The baby, assailed by eye, ear, nose, skin and entrails at once, feels it all as one great blooming, buzzing confusion'
James. 1890. I. 488

How do we come to parse the ‘blooming buzzing confusion’ of our physical and social environments into meaningful representations? In the physical world are objects, their properties and the causal underpinnings of their interactions. The social world contains agents, their actions, and the mental states (e.g. beliefs, desires, intentions) behind them. This course will examine the extent to which these features are processed by developing humans and other animals during problem solving, and investigate the evidence for the proximate mechanisms underlying the abilities seen. Are pre-verbal infants and non-verbal animals restricted to using sensory/perceptual information when interacting with their environment, or can we see the origins of conceptual/abstract representations before the emergence of language? What can their competence tell us about how cognition has evolved?

This course will deal with some of the most controversial and thorny issues in comparative cognitive science. For each of the readings you are encouraged to prepare a single page document summarising the main points and outlining points for clarification and discussion. During the afternoon sessions there will be time to complete the reading if needed. We will explore the material through a mixture of demonstrations, exercises, and discussion sessions where each member of the group will present an informal 5-10 minute summary and some questions for discussion from one of the required readings.

Background reading:


Assessment:

The module will be continuously assessed: - 25% from a 1000 word summary of a debate position, 75% of the mark will come from a 3000 word review essay.

Debate position: In the first session, you will be assigned to the role of supporting or opposing one of the following two articles. We will hold the debates in session 5. Before then, you need to prepare a 1000 word summary of your argument, which will be assessed.

Essay: Discuss the evidence that human cognition is unique with respect to:
- Representing objects and their properties
- Causal reasoning
- Insight
- Inference
- Representing agents and intentions

Aims and Objectives:
- To understand research methods by becoming familiar with current literature.
- To realise limits in methods and theory through critical evaluation.
- To formulate new studies to advance the field.
- To debate the extent to which problem-solving is underpinned by conceptual thought and reasoning in humans and other animals.
- To communicate a reasoned argument grounded in evidence and current theory both verbally and in writing.

<table>
<thead>
<tr>
<th>Week</th>
<th>Content</th>
<th>Afternoon Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Objects</td>
<td>Designing an experiment</td>
</tr>
<tr>
<td>2</td>
<td>Causality</td>
<td>Designing a poster</td>
</tr>
<tr>
<td>3</td>
<td>Insight and reasoning</td>
<td>Writing a press release</td>
</tr>
<tr>
<td>4</td>
<td>Agents and Intentions</td>
<td>Class discussion</td>
</tr>
<tr>
<td>6</td>
<td>Debates</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Essay deadline</td>
<td></td>
</tr>
</tbody>
</table>
Session 1: *Introduction to the study of the origins of conceptual thought: The case of objects and their properties.*

Afternoon session: Experimental design practical.

Required reading -


Background/Additional reading

Object representation as a central issue in cognitive science

Laurie R. Santos & Bruce M. Hood


Session 2: *Causality*

Afternoon session: Designing a poster

Required Reading –


Background/Additional reading
Session 3: *Insight and reasoning*

Afternoon session: Science in the popular press

**Required reading -**


4. Call, J. (2007). Apes know that hidden objects can affect the orientation of other objects. *Cognition, 105*(1), 1-25. [https://doi.org/10.1016/j.cognition.2006.08.004](https://doi.org/10.1016/j.cognition.2006.08.004)

**Background reading**


Session 4: *Agents and Intentions*

**Afternoon session: Discussion of papers**


**Background/Further reading:**

Session 5: Debates

Discussion of 2 theories of human uniqueness. We will have 2 debates - using 2 BBS articles:


In each case proposers will put forward the argument made by the authors, and then opponents to argue against the 'motion' using a combination of the responses and their own critique. The first debate will be at 9, the second at 2. Half of the class will participate in each debate, the other half will listen and ask questions.