

Towards which Intelligence? Cognition as Design Key for building Artificial Intelligent Systems

Invited talk at ESCOP (19th Conference of the European Society for Cognitive Psychology), September 17-20 2015.

Official Symposium on Bridging Cognitive Psychology and Artificial Intelligence, Paphos, Cyprus sponsored by the Artificial Intelligence Journal and IBM.

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In the last decades, the research in Artificial Intelligence (AI) has reached remarkable results in a variety of fields (such as, for example, in theorem proving or in deep learning etc.). Despite these results, however, the realization of artificial systems endowed with human-level intelligence (McCarthy, 2007) is still far from being achieved. Given this state of affairs, in recent years, the area of cognitively inspired artificial systems has attracted a renewed attention both from academia and industry (Lieto and Cruciani, 2013, Vernon 2014, Lieto and Cruciani 2015, Lieto and Radicioni) and the awareness about the need for additional research in this interdisciplinary field is gaining widespread acceptance. By following this line, I will argue that the results coming from the cognitive research can be plausibly used, in a methodological perspective aiming at coupling “functionalism” and “structuralism” (Cordeschi, 2002), as a design constraint for the realization of artificial systems aiming at developing plausible forms of human-level intelligence. In addition, I will argue that the “cognition in the loop” approach can be also useful to detect and discover novel aspects of the cognitive theories, thus helping to progress towards a deeper understanding of the foundational roots of intelligence (both in natural and artificial systems).

References

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