

Consciousness ...and the Octopus

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Abstract

A solution of the problem of consciousness / self is proposed as two brains speaking to each other, with the need of a common reference. It's also suggested to investigate, as further research, the "intertalk" among the 9 brains of the octopus.

Preliminary distinction

For an effective discussion, we must clearly separate **three distinct meanings**:

1. **Medical**: biological on/off switch of being awake vs. fainting or being in a coma.
2. **Cognitive**: biological information system monitoring our body, processing data, and guiding our movements within the environment (this is our only focus).
3. **Moral**: social / cultural understanding of right and wrong (clearly outside the scope of this paper).

Introduction

Philosophers often speak of the "hard problem" of human consciousness, i.e. the purported mystery of not just processing data, but also **feeling experiences from the inside**, with the purported twin problems of "**self**" and "**qualia**". This paper argues that the former has a quite direct explanation, while the latter is apparent.

Intertalk between brains: the vertebrate architecture

A living organism must constantly guard its physical boundaries, in order to stay alive and avoid decay. In vertebrates, this survival mechanism relies on **two separate "non-twin" brains**, *grown from different embryonic lines*, sharing the same skull:

- **Brainstem and autonomic system**, which only sense the internal state of the body. If there is damage, it generates raw data: *"Damage occurring. Pain."*
- **Cerebral cortex / intellect**, which looks outward, mapping sensory details and physical movements. It calculates: *"The moved arm collided with a solid object."*

We model the concept-and-feeling of "self" as the **common information reference** needed when these two systems — guarding the boundaries of the actual body from inside and outside — talk to each other. When the outside-dedicated brain translates the event to the inside-dedicated non-twin — *"You feel pain because I moved the arm and hit a sharp corner"* — this intertalk requires a shared reference.

While this dual embryonic origin is a conserved hardware architecture across all vertebrates, the explicit emergence of the "self" — "felt you" and "knowing I" mixing into a common "felt-and-known me" — requires a specific threshold of recursive symbolic computation. In humans:

- This internal dialogue forces the system to name a unique reference to connect the two maps when the object-subject boundaries and the skull are the same.
- Self-awareness is a single, recursive loop: the intellect readily knows to know about the self.

Qualia

Within this framework, the purported mystery of "qualia" disappears. Qualitative experiences are just the perceived output of a local specific biology, physically settling down when responding to a specific input. If the biology is broken or genetically different (such as in color blindness), the way it settles changes, and the internal experience shifts. Our agreement on these sensations is purely linguistic and social: we agree to call a certain wavelength "red" to communicate effectively, not because our biologies are identically tuned.

Removing the boundary in meditation

The state of awareness found in deep meditation or Buddhist philosophy serves as a hint confirming this model. It represents the intentional silencing of the self boundaries by temporarily relaxing the rigid distinction between inside and outside, preventing the mind from isolating the self as a separate entity.

Future research: the octopus as a comparative model

To verify this dual-hardware framework, we must look outside the vertebrate lineage. The optimal model for expanding this theory is an intelligent organism that completely lacks the shared cranial interface of separate embryonic nervous systems: the order Octopoda.

The octopus possesses 1 central brain and 8 independent, highly complex nerve centers inside each arm. Every arm processes sensory data and executes movements locally, sending only high-level summaries to the center. This internal

communication is a decentralized group discussion rather than a linear duetto between two cranially enclosed systems.

The octopus represents the ideal comparative control: since it lacks the vertebrate single, centralized geometric interface between internal and external guarding, a permanent, monolithic "self" should not exist. Investigating the intertalk of this decentralized network will test how a biological system can achieve high intelligence and environmental integration without possibly developing a central ego.

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