), Ros (1996), Schimany (1996), Seiler (1996), Suchanek (1996), Walther-Klaus (1996), and Weiss (1996). The issue also contained a *Replik* (Dahlberg 1996b) and a "*Metakritik*" (Endruweit 1996).

In the detailed replica, Dahlberg complains, inter alia, that she had not presented in more detail her conceptual theory, because she understands the concept formation of predication derived characteristics as descriptive, while the critics have probably understood more of a formalized conceptual formation. Endruweit (1996, 88-90) states in his meta criticism among others: "Concepts that determine the object of a social science would not have to be determined by their meaning in desk work but in field work. They are meant to describe excerpts from the reality of a concrete society, and here society has—unlike the objects of the natural sciences - the authority of self-definition ... Even if we were very concerned with theoretic systematization, we

would not be able to create a complete conceptual system, as Dahlberg is obviously aiming to, not even multiple systems in parallel, for each theory one. That's because we still have to work with medium-range theories, at least in sociology, so we still have a large number of subsystems whose interrelation is still unclear."

8.0 Desiderata for knowledge organization

In 2009, Dahlberg (2013) presented ten desiderata for knowledge organization at the German ISKO conference in Bonn, which essentially also concern the institutionalization of the field of knowledge organization (later published in the *Knowledge Organization* KO-2011-1 as "How to improve ISKO's standing: desiderata for knowledge organization"). These desiderata are (according to Dahlberg 2013):

- 1. Recognize the units of an ordering system as knowledge units/concepts and use their characteristics to establish a knowledge order.
- 2. Creating overviews of the classification systems used to identify where priorities and preferences lie.
- 3.1 A KO training curriculum and a corresponding qualifying title for the graduates should be developed.
- 3.2 ISKO could possibly found an academy and train teachers.
- 4. National ISKO chapters and the General Secretariat should seek to establish and finance a specialist.
- 5. The ISKO should develop a systematic order of all WO-relevant terms and publish it as a model system for other areas of knowledge.
- 6. The establishment of national institutes of the *Knowledge Organization* should be requested. Her responsibilities include the development of knowledge systems, training activities and research.
- 7. ISKO experts should actively and purposefully apply their "know-how" where it can be made public and thus prove its usefulness. They should be reachable as "points of contact" and should be consultative as well as statistical and journalistic.
- 8. Colleagues working in the field of classification/indexing and thesaurus creation worldwide should be approached to become members of the ISKO.
- 9. ISKO may publish the knowledge of its own area of knowledge, paying attention to professional subject indexes.
- 10.1 Knowledge organization should be considered as an independent discipline, which would be located in the field of science of science, since only in this way it can serve to its many possible applications.
- 10.2 A knowledge order "at a glance" could be made possible by the ICC, as it differs from discipline-oriented universal classifications and provides a simple overview on all fields of knowledge. A synthesis or unity of what is to be known becomes possible.

9.0 Conclusion

Otto Sechser characterized Ingetraut Dahlberg in an e-mail dated 30 October 2017 as following:

> Dr. Inge Dahlberg was and is going to remain one of great personalities of Classification, Documentation, and Knowledge Organization. Her interests, achievements, and worldwide contacts will be the theme of dissertations.
> Here I want to write about Dahlberg as a good-hearted, modest, hard-working, high-priced woman, always ready to help, with enormous social intelligence ... She will be missed in ISKO.

Note

1. "What is Knowledge Organization": contributions in August 2006 to the discussion list wiss-org@bonn.iz-soz.de as well as to isko-l@lists.gseis.ucla.edu (no longer available on the internet).

References

ASIS&T. 2014. "Ingetraut Dahlberg." In *Leaders of Information Science and Technology Worldwide*. https://web.archive.org/web/20160305153452/http://infoscileaders.libsci.sc.edu/asis/wp-content/uploads/2014/04/Dahlberg-CV.pdf

Becker, Johannes and Angela Reiss. 1996. "'Begriffsbildung' aus psychologischer und sprachwissenschaftlicher Sicht: Ein Plädoyer für Vagheit und Pluralität." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 13-16.

Bühl, Walter L. 1996. "Das Konzil der Lexikographen." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 16-8.

Dahlberg, Ingetraut. 1974. *Grundlagen universaler Wissensordnung*. Pullach: Dokumentation.

Dahlberg, Ingetraut. 1974a. "Zur Theorie des Begriffs." *International Classification* 1: 12-9.

