

# Consciousness: a discussion

Praveen Paritosh

Week 8: Fall 2004: CogSci 207

Thursday, November 18, 2004.



# *What do you think?*

- Being able to analyze your own thoughts/actions.
  - Without explicit analysis.
  - Animals with little memory?
  - Animals conscious since they make survival judgements.
  - Comatose?
  - Episodic memory central to consciousness?
  - Virtual vs Real Consciousness – what else besides self model?
  - Language and consciousness.
  - Are we being held back by a humanist morality?
  - Cognitively closed to articulating about consciousness.
  - Matrix. TMNT.
- 
-

“consciousness. The having of perceptions, thoughts, and feelings; awareness. The term is impossible to define except in terms that are unintelligible without a grasp of what consciousness means. Many fall into the trap of equating consciousness with self-consciousness – to be conscious it is only necessary to be aware of the external world. Consciousness is a fascinating but elusive phenomenon; it is impossible to specify what it is, what it does, or why it evolved. Nothing worth reading has been written on it.”

– Stuart Sutherland,  
*The International Dictionary  
of Psychology*

---

---

“As recently as a few years ago, if one raised the subject of consciousness in cognitive science discussions, it was generally regarded as a form of bad taste, and graduate students, who are always attuned to the social mores of their disciplines, would roll their eyes at the ceiling and assume expressions of mild disgust.”

– John Searle

---

---

For many years after James penned *The Principles of Psychology* ... most cognitive scientists have ignored consciousness, as did almost all neuroscientists. The problem was felt to be either purely “philosophical” or too elusive to study experimentally ... In our opinion, such timidity is ridiculous.

- Francis Crick and Christopher Koch, 1992.

---

---

## *Pat Hayes' summary of the philosophical debate about consciousness*

- *Maybe THIS is how consciousness works (yaddah, yaddah)....*
  - *Pschaw! I can imagine something just like that without it being conscious.*
  - *I don't think you can.*
  - *Oh no? Let me tell you, I can imagine something which is just like you, an exact copy right down to the atoms, and it behaves just like you and it even believes what you believe and wants what you want, but it's not conscious. It's just a zombie. So there.*
  - *That seems impossible to me.*
  - *You just havn't got enough imagination, that's all.*
- 
-

# *Why do consciousness?*

- Consciousness is a natural phenomenon. If our theory of the universe does not explain consciousness, then maybe we do not have a good theory of the universe.



# *Legal implications*

*actus non facit reum*

*nisi mens sit rea*

“as a vicious will without a vicious act is no civil crime,  
so on the other hand, an unwarranted act  
without a vicious will is no crime at all”

Blackstone

---

---

# *David Chalmers*

Consciousness: What are the phenomenon?

- Easy Problems: Third person data
  - Processes and behavior
- The Hard problem: First person data
  - Subjective experiences
- Ontology extension? What will his answer look like?



# *Third-person data*

- Wakefulness
- Perceptual discrimination
- Integrated control
- Access & self-monitoring
- Verbal Reports
- Focused attention
  
- Data re underlying brain processes

“The easy problems”



# First-person data

- Visual experiences e.g. color, depth, ...
- Other sensory experiences e.g. sound, taste, ...
- Bodily sensations e.g. pain, orgasm, ...
- Mental imagery e.g. recalled visual images, ...
- Emotional experiences e.g. happiness, anger, ...
- Stream of occurrent thought e.g. reflection, decision, ...

All are states of subjective experience: there is *something it is like* to have these states.

The “hard problem”.

---

---

# *Example: Musical Processing*

- Third-person data
  - Sound wave patterns
  - Processes in auditory cortex
  - Behavioral reactions
  - Verbal reports (actual and potential)
- First-person data
  - Musical experience

# *Chalmer's Proposal*

consciousness is a fundamental property of matter—  
fundamental in the sense that it cannot be reduced to  
anything else, like mass and charge.



