Animal Consciousness

A very brief introduction

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Master Vegetarian Program

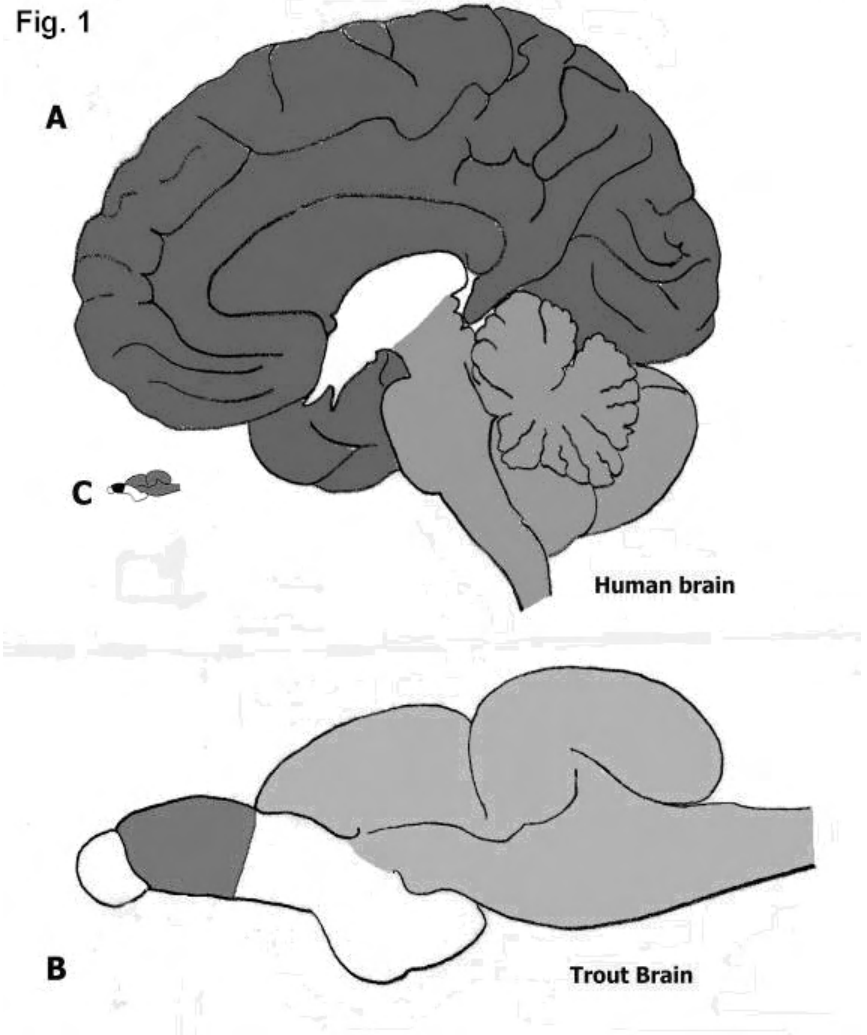
What is Consciousness

- Knowing or feeling
- Able to feel and think – awake
- What makes us conscious?
- How do you prove consciousness in others?

Can fish think and “feel” pain?

Dr James Rose:

- In humans, pain is processed in the neocortex of the cerebrum
- Fish responses to stimuli are controlled by lower brain
- Fish have a tiny cerebrums and no neocortex.
- Therefore, Rose thinks fish do not have the brain structures needed to perceive pain.

