

# Consciousness 2

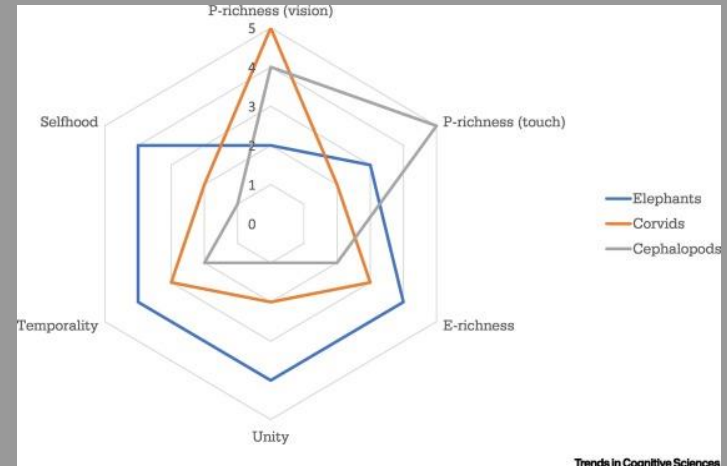
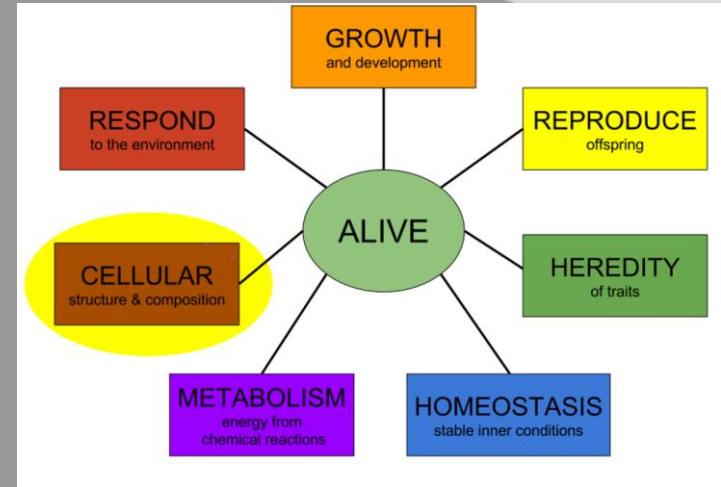
Dualism and Arguments against Neuroscientific Progress

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# Life and Conscious Experience Analogy

- Is this a useful analogy?
  - We have a comprehensive if not complete story of biology.
  - Dr. Churchland uses this analogy to show the possible benefits of looking at consciousness in the same way.
- Vitalists of the 20th century believed that dead matter cannot make living matter.
  - The complexity and organization of a cell/organism detract from the urge/vital spirit argument of life.
  - There is roughly 100 trillion atoms in a single cell, and 30-40 trillion cells per human.
- This analogous approach to understanding provides empirical possibility, but not certainty.



# Nine Naysaying Arguments

- I cannot imagine how science explains awareness
- There could be zombies
- The problem is too hard
- How can I know what you experience?
- So who is right?
- Doesn't neuroscience leave something out?
- It is ridiculous to expect a reduction from the behavioral level directly to the neuronal level
- Consciousness is not a neural effect but a subatomic effect
- Science cannot solve all problems

# I cannot imagine how science explain awareness.

## Argument from Ignorance

- Science doesn't understand aliens (p),
- Therefore aliens (p) can never be explained
- Nothing science could ever discover will deepen our understanding of aliens (p)
- Aliens could never be explained in terms of properties of biology, physics, or psychology (s)

## Two supporting thoughts

- “From the fact that we don't know something, nothing interesting follows – we just don't know.”
  - These statements don't add knowledge.
- Mysteriousness of concept is not fact about the abstraction, but a fact about our relationship to it.
  - The inability of an individual to imagine how a complex organization of dead material becomes alive.

# There could be zombies.

- Running through a thought experiment
  - Imagine a person without pain and no blue in vision
  - Rather than being a person, this creature is a zombie.
- Conceivability leads to logical possibility.
  - Consciousness is independent of the brain's activities.
  - While logically possible, it is not empirically possible.
    - A proper rebuttal must foreclose logical possibilities in this debate.

