FAILLA, Donatella: **Lacche Giapponesi nel Museo Chiossone: Manuale di analisi e descrizione catalografica.** Genoa, IT: Sagep Editrice 1993. (Regione Liguria. Ufficio Musei e Beniculturali)

The lacqueur section of Edoardo Chiossone's collection of Japanese art, now in Genoa, includes approximately 100 pieces of home furniture, a few dozen liturgical and military pieces and 352 individual pieces (saya nuri). These range from the Tokugawa or Edo period (1603-1868) to the first thirty years of the Meiji period (1868-1912). Dr. Failla's catalogue begins with a chapter on sources for her method based on an extensive bibliography (p.193-197) and a second chapter on problems of distinguishing between simple, composite and aggregate objects. Chapter three describes the characteristics of lacqueured Japanese furniture. This is richly illustrated by photographs, period woodcuts showing the objects in context and attractive line drawings by the author. Chapter four examines materials and techniques in the art of lacqueur making. A final chapter documents analytical procedures in the structuring of the data. A series of appendices (A-G) illustrate the forms used to record material, Japanese and Chinese historical epochs (I-J), and examples of actual records (K). As the reviewer does not read Japanese no comments can be made on the accuracy of the translations. However, it can be noted that the rest of the work gives meticulous attention to detail.

From the viewpoint of classification this book is of particular interest for two micro-thesauri which take as their model J.Aitchison and A.Gilchrist's *Thesaurus Construction.* The first thesaurus (p.52-87) deals with Japanese home furnishings, is in facetted form, and arranged with an alpha-numerical notation as in figure 1 below:

A	DOGU	Category
4.	GEINO-DOGU	Class
c.	KO-AWASE	Subclass
C	UTENSILS*	Generic Type
a	KODOGU	Model Type
2	KOWARI-DOGU	Subtype
f.	KOWARI-DAI	Variation

Fig.1: An example of a facet with an alphanumerical notation applied to home furnishing from Failla, p.46.

A second thesaurus covers materials and techniques in the art of lacqueur (p.137-146), and arranged with an alpha-numerical notation as in figure 2 below:

A	Art of Lacqueur*	Family of technique
7.	MAKIE	Genus of technique
A.	JI-MAKI	Group of Species
d	CHIRI-JI	Species of Technique
l	NASHIJI	Subspecies of Technique
g.	KUMO-NASHIJ	Variety of Technique

Fig.2: An example of a facet with an alpha-numeric notation applied to lacqueur techniques from Failla, p.126.

The thesauri give a transcription of the Japanese term, followed by a translation of the term into Italian and English. Appendices correlate these transcriptions with the original Japanese ideogram. There are also short but very useful controlled vocabularies of a) structural features and specific aspects of morphology (p.96) illustrated by examples (p.97) and b) ornamental structural "complements" (p.98-99). A series of beautiful colour plates (tables XXII-XXIX) illustrate the intricacies of the lacqueur methods. The author makes the fascinating point (p.10) that *kanji* is made up solely of composite words (jukoge), whereby one term presents a determinate theme giving the fundamental meaning, preceded by another term which deals with the particular and differentiated characteristics. Hence, *kanji* permits a natural facetted structure which corresponds to both the graphic system and the syntactic principles. Museum experts will find numerous useful reflections concerning classification of parts relative to the containing object. The catalogue is beautifully printed and illustrates admirably how new electronic cataloguing techniques can complement the tools of traditional scholarship. Kim Veltman

* In the interests of intelligibility the Italian terms of the examples have been translated into English.

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STRUB, Peter (Ed.): **Wissensrepräsentation** (Knowledge Representation). Informationstechnik IT 31(1989) No.2, p.91-170. München: Oldenbourg Verlag. ISSN 0179-9738

This volume contains seven contributions on the central theme "Knowledge Representation in Artificial Intelligence" and a compilation of the basic literature on this subject arranged by R.DECKER. In his editorial the editor stresses that the actual objective of AI has always been to investigate, to model on the computer and to reproduce man's cognitive abilities and intelligent achievements, but that exaggerated expectations nourished by expensive brochures and project proposals had wrongly given rise to the impression that AI systems constitute a completely developed technology that can be put to use without a great amount of knowledge and training. The contributions in this thematic issue of *Informationstechnik IT* are to help correct to some extent this lopsided picture of AI. They represent knowledge representation as a developing, active research field of AI characterized by various different viewpoints and approaches, a field in which many problems still await their solution and many controversies still need to be ironed out.

J.LAUBSCH (*Towards a theory of knowledge representation*) gives a brief introduction into what, in his opinion

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and from the point of view of AI, should be included among the objects of a theory of knowledge representation. He represents the classical approach of knowledge representation based on symbol processing and logic, an approach which in the ensuing contribution by M. REINFRANK (*Formulae and models: Knowledge representation in logic*) is illustrated and deepened, in which process the advantages, but also the limits and the still open questions of this approach become evident.

