Abstract

This is where the abstract will go. I guess I'll mention a thing or two about the contents, what I plan to discuss and what my analysis shows.

Cognitive Science and Artificial Intelligence: An Interwoven Approach

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1 Introduction

This is Paolo Marzolo's bachelor thesis, written as part of the three-year program in computer science at University of Bologna. The stated objective of this document is to analyze the history of Cognitive Science and Artificial Intelligence and identify how influences among the two disciplines and others led to a partially shared evolution in the overarching research topics throughout their lifespans. Other similarities will be pointed out, and some of the algorithms and concepts contained throughout the sections will be explained in detail, in order to give the reader a more complete understanding.

The structure of the document will be as follows: after this introduction, a brief glossary will introduce some of the terms that will be used in this document with a short definition; this has been included to avoid having "foundational" terms be constrained by a specific philosophy or line of research. Then, the rest of the document will develop parallel to the history of the disciplines. In the final section, a bird's-eye-view will provide additional insight, and **MAYBE** a brief discussion of the roles of symbols will conclude the contents.

2 Terms and Definitions

Before defining our glossary, it is important to understand the reasoning behind why we chose to include it: when discussing researchers' understanding of human thought, it is nearly impossible to avoid using terms that have a strong past history. As an example, "thought" could already be considered too far from a behaviorist point of view. A further example is a recent discussion that took place after a somewhat controversial paper by Nunez was published [2], questioning the multidisciplinarity of Cognitive Science as a discipline (and journal) and declaring "The prospect launched by the cognitive revolution of a unified and coherent interdisciplinary seamless cognitive science did not materialize".

Cognitive Science. As mentioned in the Nunez paper... STUFF. Because of this, the disciplines which make up Cognitive Science are not only multiple, but subject to interpretation as well. Since the nature of this work is to compare it to the history of Artificial Intelligence, we will from this point on use the acronym "DCS", for Descriptive Cognitive Sciences, as an alternate approach to the Constructive one taken by Artificial Intelligence researchers. This is not to say that a psychologist cannot take a constructive approach to the explanation of consciousness: the only reason we chose this is because we found it to be an intuitive use of the term.

Mind. Once again, although we take notice of the history of the term, we have to select a few terms to use in our language. Hereafter, we consider the mind as the non-physical correlate of human brains: "the complex of faculties involved in perceiving, remembering, considering, evaluating, and deciding. Mind is in some sense reflected in such occurrences as sensations, perceptions, emotions, memory, desires, various types of reasoning, motives, choices, traits

of personality, and the unconscious."[1].

whatever else will come up

3   A History of Influences

As mentioned in the introduction, our approach will follow the historical sequence of events, although some references or explanations may be anachronistic for clarity. In order to give a general view, we split the histories of these disciplines into broad periods: one for (more or less) every substantial shift in approach and views.

3.1   Landscape before 1950

3.2   1956: A Pivotal Year

3.3   1960-1970: Great Promise

3.4   1975-1985: Ashes and Embers

3.5   1987-1993: Bodies as the Key to Minds

3.6   1993-2000: Agents and Cooperation

3.7   2000-now: Hybrid Systems: New Perspectives

3.7.1   gianandrea

4   Perception shifts

Should I merge these two?

4.1   Symbolism and Connectionism

4.2   Symbols and Subsymbols: Collect or Extract

5   Conclusion

References

[1]   *Mind*. Encyclopedia Britannica. URL: https://www.britannica.com/topic/mind (visited on 06/14/2021).

[2]   Rafael Núñez et al. "What Happened to Cognitive Science?" In: *Nature Human Behaviour* 3.8 (8 Aug. 2019), pp. 782–791. ISSN: 2397-3374. DOI: 10.1038/s41562-019-0626-2. URL: https://www.nature.com/articles/s41562-019-0626-2 (visited on 06/13/2021).