# What makes a good explanation?

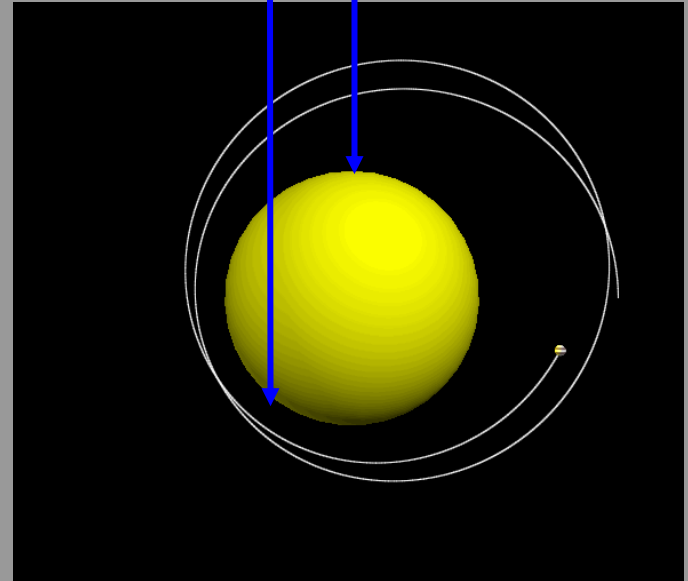
- A good explanation rules out empirical possibilities.
  - This argument is nothing more than “philosophical self-deception”
  - It depends on the group mentality and self-made conceptions
- For example, run through a theoretical zombie apocalypse.
  - The zombies can reproduce and function like us.
  - However, they are dead
  - This makes “life explanatorily independent of biology (Churchland, p. 178)”.
- Zombies are unlikely to exist.
  - Grammatically, it makes sense.
  - The argument does not pose a true possibility based on empirical data.

# Hard until it's not.

- Precession of the perihelion of Mercury (A)  
vs. a star's composition (B).
  - A - General relativity about 1915.
  - B - Spectral analysis was discovered in 1860.
- Protein folding
  - $10^{50}$ - $10^{300}$  possibilities depending on the size of the protein.
  - Alpha Fold 2 - Deep learning AI with a 90% folding accuracy at the December 2020 CASP14.
- These problems illustrate the fallacy in arguments from ignorance.
  - From an ignorant vantage points (now) certain challenges (consciousness) seem impossible to understand from a pragmatic standpoint.

The chemical composition of a star.

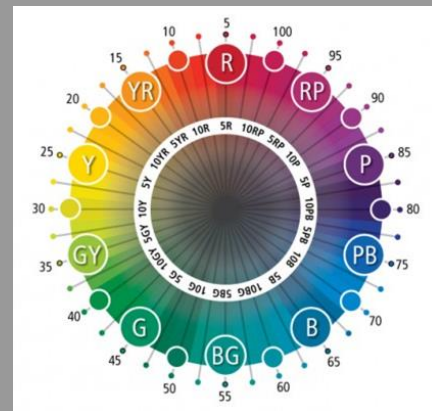
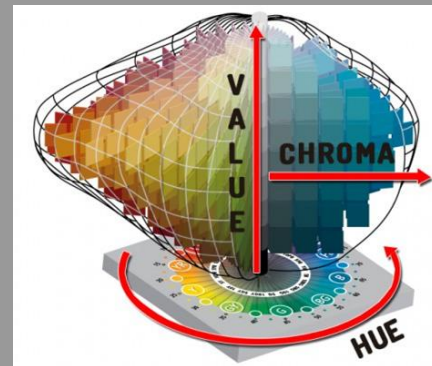
The closed part of Mercury's orbit moves.



# Is your red my red?



- The inverted spectrum problem.
  - What if what my experience of red is your experience of green, and vice versa?
- Could conceivably vs. could actually are different.
  - Logically possible doesn't equate to realistically happening.
- Munsell 3D color space.
  - Yellow is more similar to white than any other color.
  - Green, yellow, orange can be discerned in greater detail than blue. Adaptive advantage.





# What hypothesis could explain color qualia fully?

- The activation and inhibitory signals are not purely independent.
  - The qualia rely on three cones for inhibitory and excitatory signals.
- Hypothesize that color qualia are linked by opposite cells.
  - Makes causal and relational properties explicable.
  - Without the link, it would be coincidental.
- How do the coding triplets react to anesthesia?
  - Coding triplets may be active without the person's visual attention.
  - Must need to restate the hypothesis.

# Dualist Rebuttal

- A well designed color flip is still conceivable.
- However, she also argues that neither the dualist or materialist knows much about qualia, specifically what features are essential.
  - Because of this ambiguity the dualist must explain how the only essential feature of qualia is our introspective judgement, if the other features are inessential.
    - Dualist has introspective nature - I experience color.
    - Functionalist has functional nature - Color helps us navigate the environment.
    - Reductionist has structural similarity - The Munsell's 3D color space.
- Her two arguments against introspection holding a monopoly on what features of qualia are essential are
  - Phenomenal judgement inversion syndrome, which she does not like, but uses.
  - Quine's assertion that no claim is immune to revision, and that the meaning of words is not independent of the beliefs attached to those words.