Using a purchasing robot as an example, B.FALTINGS (*Knowledge representation for qualitative reasoning*) illustrates the problems of qualitative reasoning). What seems so simple to and for a human being, namely the placing of goods into a basket without their falling over or becoming damaged, turns out to be a difficult task for a robot, for he must know the physical properties of every type of goods. How fragile is a given article? Where is its center of gravity? What happens when... - It is these and similar questions that he must be able to answer. Exact data on the goods are not available to him, nor, by the way, would they help him any if they were. Nor are the differential equations of physics of any use to him, even though the problem he faces is one of physics. Rather it is a matter here of being able to grasp and handle qualitative, commonplace physical knowledge. The methods to this end - qualitative physics and qualitative process theory - are briefly outlined.

H.STOYAN (*Knowledge representation or programming?*) takes a critical look at what has been achieved so far. In his opinion, knowledge representation in the proper sense of the word is still a long way off, and the formalisms of the present are no more than attempts to model the world and describe action schemes. To call these modest results 'knowledge representation' impresses him as a magic invocation, an attempt to grasp an unattainable thing by giving it a name. He formulates the thesis that at present there is no conceptual difference between knowledge representation and programming, hence that every form of programming is knowledge representation and the knowledge representation in AI can be equated with programming. The latter is assuredly incorrect, for there are learning algorithms which build up their knowledge by means of the learning material offered; it is the algorithm rather than the knowledge which must be programmed.

Chr. FREKSA (*Knowledge representation and cognitive science*) gives a brief introduction to the interdisciplinary field of cognition research, which comprises partial fields of the disciplines AI, cognitive psychology, linguistics, philosophy, anthropology and the neurosciences. Of central importance here are the form of representation and manner of processing of knowledge, as well as the relationship between knowledge and its representation. Actually, AI should learn from cognitive psychology how man represents his knowledge, and then develop its models for the computer. Freksa's analysis proves, however, that the very opposite procedure has been followed: cognitive psychology has tried to apply the various representational forms of AI to mental processes, an approach which so far has not been of any substantial assistance to either of the two fields concerned.

In the future, T.HÄRDER (*Classical data models and knowledge representation*) believes, knowledge base management systems will play a similar part in all types of knowledge-based applications as databank management systems are playing today in commercial information systems. He therefore gives attention to the question to what extent the many years of experiences with classic database models can be made use of for knowledge representation. He proves that the relational model is able to be of help in some typical knowledge representational tasks such as e.g. the rule processing, but not in others such as classification, association, or the modeling of time and space. On the other hand, the present-day AI systems lack a few tried and tested database properties of great importance for practical application. They include particularly multiple access, access control, integrity maintenance, and access to distributed data. Härder advocates therefore a knowledge base management system combining the advantages of both approaches. He is thinking of a core consisting of a database system and connected via suitable interfaces with the various models of knowledge representation. The development is still in its infancy here, with it being unclear in particular in how far an acceptable performance can be achieved with such a system.

In the concluding contribution, G. GÖRZ (*Knowledge representation and natural language processing*) examines the question how knowledge on natural language may be represented and applied in a language processing system. His investigation centers around the grammatical mappping problem, which consists in transforming linguistic statements into structures representing their meaning. Interpreting this mappping himself as a knowledge-based process, he identifies its characteristic problems, presents a few typical approaches to their solution and discusses their limitations.

The contributions presented contain a wealth of profound thoughts, but despite this richness one cannot help getting the impression of a certain sterility of the arguments. This seems to be typical of the entire field: one would like to transfer certain human faculties to the computer, without, however, having properly understood these faculties so far. It is strange, too, that on the one hand one willingly admits being unable to say just what knowledge is, while on the other hand one tries to represent the undefinable. When critically scanning the literature on knowledge representation one will make the curious discovery that it is always tacitly assumed that there is unrepresented knowledge; this tacit assumption is contained already in the very concept of 'knowledge representation' itself. But knowledge is always represented somewhere, be it in the human brain or in one or the other written form. In reality, therefore, AI is not dealing at all with a representation of knowledge, but with a change of the representational medium: knowledge in a non-computerizable representa-

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tion must be transformed into a computerizable one. This task is not a new one, confronting us already as it does when facts easily comprehensible to man need to be chopped up into numerous tiny relations to be brought into a form which a relational database can accept.

Why pay attention, in this fast-moving age, to a publication dating back several years already? Have not, since then, neural networks freed us of all problems of knowledge representation? This, it appears, is not the case; on the contrary: the network euphoria of the present has contributed to the falling into oblivion of many painful experiences of the past. The contributions presented here might well call these experiences back to mind. They show that knowledge representation is a complex problem requiring genuinely scientific research efforts.