Dahlberg, Ingetraut. 1978. *Ontical Structures and Universal Classification*. Sarada Ranganathan Endowment Lectures 11. Bangalore: Sarada Ranganathan Endowment for Library Science.

Dahlberg, Ingetraut. 1979. "On the Theory of the Concept." In *Ordering Systems for Global Information Networks: Proceedings of the Third International Study Conference on Classification Research Held at Bombay, India, during 6-11 January 1975*, ed. Arashanapalai Neelameghan. Sarada Ranga-

nathan Endowment Lectures 13. Bangalore: FID/CR and Sarada Ranganathan Endowment for Library Science, 54-63.

Dahlberg, Ingetraut. 1982. "ICC – Information Coding Classification – Principles, Structure and Application Possibilities." *International Classification* 9: 87-93.

Dahlberg, Ingetraut. 1987. "Die gegenstandsbezogene, analytische Begriffstheorie und ihre Definitionsarten." In *Beiträge zur Begriffsanalyse,* ed. Bernhard Ganter, Rudolf Wille and Karl Erich Wolff. Mannheim: BI Wissenschaftsverlag, 9-22

Dahlberg, Ingetraut. 1996a. "Zur 'Begriffskultur' in den Sozialwissenschaften: Lassen sich ihre Probleme lösen?" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 3-13.

Dahlberg, Ingetraut. 1996b. "Replik." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no. 1: 67-85.

Dahlberg, Ingetraut. 1998. "Wissensorganisation." In *Lexikon: Informatik und Datenverarbeitung*, ed. Hans-Jochen Schneider. Version 4.0, München: Oldenbourg.

Dahlberg, Ingetraut. 2006. Definitionen aus dem Begriffsfeld "Wissensorganisation"

Dahlberg, Ingetraut. 2008. "Interview with Ingetraut Dahlberg, December 2007." By Ia C. MicIlwaine and Joan S. Mitchell]. *Knowledge Organization* 35: 82-85.

Dahlberg, Ingetraut. 2009. "Concepts and Terms: ISKO's Major Challenge." *Knowledge Organization* 36: 169-77.

Dahlberg, Ingetraut. 2011. "How to Improve ISKO's Standing: Ten Desiderata for Knowledge Organization." *Knowledge Organization* 38: 69-74

Dahlberg, Ingetraut. 2012. "Ingetraut Dahlberg: A Life Working in Documentation; Interviewed 30th of June 2013." By Gerhard Romen. https://www.youtube.com/watch?v=NtT5V9e4AsY

Dahlberg, Ingetraut. 2013. "Desiderate für die Wissensorganisation." In *Wissen – Wissenschaft – Organisation. Proceedings der 12. Tagung der Deutschen ISKO*, ed. H. Peter Ohly. Würzburg: Ergon.

Dahlberg, Ingetraut. 2014a. *Wissensorganisation. Entwicklung, Aufgabe, Anwendung, Zukunft*. Textbooks for Knowledge Organization 3. Würzburg: Ergon.

Dahlberg, Ingetraut. 2014b. "What is Knowledge Organization?" *Knowledge Organization* 41: 85-91.

Dahlberg, Ingetraut. 2016. "Dokumentenkunde – Dokumentologie: damals - und heute?" *Information – Wissenschaft & Praxis* 67, no. 4: 195–203.

Dahlberg, Ingetraut. 2017. "Was ist Wissensorganisation?" In *Theorie, Semantik und Organisation von Wissen*, ed. Wieslav Babik, Peter Ohly and Karsten Weber. Würzburg: Ergon, 12-21.

Dahlberg, Wolfgang. 1984. *Ordnung, Sein und Bewußtsein. Zur logischen, ontologischen und erkenntnistheoretischen Systematik der Ordnung*. Frankfurt am Main AVIVA.

Diemer, Alwin. 1969. "Versuch einer Systematik der 'Allgemeinen Wörter.'" Arbeitsunterlage für die Sitzung des Komitees Thesaurusforschung der DGD. 9.5.1969. München-Düsseldorf.

Dreier, Volker. 1996. "Läßt sich die Unklarheit sozialwissenschaftlicher 'Begriffe' beheben?" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 18-20.

Dürr, Renate. 1996. "Doch die Begriffe, sie sind nicht so." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 20-1.

Eckes, Thomas. 1996. "Wissenschaftliche Begriffsbildung und das Problem der induktiven Ambiguität." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 21-3.

Endruweit, Günter. 1996. "Metakritik: Probleme sozialwissenschaftlicher Begriffsbildung." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 85-91.