# So who is right?

- The dualist could still be right.
  - The thought experiment does not make a good argument.
  - However, it is possible that color qualia are components of the metaphysical.
- How could discussion be opened again?
  - The dualist comes back with a competing theory.
  - The theory must have “comparable specificity, supporting evidence, and explanatory power (Churchland p. 192)”

# Doesn't Neuroscience leave something out?

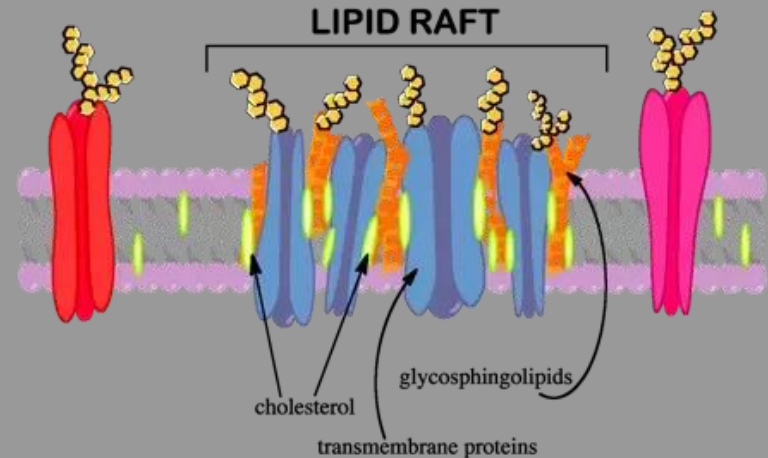
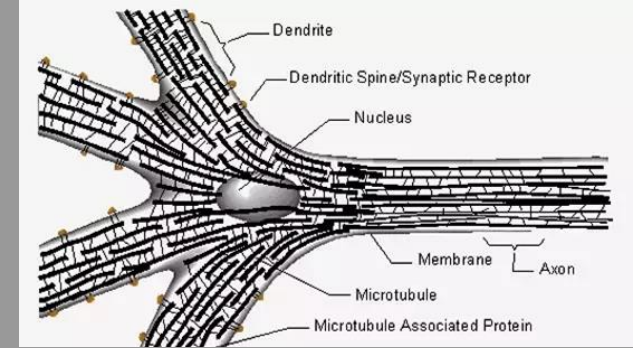
- Understanding the theory of neural coding of color does not say anything about the sensation of the color.
- A color-blind person can learn about this theory, but it would not restore the phenomenal experience.
- It's not a problem with the theory.
  - The reason a person lacks certain color sensations explained by the theory as lacking a cone type.
- This line of thinking infers that her answer is no.

# It is ridiculous to expect a reduction of from the behavioral level directly to the neuronal level

- Many levels of neuronal organization
  - Larger networks stem from smaller ones
  - Mid-level concepts are used to understand these networks
- The statement represents a fault in reductionism.
  - Reductionists link high level and low level networks directly.
  - More questions can be answered by using both direct and indirect approaches.

# Consciousness arises at a subatomic level

- Sir Roger Penrose and Dr. Hameroff's Orch-OR theory suggests that consciousness is the byproduct of quantum computations performed by the microtubules of neurons.
- Dr. Churchland entertained this idea, but was not convinced.
- A SciShow video from September 2020 presents an observed cellular mechanism for how anesthesia works.
  - Explanation implicates enzymes released by the disruption of lipid rafts. PLD2



# Science cannot solve all problems

- Zeno Vendler's admonition about science
  - "Science cannot expect to solve all problems, answer all questions" (Churchland, p. 197)
  - True, science cannot answer all of life's problems.
- Science can still answer many questions
  - Neuroscientists discovered many solutions at the time.
  - These accomplishments helped to answer many questions.

# Conclusions and Endnotes

- The inverted spectrum problem is the main philosophical question approached in this chapter.
  - She admits that it is difficult and that there is no real answer as of yet.
- A sizable portion of this section is based on her and her husband's work in 1996–1998.
  - The I cannot imagine argument.
  - That a majority of the argumentation against the inverted spectrum problem, such as the complexity of the Munsell 3D color space.



# SMELL Test

- S (Source): Dr. Patricia Churchland
- M (Motivation):
  - To present several of the most prominent positions against the use of neuroscience as a way to understand consciousness.
  - To counter those arguments using logical analysis and then recent discoveries.
- E (Evidence):
  - Usefulness of the structural analogy between life and experience.
  - Argument from ignorance fallacy.
  - Neurological framework of the visual system.
  - Orch-OR subatomic theory of consciousness. (less likely to be right)
- L (Logic): Yes, most of her argument, which is based on how color is processed by the brain's visual system makes sense. She shows that empirical evidence (neural circuits) can be tested producing more evidence than thought experiments (hypothetical zombies).
- L (Left Out):
  - Only two testable theories, and a lot of word play.
  - She only empirically attacks one metaphysical feature of consciousness, sensation of color, but consciousness is more than color. Examples being mathematical qualities (one person has two arms), and religious/mystical experiences that sometimes lack descriptive qualia or are perceived to have a version of infinite qualia (omnipresent, omniscient God).

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