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HAHN, Gerhard: **Sacherschließung in Spezialbibliotheken. Eine Einführung in Formen und Systeme.** (Subject analysis in special libraries. An introduction into forms and systems). München: Arbeitsgemeinschaft der Parlaments- und Behördenbibliotheken, c/o Bibliothek des Deutschen Patentamts, 1992. (Arbeitsgemeinschaft der Parlaments- und Behördenbibliotheken: Arbeitshefte, Nr. 46, Dezember 1992). 331 p., ISBN 3-925779-09-4, ISSN 0518-2220.

Wer über die Sinnhaftigkeit, die Intentionen und die angemessenen Instrumente bibliothekarischer Inhaltserschließung reflektiert, muß wissen, daß zumindest drei Aufgaben zu erfüllen sind:

1. Analyse des institutionellen und funktionalen Umfeldes, in dem der Prozeß der Inhaltserschließung stattfinden soll;

2. Erörterung möglicher epistemologischer, wissensorganisatorischer und katalogtheoretischer Grundlagen und Hintergründe, die der angestrebten Inhaltserschließung Perspektiven eröffnet und die heutzutage allzu beliebte vorschnelle Flucht in vordergründigen Pragmatismus, problemscheuen Formalismus und orientierungslose Kasuistik vermeiden hilft;

3. Evaluation bestehender Klassifikationssysteme und Regelwerke im Sinne eines benutzerorientierten, adressatenbezogenen und theoriegeleiteten Pragmatismus, der von einem als Pragmatismus maskierten denkfaulen Opportunismus zu unterscheiden ist.

Gerhard Hahn, Leiter des Referats Sach- und Sprechregister des Deutschen Bundestages, erkennt die Bedeutung dieser Aufgabenstellungen - angesichts der heutzutage eher desolaten Sacherschließungsdiskussion beileibe keine Selbstverständlichkeit - und wird ihnen, so das hier schon vorweggenommene Fazit, über weite Strecken gerecht. Die Studie, die die "Kenntnis der Möglichkeiten, Methoden, Verfahren und Hilfsmittel der Inhaltserschließung und ihrer theoretischen Grundlagen" (p. 5) vermitteln will, gliedert sich in insgesamt neun Kapitel:

1. "Sacherschließung als Aufgabe" (p. 11-52),
2. "Die systematische Sacherschließung und ihre Formen" (p. 52-102),
3. "Die verbale Sacherschließung und ihre Formen" (p. 102-202),
4. "Die Methode Eppelsheimer - für Spezialbibliotheken geeignet?" (p. 202-206),
5. "Systematische oder/und verbale Sacherschließung?" (p. 206-211),
6. "Erschließungstiefe und Sacherschließungsmethode" (p. 212-220),
7. "Sonderkataloge - ja oder nein?" (p. 221-226),
8. "Sacherschließung online" (p. 227-272),
9. "Sacherschließung im Online-Bibliotheksverbund" (p. 273-283).

Als steten und zentralen Bezugspunkt all seiner Überlegungen zur spezialbibliothekarischen Sacherschließung begreift Verf. rechtens die typologische Frage nach der Aufgabenstellung der Spezialbibliothek. Spezialbibliotheken werden definiert als sacherschließungszentrierte "Dienstleistungseinheiten in Organisationen, die selbst keine bibliothekarischen Ziele haben"; sie "erwerben, erschließen und verwalten Bücher und andere Publikationen für eine spezialisierte Organisation oder im Hinblick auf die Bedürfnisse einer spezialisierten Gruppe von Benutzern" (p. 11). Die aus universalbibliothekarischer Sicht erfolgten, idealtypisch-puristischen Unterscheidungen zwischen 'Bibliothek' und 'Dokumentation', zwischen Literaturversorgung und Informationsvermittlung verlieren im spezialbibliothekarischen Alltag ihre dichotomische Schärfe. Immer wieder gelingt es dem Verfasser zu bekräftigen, daß sich die Konzipierung und Realisierung von Instrumenten der Inhaltserschließung an bibliothekspolitischen und bibliotheksindividuellen, nutzerorientierten Entscheidungen ausrichten müssen (vgl. z. B.

p. 116). Der Autor verdeutlicht, daß sich Inhaltserschließung nicht in einer platonischen Schutzzone klassifikatorischen Erkenntnisstrebens vollzieht, sondern auf pragmatische Weise in den informationellen und kommunikativen, von vielfältigen Interessen bestimmten Gesamtprozeß der Literaturproduktion, -vermittlung und -rezeption eingebunden ist.

Als willkommene und produktive erkenntnistheoretische Grundlage, als "methodisch-theoretisches Rüstzeug" (p. 35) dienen Verf. die Analyseverfahren und fundamentalen Kategorien der Facettenklassifikation Ranganathans sowie dessen Ansatz der *phase relations*. Selbst wenn sie nicht in konkretes Sacherschließungshandeln umgesetzt werden, helfen Ranganathans *essentials*, die Inhaltserschließung auf eine konzeptionelle Grundlage zu stellen,

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