

Spatial Representation and Multisensory Perception workshop
Senate House
Friday 28 November 2014

10.00 – 10.30 Registration and coffee

10.30 – 11.30

Session One: What do we mean by a representation of space?

1. Can we draw a distinction between mere encoding of spatial information and the representation of space?
2. What is it to represent spatial relations between places or objects?
3. How are spatial relations between places or objects represented?
 - a. Does it require a map-like representation?
 - b. Or merely the encoding of information in a way that subserves some task?
4. If we can distinguish representation from information encoding, when and why are representations of space required?
 - a. Are representations required for our *awareness* of spatial relations?
 - b. Are there certain kinds of *tasks* that require representations of space?
5. What is it to represent the spatial properties of objects?
 - a. Can we distinguish representing spatial properties of objects and encoding spatial information about objects?
 - b. If we can, when and why are representations of space required?

11.30 – 12.00 Break

12.00 – 13.00

Session Two: Is there a single representation of space common to all modalities?

1. What reasons are there to think that there is? Are there reasons to think that there isn't?
 - a. Does the phenomenology of our experience imply a single representation of space?
 - b. Does our awareness of spatial relations across modalities require a single representation of space?
 - c. What is a single representation of space required to explain?
2. What *is* a single representation of space? I.e., the existence of what kind of encoding of spatial information with what functional properties would constitute a single representation of space?
3. What would show that there is a single representation of space?
4. Is there a difference between representing two things as in a single space, and representing a place/object as the same place/object when it is perceived with two or more senses?
5. Are the spatial properties of objects represented in the same way across all modalities?

13.00 – 14.00 Lunch

14.00 – 15.00

Session Three: Can we distinguish perceptual and non-perceptual representations of space?

1. Does our experience of space draw on non-perceptual representations – drawn from memory, say – as well as on perceptual representations?
 - a. What role do such representations play in multi-sensory perception?
2. Is spatial imagery associated with sensory modalities other than vision?
3. Is there multi-sensory spatial imagery?

4. To what extent is the idea of a single representation of space grounded in the idea of a single 'non-perceptual' representation of space?
5. Should we think of the representation of space as non-perceptual in a stronger sense, i.e., as cognitive?
6. What makes a mental representation of space a perceptual representation of space?

15.00 – 15.15 Break

15.15 – 16.15

Session Four: Are there modality-specific representations of space?

1. How do we individuate modality-specific spatial representations: What makes them spatial? What makes them visual or tactile?
2. Should we distinguish states that encode spatial information and states that represent spatial properties?
 - a. Is there a multiplicity of spatial representations within different perceptual systems?
 - b. Or is there a multiplicity of states that carry spatial information?
3. If there are many spatial representations, do they (or some significant number of them) come together to produce a single representation associated with each sense modality?
4. Can we sketch the functional architecture of spatial representation in perception?
5. Do we need to distinguish between representations for perception and representations for action in the sensory modalities other than vision?
6. Should we think of the spatial representations that function as input to the motor system as modality-specific?
 - a. Or, do the different senses contribute to the construction of a single perceptual representation for action?
7. Are spatial interactions between the senses always interactions between properties that objects are represented as having, or are there examples of interactions between representations of space as such?

16.15 – 16.30 Break

16.30 – 17.30

Session Five: Spatial interactions and integration

1. Is it possible to provide a framework for understanding the various ways in which spatial interactions occur?
2. Does looking at the functions of different representations of space help us catalogue the kinds of interaction that there are?
3. How should we understand interactions between systems and the integration of information across systems?
 - a. Should we understand them in terms of the integration, mapping or recalibration of spatial information?
 - b. Or should we understand it in terms of the combination or alteration of spatial representations?
4. Should we take Bayesian accounts to describe mechanisms of integration, or are they merely describing the constraints that mechanisms satisfy?
5. Are the mechanisms and functions of interactions involving non-redundant information different to those involved in spatial interactions?

19.45 Dinner