Fall 2005 Honors Seminar

IDH 4007: Minding the Body
http://www.cs.fiu.edu/~pasztora/webpage/honors/

Professor: Ana Pasztor

Class hour: Wednesday, 12:30—3:10pm

Office hours: by appointment

Contact: pasztora@cs.fiu.edu, ECS 357, tel. x72019


Mind Reader: this is a collection of articles/book excerpts that I put together for the class and that we will use as a second text.

Course Description:

Can machines be intelligent?

For decades now this question has given rise to innumerable exciting speculations, discussions, theories, scientific research papers, books, movies, and so on. And yet, it remains largely unanswered. This is not surprising, given that so far we have had no consensual understanding of human intelligence.

From its inception in the 1950s, cognitive science—a multidisciplinary field encompassing philosophy, psychology, linguistics, artificial intelligence, neuroscience, and many more disciplines—has inseparably linked the study of intelligence and the understanding of the human mind to the computer. While the computer model of the mind is being challenged by so-called second generation cognitive scientists, the metaphors employed by the first generation’s computational views of the human mind are so powerful, that they have greatly determined the vocabulary, the questions, the answers, and the methodologies used in the study of the human mind. Here are some of the basic questions we will discuss in this class: How do we represent information in our mind? What does representation mean? Is there a universal language of thought? Is it based on symbol manipulation? What is an adequate computer model of the mind? Does the mind, just like software, exist independently of the physical system of the brain (the hardware)? Can it be reduced to physical phenomena? Are mental phenomena computational in nature?

While first generation cognitive science is based on the hypothesis that thinking can be best understood in terms of representational structures in the mind such as rules, concepts, analogies, and/or images, second generation cognitive science challenges the representational view of the mind: it does not account for such aspects as emotions, consciousness, or more generally, subjective experience. As a consequence, cognitive science has experienced a shift away from the autocracy of reason (rationalism) toward an integration of body and mind. This shift deeply affects our understanding of ourselves, and our communication with others and the world. For each computational/representational view we discuss in class, we will also discuss its second generational, embodied counterpart by way of such materials as Johnson and Lakoff’s contemporary theory of metaphor, the intriguing neuropsychological cases studied by authors such as Damasio, Feinberg, and Ramachandran that provide a window into the self, and non-representational theories and models of intelligence developed by AI researchers such as R. Brooks of MIT and cognitive scientists such as Varela, Thomson, and Rosch, who used the holistic views of Eastern philosophies as their inspiration.

Requirements: Grades will be based on
1. One classroom presentation and discussion (25% of final grade)
2. Weekly quizzes (30% of final grade)
3. One twenty-page paper (25% of final grade)
4. Researching and sharing with the class additional resources; initiating and participating in class discussions (20% of final grade)

**One Classroom Presentation and Discussion.** Students will choose a topic closely related to material we discuss in class, and will give an original presentation on that topic. Students are expected to give an organized, thoughtful, informative, lively, and memorable presentation. Presentations are to last at least 30 and no more than 45 minutes. The presentation will be followed by a question and answer/discussion period. Presentations, must clearly identify a thesis/theory and the arguments offered in favor (or against) that thesis/theory. The presentation should also include: background/history on the topic, explicit reference to and material from related articles and, most importantly, critical reflection on the thesis/theory presented and the arguments used to support/reject it. Students will only use published resources. They will supply all reference details.

**Weekly Quizzes.** These will be short quizzes given each class and will cover the material of the previous and current week. No make-up quizzes are given unless the student cannot take the quiz at the regular quiz time for a certifiable reason and notifies me at least a week in advance. Students may prepare one sheet of notes to use for each quiz.

**One Twenty-Page Paper.** Students will write one twenty-page paper (single sided, double spaced, in 12pt) on readings and topics substantially different from that on which they give their presentation. They will only use references that have been published as books, journal papers, or proceeding papers. Students will try to use fairly new references. A written proposal for a paper topic will be turned in by November 16. The paper is due on the last day of class.