Feibleman, James K. 1954. "Theory of Integrative Levels." British Journal for the Philosophy of Science 5, no. 17: 59-66.

Frege, Gottlob. 1969. *Funktion, Begriff, Bedeutung. Fünf logische Studien.* 3rd ed. Göttingen: Vandenhoeck & Ruprecht.

Friedlmeier, Wolfgang. 1996. "Der Begriff der 'Begriffskultur' aus konstruktivistischer Perspektive." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 23-5.

Gnoli, Claudio. 2015. "A Place for Each Toy. An Interview with Ingetraut Dahlberg." *AIDA Informazioni : Rivista di Scienze dell'informazione* 33, nos. 1-2: 207–11.

Gödert, Winfried. 1996. "Begriffstheorie: Basis einer Theorie von Dokumentationssprachen - Basis zur Erklärung kognitiver Informationsverarbeitung." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 25-8.

Hahn, Achim. 1996. "Begriffe, Konzeptionen und Beispiele" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 28-30.

Hartmann, Nicolai. 1964. *Der Aufbau der realen Welt. Grundriss der Allgemeinen Kategorienlehre.* 3rd ed. BerlIn de Gruyter.

Kerber, Harald. 1996. "Begriffskultur als Ordnung?" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 30-2.

Kleinknecht, Reinhard. 1996. "Eine analytische Begriffstheorie? " *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 32-3.

Klüver, Jürgen.1996. "Brauchen wir einen begriffskulturellen DIN-Ausschuß?" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 33-5.

Krause, Jürgen. 1996. "Begriffskultur vs. Termassoziation: Gegen informationswissenschaftliche Problemlösungen durch sozialwissenschaftliche Sprachregelung." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 35-7.

Lamnek, Siegfried. 1996. "Ordnung und Wahrhaftigkeit versus Realitätsadäquanz und Erkenntnisfortschritt? Sozialwissenschaftliche Begriffskultur zwischen Szylla und Charybdis." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 37-40.

Liske, Michael-Thomas. 1996. "Technisch operationelles versus reflexives philosophisches Denken." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 40-2.

Lütge, Christoph. 1996. "Begriffskultur als Nächstenliebe? Nutzen und Relevanz von Klassifikationen." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 42-4.

Meyers, Reinhard. 1996. "Brief." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 44.

Manhart, Klaus. 1996. "Zur Rolle von Theorie und Formalisierung bei der Begriffsbildung." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 44-6.

Ohly, H. Peter. 1996. "Läßt sich Chancengleichheit durch Begriffe normieren? "*Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 46-9.

Ohly, H. Peter. 2018. "Dr. Ingetraut Dahlberg – Eine Pionierin der Wissensorganisation." In *Knowledge Organization for Digital Humanities: Proceedings of the 15th Conference on Knowledge Organization WissOrg'17 of the German Chapter of the International Society for Knowledge Organization (ISKO) 30th November – 1st December 2017,* ed. Wartena, Christian, Michael Franke-Maier and Ernesto de Luca. Berlin: Freie Universität Berlin Universitätsbibliothek, 4-14. https://refubium.fu-berlin.de/bitstream/handle/fub188/20535/ProcWissOrg2017.pdf?sequence=1&isAllowed=y

Patzak, Melitta. 1996. "Begriffsklärung als ein metatheoretisches Problem." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 49-51.

Perreault, Jean M. 1994. "Categories and Relators: A New Schema." *Knowledge Organization* 21: 189-98.

Popp, Roland. 1996. "Puritanismus der Erkenntnis." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 51-3.

Radermacher, Franz Josef. 1996. "Stabilität und Variabilität von Begriffssystemen." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 53-5.

Ros, Arno. 1996. "'Begriffskultur' – oder: ein Beispiel dafür, wie man es nicht machen sollte." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 55-8.

Schimany, Peter. 1996. "Vom 'Chaos der denkenden Ordnung' zu einer 'Ethik statischer Begriffssysteme'." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 58-60.

Seiler, Thomas Bernhard. 1996. "Bemerkungen zur Begriffstheorie und zur Begriffsethik." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 60-3.

Suchanek, Andreas. 1996. "Zur Problemkultur in den Sozialwissenschaften." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 63.

Wahrig, Günther. 1975. *Deutsches Wörterbuch*. Gütersloh: Bertelsmann Lexikon-Verlag.

Walther-Klaus, Ellen. 1996. "Die Problematik wissenschaftlicher Definitionen." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 64-5.

Weiss, Hilde. 1996. "Ordnung als Wissen?" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 65-7.

