CARRAS-COSA y J. SOLER. A system for structured information retrieval by Jesús Mª VEGAS HERNÁNDEZ and Pablo de la FUENTE. Interfaces for information retrieval systems: search behaviour models for end users by Victoria MANGLANO. Quality in documents indexing: A necessary element for optimizing information retrieval by Ana EXTREMEÑO PLACER. Forms rebellion: form aspects of the document content as a retrieval element by Constança ESPELT and Jesús GASCÓN. Standardized structural model for archives description tools by Eduardo PEIS and Juan Carlos FERNÁNDEZ-MOLINA. Information retrieval and knowledge management systems by Ricardo EITO BRUN. Subject searching in automatized catalogs of the Catalonian public libraries by Rosa SEGUÍ I PALOU and Aurora VALLS.

Information retrieval in specialized and multimedia systems: New stategies in information retrieval and dissemination in the industrial sector by José Ángel MARTÍNEZ USERO. Legislative procedure in the Europe Union and information retrieval by Mª del Carmen SÁNCHEZ DOMINGUEZ. Knowledge representation of moving images by Jorge CALDERA SERRANO. A conceptual model theory for multimedia objects retrieval by José Antonio MOREIRO and Miguel Ángel LÓPEZ ALONSO.

6. Evaluation of Information Systems: ERIC data base evaluation in different settings: online and web by José Antonio SALVADOR OLIVÁN, José Mª ANGÓS ULLATE and Mª J. FERNÁNDEZ RUIZ. Measures for conceptual schemes evaluation by Mario PIATTINI M. POLO, C. CALERO and F. RUIZ. Evaluation of interfaces in information retrieval systems by Juan Antonio PASTOR SÁNCHEZ and Vivina ASENSI ARTIGA.

7. The users of Information Systems: The user as the system reason of being by Armando JIMÉNEZ CORREA. Personalisation of information based on the concept of relevance using a user model by Amos A. DAVID and David BUENO VALLEJO. The transactional analysis as a method for collecting data in the study of users behaviour in online catalogs by José Antonio FRIAS MONTOYA. Techniques for knowledge representation of users in a domain oriented information system by Joaquín RUIZ ABELLÁN and María J. LÓPEZ-HUERTAS.

The Proceedings are already published by Isko-Spain and the University of Granada, and they can be bought through Internet at the following address: HIPERVÍNCULO http://www.ugr.es/~isko. The conference conclusions can be read at the same electronic address.

Finally, I have to say that the conference was a big success both in number of participants (two hundred and forty five) and in the quality of the contributions. Also remarkable was the great interaction among the participants along the conference. It was also clear that combining models and methodologies for knowledge representation and organization demands deeper study and research. The wonders of Granada city and the social events planned contributed also to the enhancement of the three-day ISKO-Spanish Chapter Conference.

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Knowledge and Education in an Information-loaded World
(Wissen und Bildung in einer informatisierten Welt)

This was the topic of a seminar in the Taunus mountains, organized on April 23-25, 1999 by ISKO member Prof. R. **Wille** of the ErnstSchröderZentrum for Conceptual Knowledge Processing, Darmstadt, together with the Protestant Academy Arnoldshain. The five speakers and their papers were: *Rudolf Wille* (TU Darmstadt): How can knowledge acquisition be supported by computer systems? – *Norbert Meder* (Univ. Bielefeld): Knowledge and education in computer-supported learning environments. – *Frieder Nake* (Univ. Bremen): Education in virtual museums. – *Rolf Schulmeister* (Univ. Hamburg): Learning in a virtual university. – *Joseph Weizenbaum* (MIT Cambridge, presently Berlin): Knowledge and education in an information-loaded world (presentation in discussion with 4 students as representatives of the younger generation).

The meeting, held in German, with 42 participants was concluded with a discussion session entitled: „How do we reach a human-oriented handling of information technology?" Before everybody could contribute to this question, four participants were asked to present their observations during the seminar, among whom was Robert **Fugmann,** whose text will be given here, somewhat shortened.

