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SECTION B: ARE THERE LIMITS TO THE POWER OF INFORMATION TECHNOLOGY ?

Topic B1: Artificial Intelligence, Expert Systems, Super-Computers. ABSTRACTS p.28.

Synopsis

There are no known limits to the power of information technology in producing increasingly intelligent systems:

- in hardware
- in software
- conceptually

However, the research problems are still highly complex and for a long time and in complex domains, computers are bound to remain tools for human use rather than independent intelligent units. The most difficult problems are conceptual:

- in speech and natural language processing
- in vision and robotics
- in knowledge based systems and expert systems
- in human-computer interaction

There is still much to learn from the study of natural (biological) intelligence in order to solve the conceptual problems indicated above.

Europe is strong in these fields of research and, in a number of cases, world leading but still has not fully learnt to tackle the problems involved in technology transfer to industry.

There is therefore a need for:

- a continued effort in interdisciplinary IT-related basic research;
- long-term support for European IT R&D in addition to the Communities' R&D programmes, e.g. in the form of European Networks of Excellence;
- a continuing increase in the mutual awareness and collaboration among European IT researchers: the situation of European research unification is still fragile;
- a continuing increase in the mutual awareness and collaboration among European research institutes and industry;

- increased efforts in knowledge transfer between research institutes and industry (ideas, people, collaboration). This aspect also involves analytical work since, as a matter of fact, the processes of technology transfer are still not too well understood.

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