

makes ‘computing with perceptions’ possible.

Advancing the representation of perceptions could increase the ability to represent the way that humans use our problem solving abilities, but this will require going beyond merely representing language meanings; we will have to be able to represent perceptions, considering how humans use implicit information to give meaning to events that occur in the real world.

5. Conclusion

It is often stated that humans are able to take decisions and act even when working with vague, imprecise, uncertain or incomplete information. However, while it is true that ‘explicit’ information is relevant in decision making and problem resolution, we do not limit ourselves to just this kind of information.

Humans construct meanings, we attribute meanings and we assess that attribution in accordance with information that is usually not considered in computer representation processes. The source of ‘implicit’ information that humans use to make decisions is the information provided by the perceived context which determines the assignation of meaning to explicit information.

In human processes, the construction of perception is a property which emerges from the relationships that we establish between knowledge, comprehension, the assignation of certainty, beliefs or suppositions, mastery of causalities and the ability to resolve problems. We can describe these components as the ‘explicit’ information used. But beyond this explicit information, humans also use ‘implicit’ information which comes from the environment or the context in which we find ourselves. This kind of information is just as powerful as explicit information when constructing meaning, and our perceptions of the real world.

Our knowledge, always under construction, forever incomplete, requires the information we use to be contextualised in order to establish degrees of validity when assigning meanings. Sharing the context of meaning allows perceptions to be shared and it gives social value to expressions such as ‘very intelligent’ or ‘attractive’. Sharing perceptions, in terms of contextualising information, allows the resolution of problems to be acceptable or shared by members of a community and allows social validity to be assigned to the resolution of problems.

From this perspective, computer representation of intelligence (in terms of problem solving) requires representing processes involved in analysis, interpretation, the assignation of meaning and the assignation of validity to (explicit) information in accordance with our context (implicit information) in order to resolve problems. In summary, the possibility of using computers to represent experiential context could constitute a perception representation model and, in consequence, the represen-

tation of human knowledge.

References

- [1] L.A. Zadeh, From computing with numbers to computing with words –from manipulation of the measurements to manipulation of perceptions, *International Journal of Applied Mathematics and Computation*, Vol.12 3:307-324, 2002
- [2] R.J. Sternberg and W. Salter. *Handbook of Human Intelligence*. Cambridge, UK: Cambridge University Press, 1982
- [3] R.J. Sternberg R.J. *Beyond IQ: A triarchic theory of human intelligence*. New York: Cambridge University Press, 1985
- [4] H. Gardner. *Intelligence Reframed: Multiple Intelligences for the 21st Century*. New York: Basic Books, 1999
- [5] J. Dewey (1910) *How We Think*. Boston, New York, Chicago: D.C.Heath & Co. Pub, 1910
- [6] H. Christiansen and V. Dahl. *Meaning in Context*. In A. Dey et al. editors, proceedings of the 5th International and Interdisciplinary Conference, CONTEXT 2005. *Lecture Notes in Computer Science 3554*, pages 97-111 Springer-Verlag, 2005