

# The History of CogSci at UAEU, as well as definitions and taxonomies of the field

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## I. HISTORY

Since the early days of the university, there has been both faculty as well as projects/equipment, that were in one way or another related to activities that would fall under the umbrella of "cognitive science". However, the first (to our knowledge) organized attempts to unify such resources and create activities that would self-identify under this term, were started in the fall of 2007. The key landmarks were:

Landmarks of CogSci at UAEU

**October 2007:** GCC Cognitive Science Society (GCC-CSS) bootstrap group established

By a team of 10 or so UAEU, AUS, and Sultan Qaboos faculty, headed by Nikolaos Mavridis and Ann Scholl. First informal meetings at UAEU, and during a weekend in Dubai.

**November 2007:** UAEU RA Proposal

Proposal for UAEU Research-Affairs GCC-project drafted and submitted, (project centered on establishing a "GCC Cognitive Science Society" through multiple activities) by the members of the GCC CSS bootstrap group, with PI Dr. Nikolaos Mavridis. The project was "accidentally lost" by Research Affairs, and considered again in different form in March 2008, when it was declined without review or justification. However, most of the activities proposed continued:

**February 2008:** Regular Weekly CSS Reading Group Meetings

Every week (Wednesday evening), 15 or so faculty and 15-20 students, gather in the college of IT for 2-3 hours of interesting presentations and discussions on a variety of topics related to cogsci. Furthermore, an active content website and two mailing lists are created. The list of meetings, topics and presentations is available at the website of the GCC-CSS: <http://www.hafeet.uaeu.ac.ae/cogsci>

**September-November 2008:** Three important proposals drafted, and one revised

Proposal 1: "Cognitive Systems and Science Center" (Scholl, Mavridis & Idrissi)

Proposal 2: "M.Sc. in Cognitive Sciences" (Almughairbi, Mavridis, and others)

Proposal 3: "Brain and Behavior Research Center (BBRC)" (Almughairbi)

Substantially Revised and Augmented Proposal: "Modeling the mind's eye (MME): Imagination, Gender and Language in Humans and Machines – Establishing Cognitive Science at the UAEU" (Karafyllis, Mavridis)

**November 2008:** International Cognitive Science Workshop takes place in Innovations in IT'08

An international workshop takes place with ten or so speakers from numerous countries globally, in the CIT building of UAEU, as part of the well-established international Innovations in IT conference, which is one of the biggest in the region.

**December 2008:** Defense of substantially revised UAEU RA Proposal

Finally, after two "accidental losses" and a non-justified decline, the proposal was "found" and was defended in a presentation by Dr. Karafyllis. We are awaiting the final results!

**January 2008:** "Cloud" diagram produced

Representing a mapping of current and projected areas and interests, and their relationship to laboratories. Aiming towards a future center of excellence to be created at UAEU.

And this is where we stand right now, 15 or more months since the beginnings of our efforts! Our company has grown much larger, we know each other and our fields much better, and we are all looking forward to:

- A world-class center
- An MS and PhD program
- New equipment
- Amazing graduate students
- Fascinating projects

... and more activities for strengthening and extending Cognitive Systems & Science in our wider region, be it GCC, the Arab World, the Middle East, or the Near East/Middle East/South Asia.

## **II. DEFINITIONS AND TAXONOMIES OF COGNITIVE SCIENCE**

Well, regarding the "definition" and "taxonomies" of our field, its extent, its constituent areas etc., many approaches exist: ranging from the more simplistic to the multi-faceted, from the ad-hoc to the systematic/generative and so on. A small sampling follows:

### **D1) The classic Mind/Intelligence-based definition**

i.e. "The interdisciplinary study of the mind / of the nature of intelligence"

### **D2) A component-disciplines-based view, usually including:**

Five: Psychology, Computer Science, Neuroscience, Linguistics, Philosophy, or:

Seven: Five + Social Sciences + choose\_one\_more

### **D3) A main-concepts-based view, that usually includes (plus much more):**

perception, attention, language processing, memory, decision making, action, learning, development

### **D4) A main-methodologies-based taxonomy, including:**

behavioral experiments, brain/neuroimaging, computational modelling, neurobiological

**D5) A historical viewpoint:**

Usually across a trajectory such as:...Plato, Aristotle, IbnSina, Descartes, Berkeley, Hume, Kant, Locke, Wundt, Watson, Miller, McCarthy, Minsky, Newell...

**D6) A labs-based view:**

Actually, arising from a finer granularity recomposition of D3 and D4.

**D7) A generative-compositional-model-based view:**

i.e. where one starts with a number of sets containing one list of mutually-exclusive categories each (could be across D2...D5), which furthermore are "orthogonal" to each other, and then starts composing them through a cartesian product, i.e. an ultra-simplified example would be:

{development, adaptation, evolution} x {language processing, memory, perception, decision making} x

{brain imaging, behavioral, computational} =

= {(brain imaging studies of developmental aspects of language processing),

(behavioral studies of developmental aspects of ...) etc.}

Such an approach could have generated a big part of the "cloud" we had produced, in a more systematic manner. Of course, some of the resulting combinations are either impractical or unexplored, but anyway the method provides a unificatory view of what seemed to be an adhoc "sky of arbitrary clouds".

As examples of the above, one can have a look at web resources, and also:

D3 and D5) The buzz-words slide from my presentation during the first meeting of the reading group of the cognitive science society

D6) The lab list that we generated for one of the proposals [see landmarks above, Proposal 1: "Cognitive Systems and Science Center" (Scholl, Mavridis & Idrissi)]

**CONCLUSION**

I have tried to present concisely two subjects that I think you would find quite interesting, namely the history of cognitive science at UAEU (including a list of landmarks), as well as the a small note on definitions and taxonomies of our field (that can provide a complementary view to the quite useful "cloud" mapping that we have produced) . I hope you have found this discussion both useful as well as interesting, and as always your comments and feedback are most welcome!

Looking forward to a great future for cognitive systems and sciences at UAEU and beyond,

Nicholas