Appendix. Bibliography of Dahlberg's works

Dahlberg, Ingetraut. 1970. "Möglichkeiten einer Neugestaltung der DK." *Nachrichten für Dokumentation* 21, no.4: 143-51.

Dahlberg, Ingetraut. 1971. "Possibilities for a New Universal Decimal Classification." *Journal of Documentation* 27, no.1: 8-36.

Dahlberg, Ingetraut. 1973. "Zur Terminologie der Klassifikation." *Nachrichten für Dokumentation* 24, no.6: 271-3.

Dahlberg, Ingetraut. 1974. *Grundlagen universaler Wissensordnung*. Pullach: Dokumentation.

Dahlberg, Ingetraut, Alwin Diemer, Jean M. Perreault, Arashanipalai Neelameghan and Eugen Wuester, ed. 1974-1993 *International Classification.* Continued by *Knowledge Organization.*

Dahlberg, Ingetraut. 1974a. "Zur Theorie des Begriffs." *International Classification* 1, no.1: 12-9.

Dahlberg, Ingetraut. 1975. Review of *Indexing Languages and Thesauri: Construction and Maintenance,* by Dagobert Soergel. *Information Processing & Management* 2: 155-7.

Dahlberg, Ingetraut. 1978. *Ontical Structures and Universal Classification*. Sarada Ranganathan Endowment Lectures 11. Bangalore: Sarada Ranganathan Endowment for Library Science.

Dahlberg, Ingetraut. 1979. "On the Theory of the Concept." In *Ordering Systems for Global Information Networks: Proceedings of the Third International Study Conference on Classification Research Held at Bombay, India, during 6-11 January 1975*, ed. Arashanapalai Neelameghan. Sarada Ranganathan Endowment Lectures 13. Bangalore: FID/CR and Sarada Ranganathan Endowment for Library Science, 54-63.

Dahlberg, Ingetraut. 1982. "ICC – Information Coding Classification – Principles, Structure and Application Possibilities." *International Classification* 9, no. 2: 87-93.

Dahlberg, Ingetraut, ed. 1983. *Who is Who in Classification and Indexing*. Frankfurt: Indeks.

Dahlberg, Ingetraut. 1987. "Die gegenstandsbezogene, analytische Begriffstheorie und ihre Definitionsarten." In Ganter, Bernhard; Wille, Rudolf; Wolff, Karl Erich:

Beiträge zur Begriffsanalyse. Mannheim: BI Wissenschaftsverlag, 9-22

Dahlberg, Ingetraut. 1996a. "Zur 'Begriffskultur' in den Sozialwissenschaften: Lassen sich ihre Probleme lösen?" *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no.1: 3-13.

Dahlberg, Ingetraut. 1996b. "Replik." *Ethik und Sozialwissenschaften. Streitforum für Erwägungskultur* 7, no. 1: 67-85.

Dahlberg, Ingetraut. 1998. "Wissensorganisation." In *Lexikon: Informatik und Datenverarbeitung*, ed. Hans-Jochen Schneider. Version 4.0. München: Oldenbourg.

Dahlberg, Ingetraut. 2006. "Definitionen aus dem Begriffsfeld 'Wissensorganisation.'"

Dahlberg, Ingetraut. 2009. "Concepts and Terms: ISKO's Major Challenge." *Knowledge Organization* 36: 169-77.

Dahlberg, Ingetraut. 2011. "How to Improve ISKO's Standing: Ten Desiderata for Knowledge Organization." *Knowledge Organization* 38: 69-74

Dahlberg, Ingetraut. 2013. Desiderate für die Wissensorganisation. In Ohly, H. Peter: Wissen – Wissenschaft – Organisation. Proceedings der 12. Tagung der Deutschen ISKO. Würzburg: Ergon.

Dahlberg, Ingetraut. 2014a. *Wissensorganisation. Entwicklung, Aufgabe, Anwendung, Zukunft*. Textbooks for Knowledge Organization 3. Würzburg: Ergon.

Dahlberg, Ingetraut. 2014b. "What is Knowledge Organization?" *Knowledge Organization* 41: 85-91.

Dahlberg, Ingetraut. 2016. "Dokumentenkunde - Dokumentologie: damals - und heute?" *Information - Wissenschaft & Praxis* 67: 195–203.

Dahlberg, Ingetraut. 2017. "Was ist Wissensorganisation?" In *Theorie, Semantik und Organisation von Wissen*, ed. Wieslav Babik, Peter Ohly and Karsten Weber. Würzburg: Ergon, 12-21.