# John Searle

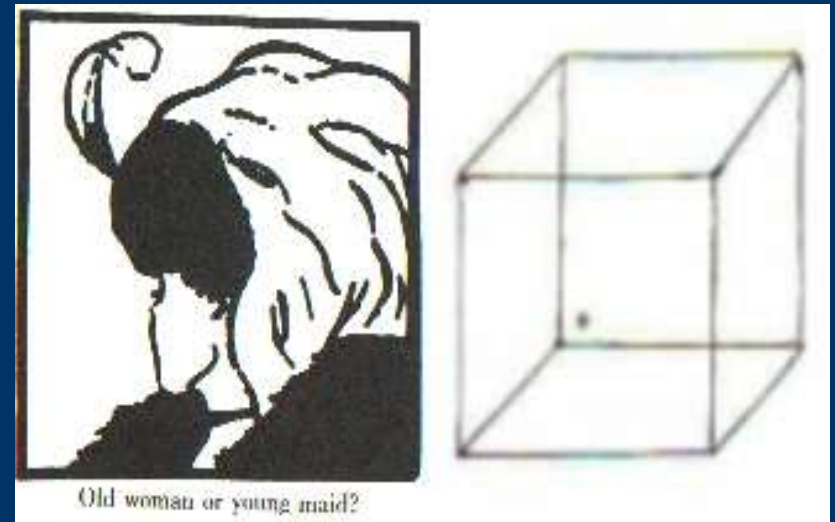
- Consciousness as a neurobiological problem
    - We are conscious.
    - We know for a fact that the brain processes cause all that we associate with consciousness.
    - So, lets find the Neural Correlates of Consciousness (NCC).
  - Some questions in this research program:
    - How do brain processes cause conscious states?
    - How are conscious states realized in brain structures?
      - Is consciousness localized in certain regions of the brain, or is it a global phenomenon?
      - If it is localized, where?
      - Is it at the level of neurons and synapses, or higher functional levels like neuronal maps (Edelman 1992), or clouds of neurons (Freeman 1995), or below the level of neurons to the levels of microtubules (Penrose 1994)?
- 
-

# *John Searle: Essential feature of consciousness*

- Unified, qualitative subjectivity
    - Qualitativeness: the qualitative feel of a conscious state.
    - Subjectivity: Conscious states have first-person ontology.
    - Unity: There is one unified conscious field.
      - Split-brain patients (Gazzaniga 1998): two centers of consciousness communicating imperfectly.
      - The Binding problem: e.g., how do anatomically separate neurons specialized for such things as line, angle and color all contribute to a single, unified, conscious visual experience of the object?
        - Crick (1994): Neural firings in the general range of 40 Hz in thalamocortical system.
- 
-

# Searle: Two approaches to understanding NCC

- Building block model: for instance, what it feels to see Red? Taste coffee? Can be studied separately.
  - Blindsight: V1 damage, can report but no awareness.
  - Binocular rivalry, Gestalt Switching: same perceptual input leading to different subjective experiences, one at a time.
  - NCC of vision.



# *Searle: Building block theory might be wrong.*

- Unified field theory: cant study separate aspects of consciousness separately to explain it.
  - Key idea: In order to have visual (or any specific type of conscious) experience, we have to be conscious already.
  - What we need to study is the conscious brain vs the nonconscious brain.
- 
-

# *Daniel Dennett*

- Capture content of conscious states by a functional account of what we can do with them.
  - Otherwise, you are just positing a witness in the cartesian theater confronting this contentful state.  
Now what?
  - Virtual machine: a serial information-processing mechanism (which is implemented on some kind of neural hardware).
    - Paul Churchland: recurrent neural-network substrate.
  - The Joycean machine: An implication of Dennett's view is that animals and human are not conscious in the same way, there is something more about our consciousness.
- 
-

# Modeling Consciousness

- Step 1: Allow the system to be able to talk about itself, “I”. Many different aspects of self:
  - bodily location (I am not in Kansas)
  - locus of narrative memory (I recall reading Proust)
  - epistemic agent (I *know* I left it here somewhere.)
  - social agent (Do I know you?)
  - source of intentionality (I was referring to the mint sauce)
  - the ‘free will’ (I’m in charge here.)
  - ...and probably more.