Fugmann noted that a certain topic seemed to be common to the five different papers, i.e. the problem of subject interpretation of messages of all kinds, also of signs and signals. In the paper by N. Meder, computer interpretation is occurring when codes representing knowledge have to be decoded, both in case of natural and of artificial codes. Interpretation is also occurring on the part of the reader of information if

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he/she reads texts as a subject expert. According to Meder, miscommunication is often conditioned by interpretation deficiency.

Mr. Wille looked at every kind of communication as a mental process, i.e. in any case including the dialogue-partner. In this process a continuous interpretation takes place of the matter heard or read, although naturally only latently. Latency is stressed here because the process of interpretation is invisible. Regretfully, for this reason, this process is mostly ignored in today's widespread positivistic attitude, especially in prominent circles of AI-research with the unavoidable consequence of faulty research results and continuing announcements of unreachable aims. An adequate interpretation of unfinished sentences, often to be met in the Internet, will therefore not be possible and is useless for any intended communication.

For Mr. Nake, any reading process is already an interpretation process namely as a process of interpreting the signs printed in black. Fugmann, however, notes here that data and magnetized items are not as yet knowledge, they become knowledge only then when they can be subject-adequately interpreted. This holds also for an ideology-free recording of history.

Mr. Schulmeister also spoke of interpretability and non-interpretability, where the latter apparently must be equalized with non-understandability. How much understanding will depend on the interpretability of gestures becomes obvious for all those who do not master the language of gestures.

Mr. Weizenbaum made it especially clear which role interpretation plays in the communication process. Signals will only become **information** for the receiver when they can be interpreted correctly. Thus, the computer may only then deliver information, when the signals, or messages in the printout are interpretable at least. Therefore there is no information flood, only a flood of signals. Mr. Fugmann referred here also to a statement which Julius **Shrejder** had already made in 1965 (reported by Nick **Belkin** in J.Doc.1978, 3,.p.55-58), by drawing a borderline between messages and information in the sense of semantic information, where the latter is a kind of a message of interest to the receiver, i.e., it must be interpretable for the receiver.

Mr. Weizenbaum also stressed a totally different necessity of well-received interpretation: Any programming of information processing should always be done with the future user in mind. Unbelievably great is the number of possibilities of verbal misunderstandings between user and programmer by misinterpretation of user demands and reports of results. These misunderstandings can only be avoided by a continuous intensive exchange of thoughts. Otherwise, after a programming time of many months without any dialogue, the result may well be disastrous for the users.

In his introductory words to the final session, Mr. Wille had cited some problems which are unsolvable for the computer. Among these are - according to the mathematician Keith **Devlin** (in *Goodbye Descartes)* - e.g., the overcoming of the wealth of meaning in natural language expressions. Before inputting a text into the computer store, it should always be clarified which meaning of a special word is meant in each case; otherwise one will find a lot of irrelevant material by searching on keywords. One will find documents including such a word, however not necessarily having the meaning searched for - a fact which can always be encountered when searching in the Internet with its lack of interpretation.

Mr. Wille also cited Devlin with regard to the real-life context of an information seeker. It, too, cannot be considered by a computer program because nobody would be able to lay down in advance even an approximately complete set of instructions for how to deal with future, presently still unknown situations. Nor can 'learning programs' satisfactorily extrapolate for the future from what has happened in the past. The context (or environment) of an information seeker determines which kind of information is of interest and what is to be regarded as the essence of a text. Therefore, what should be made retrievable of a text in question and what should be left out of such a computer store for good reasons is a question of subject-relevant interpretation.

Thereafter, Mr. Fugmann continued his observations in a general way which helped the audience, who came mostly from areas other than information science, to understand our problems of subject analysis, classification and indexing.

I should like to thank Dr. Fugmann for having supported this report by letting me have his written statements. Much more could have been said though about this extremely intelligent and stimulating encounter. I would like to refer to just one more contribution: R. Wille's idea of a human-oriented handling of computer technology includes a positive approach to the meaning of 'human'. But humans are fallible - N. Meder had pointed to the second commandment of the Sinai "Though shalt have no other gods before me" (Ex 20, 3-7), but for many contemporaries the computer takes this divine position. Also with the help of computers much evil is being done. I took the liberty and proposed to speak rather of a God-oriented handling of computer-technology, meaning that whatever may be done with it should be justifying before the Holy Face of God.

The seminar was the 3rd in a series and most of the participants hoped for its continuation next year.

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