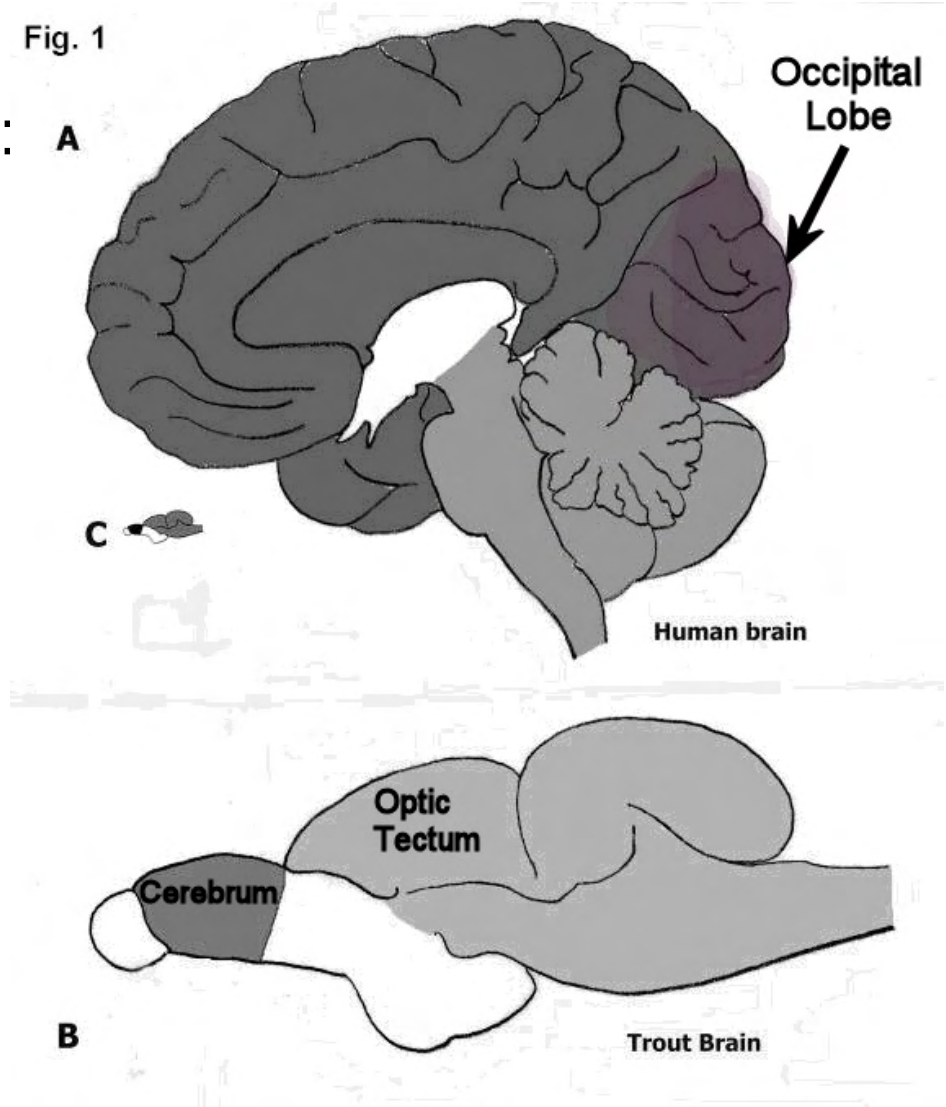


Can fish really “see”?

Can fish “see”?

Analogy to Rose’s argument:

- Humans process vision in cerebrum occipital lobe
- Fish process vision in a lower brain area
- Fish cerebrum too simple to process vision
- Therefore fish cannot really perceive what they are seeing because they don’t have the required brain structures???



Arguments that fish do feel pain

- Fish have “pain” sensing neurons
- Injecting fish with bee venom makes them act like they feel pain
- Pain is adaptive – it helps us learn to avoid dangerous situations and keeps us from damaging ourselves
- Fish can learn, but if they cannot feel pain how can they learn to avoid what is hurting them?

View of consciousness

- Consciousness is related to the ability to focus on what is important and to ignore or pay little attention to all the other inputs
- Humans have far too many senses to be able to fully process them all at once
- You have to focus on only certain inputs, but can change your focus

Fish consciousness?

