statement to the subject field of knowledge organization. In a much sharper form, Rudolf Wohl-genannt (1969) formulated his criteria, also basing his arguments on the propositional concept of science. However, neither space nor time permits further elaboration on these criteria here. But they should be considered if further clarification of this matter is sought.

Another essential aspect of science at large is that it affords theories, models, and hypotheses to emerge. In this respect, I should like to point out that the whole lot of more or less intuitively conceived universal and special classification systems, from the beginning of mankind until down to the whole 19th century, were not at all based on theoretical considerations. Similarly, all efforts in the past centuries towards systematizing knowledge on the part of philosophers were not useful for our purposes by the simple fact that systems were developed always only deductively by disciplines although subjects were organized based on best personal knowledge and good will. But exactly that knowledge, which manifests itself in single concepts and statements – the inductive way – did not carry. Nor did the third approach carry, the necessary use of formal relationships, originating from different concept categories. Starting from the approach that had guided Bliss in his time, the Indian mathematician and later librarian of the University Library of Madras, S.R. Ranganathan, developed a new paradigm of classification theory for the entire period following with his faceted classification system, which allows all concept combinations possible. He explained it in his *Prolegomena* (1937).

Therefore, one may conclude that the field of "Knowledge Organization" obeys the science criteria formulated by Diemer, and that it received in the past century also the necessary theoretical foundation – especially by:

- The work of Ranganathan, regarding categorization (facet analysis) and ruled concept combinations – partly already anticipated by the invention of auxiliaries through Otlet and LaFontaine in revising and enlarging the *Dewey Decimal Classification*; and,
- The work of Wüster regarding system formation on the basis of the two hierarchical forms of concept systems using the Logic of Port Royal.

Further, researchers such as E. de Grolier (1962) and J. Perreault (1965) have extended the knowledge about relationships between concepts, especially also regarding their functional relations. By applying this knowledge to the construction and utilization of concept as well as classification systems and thesauri, the field of knowledge organization has developed from a more or less intuitive art into a new and a truly scientific discipline.

6. Knowledge Organization in the Universal Context of Knowledge Fields

If knowledge organization can be regarded as a new scientific discipline, into which environment would it come? Would it belong into the environment of the information sciences? In our *Information Coding Classification* (Dahlberg 1982) we postulated nine ontical areas by starting from the objects of reality, which in the sense of the theory of integrative levels according to J.K.Feibleman (1954) and Nicolai Hartmann (1964), presuppose and build themselves upon each other, and which can be specified each by nine aspect areas.

Looking at Figure 2, demonstrating these nine areas of being, it is obvious that area 8 is the one dealing with the intellectual products of man and society, which means "knowledge" and "information." In the presentation of the matrix it can be seen that under 1 always the general and theoretical aspects of an object area are apprehended, which, in the case of area 8, must be "Science of Science." Its subdivisions are then, i.a., Theory of science, History of science, Science research, etc. In the ontical area 1, the area of Form and Structure, one will find the System Sciences at the position 4 as a specialty of form and structure. Therefore it seemed logical for me regarding the system character of knowledge, as every knowledge unit is related to another one by its concept characteristics, to place knowledge organization at position 4 of science of science under 81, thus 814.

This should be regarded as a proposition only, along with the entire system of knowledge fields, as represented by this universal classification system, under which nearly 7000 concepts of knowledge or subject fields (and not as yet their contents) on a number of subdivisional levels were elaborated on the basis of their definitions. (The definitions were taken from encyclopedias, from Wahrig (1975), and from 500 special dictionaries. They were discussed with almost 300 university teachers. In this sense it forms, expressed in today's pertinent terminology, an "upper ontology.") The system could well be used for the purpose mentioned in the next chapter, but it