**Additional Resources and Initiating and Participating in Class Discussion.** The success of this class depends upon robust student participation. Students will do research related to the week’s topics/readings to find academic papers, books, news items/articles and share them with the class. Also, students will comment on and discuss what they read and what others say in class.

**Important Rules and Consequences.**

**I.** Students will explicitly reveal all sources they use for their class work and will read and understand the following documents on plagiarism:

http://www.hamilton.edu/academic/Resource/WC/AvoidingPlagiarism.html

http://owl.english.purdue.edu/handouts/research/r_paraphr.html

http://www.indiana.edu/~wts/wts/plagiarism.html

http://www.nwu.edu/uacc/plagiar.html

http://www.ohiou.edu/esl/help/plagiarism.html

**II. Students will:** consult appropriate sites on the internet for good presentation techniques and good paper writing; study the style of published papers, including reference styles; and follow the citation guidelines in a published style manual, such as The Chicago Manual of Style, Kate Turabian’s A Manual for Writers of Terms Papers, Theses, and Dissertations, or the handbook of the Modern Languages Association (MLA). These manuals can be found at the library; citation guidelines can be found online at http://www.wisc.edu/writing/Handbook/index.html. These resources also provide advice on research, writing, and avoiding plagiarism.
**III. Papers will be evaluated on the basis of:**

1. Relevance: the student poses and answers an important question in cognitive science.
2. Research: the student uses several sources in addition to the required texts. S/he indicates all her/his sources in detail, including authors’ names, title, year, publisher, page numbers.
3. Writing: the student writes clearly, without syntactic errors.
4. Argument: the student makes a compelling case for the answer s/he prefers, and considers alternative answers. Papers will be graded on the quality of the argument, not on the particular conclusion reached.

The best outline for the paper would be:

1. The issue. State the question you are trying to answer.
2. Alternatives. State possible answers to your question.
3. Evidence. Describe whatever (psychological, computational, neurological, linguistic, philosophical, and/or other) evidence is relevant to the different potential answers.
4. Conclusion. On the basis of the evidence for the different alternatives, argue for what you see as the best answer to the question.

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**Readings/Quizzes:**

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Mind, chapter</th>
<th>Mind Readings (TBA)</th>
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<tbody>
<tr>
<td>1</td>
<td>Aug. 31</td>
<td>Representation and computation</td>
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<tr>
<td>2</td>
<td>Sept. 7</td>
<td>Logic</td>
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<td>3</td>
<td>Sept. 14</td>
<td>Rules</td>
<td>3</td>
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<td>4</td>
<td>Sept. 21</td>
<td>Concepts</td>
<td>4</td>
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<td>5</td>
<td>Sept. 28</td>
<td>Analogies</td>
<td>5</td>
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<td>6</td>
<td>Oct. 5</td>
<td>Images</td>
<td>6</td>
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<td>7</td>
<td>Oct. 12</td>
<td>Connections</td>
<td>7,8</td>
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<td>8</td>
<td>Oct. 19</td>
<td>Emotions</td>
<td>9</td>
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<td>Oct. 26</td>
<td>Consciousness</td>
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<td>Nov. 2</td>
<td>Consciousness</td>
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<td>11</td>
<td>Nov. 9</td>
<td>Physical and social environments</td>
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<td><strong>Paper proposal due</strong></td>
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<td>Nov. 23</td>
<td>Future of cognitive science</td>
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<td>Nov. 30</td>
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<td>Dec. 7</td>
<td><strong>Paper due</strong></td>
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**Grading Chart:**

- **A** 100 - 90
- **A-** 89 - 85
- **B+** 84 - 80
- **B** 79 - 75
- **B-** 74 - 70
- **C+** 69 - 65
- **C** 64 - 60
- **C-** 59 - 55
- **D+** 54 - 50
- **D** 49 - 45
- **F** 44 or less