- Fish have nearly as many sensory inputs as we do, and some we don’t have.
  - Well-developed sense of smell
  - Well-developed vision
  - Poor hearing, but lateral lines to detect vibration/movement in water
  - Weak electric field in some fish to reflect off objects
- Fish too need to focus only on what is important in order to survive.
- Could this ability to voluntarily shift focus be considered consciousness?

Brain structures and consciousness?

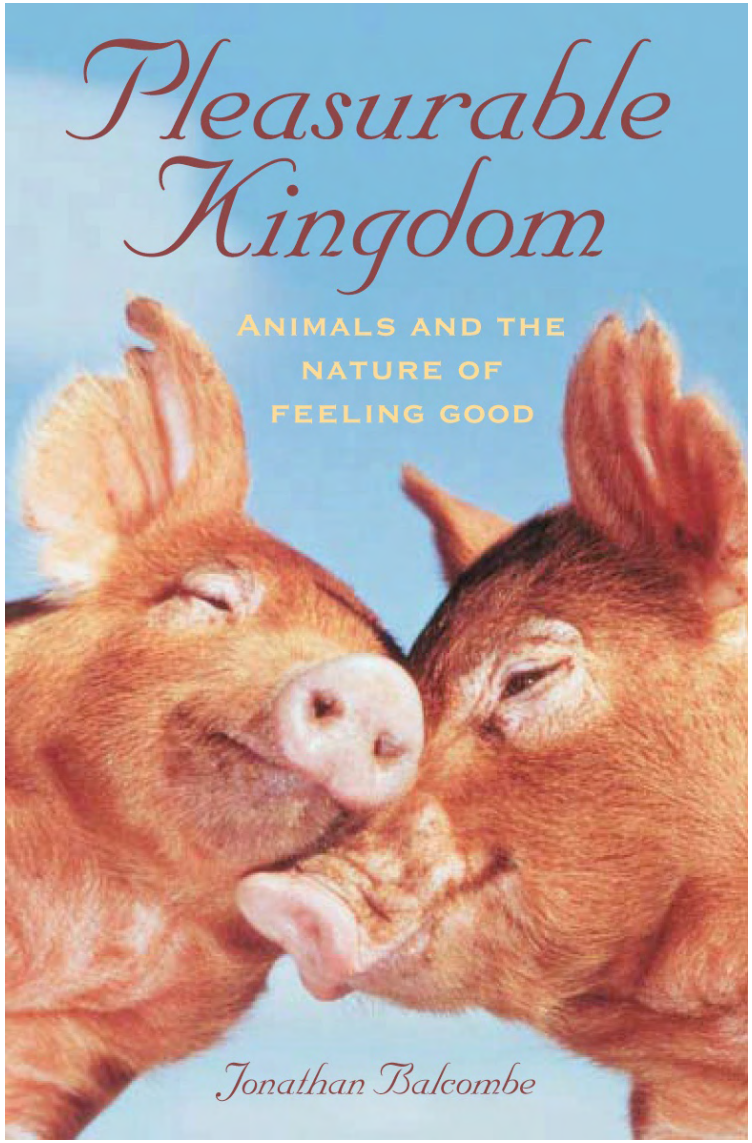
- Fish brains can successfully coordinate multiple sensory inputs with directed motor output.
- Fish brains can do this without a well-developed cerebral neocortex.
- To assume that a neocortex is required for consciousness is to take an extremely anthropomorphic view of consciousness.
- Fish do have very small brains though, so do not expect too much in terms of complicated behavior or learning.
- In vertebrates that evolved from fish, the cerebrum grew in dominance and appears to now dominate conscious activity.

Alex, Griffin, Wart, and Irene Pepperberg

(see March 2008 National Geographic)

Animal Pleasure

- Pleasure is adaptive
- Pleasure rewards us for adaptive behavior
- The behavior may be adaptive, but we do it because it feels good.



Is life in the wild a grim struggle for survival?

Animals do have fun in the wild

- Eating
- Play
- Sex
- Touch

and singing?

Photo: Martin Harvey