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Discussion on Explicit Consciousness, Sub-Consciousness, and Self-Awareness in a Conscious System

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Abstract

What is “self-awareness”? How can explicit consciousness and sub-consciousness be mapped in relation to each other? How are they related to the self? How can these entities be represented in an artificial conscious system? These questions are the focus of this article. People are aware of only the behavior that they are focusing on; they cannot be directly aware of routine behavior such as walking and breathing. The latter is generally called unconscious behavior, and here we call it sub-conscious behavior. To understand self-awareness, therefore, firstly it is important to map explicit consciousness and sub-consciousness, which is where the self is deeply involved. We consider that if there is no self that refers to itself, no one can be aware of what he himself is doing. In this study we map explicit consciousness and sub-consciousness using an artificial conscious system, and then make a new proposal about the relationship between self-awareness and the self.

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1 Introduction

In this paper we focus on the phenomenon of human self-awareness. Self-awareness refers to a state in which you are aware of what you are doing. In what conditions does self-awareness arise? It seems that the rise of self-awareness requires the behavior of explicit consciousness, i.e., the state of the self being aware in a concentrated manner. Actions such as walking and breathing are not considered the kind of behavior people are usually self-aware of. They are generally performed in the state of unconsciousness, which we call sub-conscious behavior. To understand self-awareness, first we need to map the relationship between explicit consciousness and sub-consciousness.

In this paper, we firstly map this relationship of consciousness and then propose an artificial conscious model that describes self-awareness.

2 Mapping of Explicit Consciousness and Sub-Consciousness

Firstly, what is the behavior of explicit consciousness and of sub-consciousness? If you are concentrating on what you are doing, it is an act of explicit consciousness. If you can do it without concentration just by following your experience, it is an act of sub-consciousness, like breathing and walking.

What is the behavior that requires concentration? We assume this is where the self comes into play. Firstly, we describe the self as a representation that connects to all affairs of oneself. For example, your fingers or feet connect to the “representation of self” as a component of your body. Of course they each have their own representation, such as a finger or a foot, and connect to the “representation of self.” We would like to describe the state of concentrated consciousness by saying that the representation of self becomes SHOUKI. SHOUKI here means a state in which a cognitive representation of MoNADs converges to a constant value (Matsushita, 2015). How can we describe the state of concentrated consciousness using an artificial conscious system? First, we considered setting a flow through the Association subsystem (Takeno, 2013). The Association subsystem has a reconciliatory (settling) role in the connection between the Reason subsystem and the Emotion & Feeling subsystem. By connecting the Association subsystem with the self as a representation that connects all affairs of oneself, the information of consciousness that has been made explicit becomes connected with the “representation of self”. This made us think it is possible to map the relationship between explicit consciousness and sub-consciousness using the Association subsystem. Based on this idea, we constructed a simple model consisting of four MoNADs, i.e., conscious subsystems N1 and N2, the Association subsystem (As), and the self (S), as shown below (Figure 1).

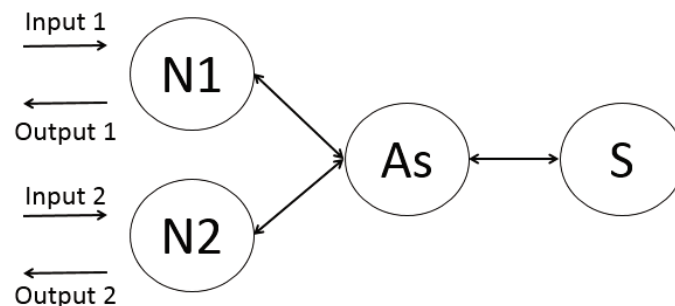


Figure 1. Conscious system model that describes self-awareness

When the Association subsystem (As) is in organic connection with N1, N1 is of explicit consciousness, and N2 is of sub-consciousness. When the Association subsystem is in organic connection with N2, N2 is of explicit consciousness, and N1 is of sub-consciousness. In the former organic connection, As is exchanging inputs and outputs through N1 with the inner or external environment (Input 1 and Output 1). In the meantime, although N2 also is exchanging inputs and outputs (Input 2 and Output 2), it is doing so independently of As, i.e., As is not communicating with N2.

3 Self-Awareness and the Body's Responses

Self-awareness, as described earlier, is a state in which you are aware of what you are doing (Lynn, 2003). This suggests that self-awareness may be deeply associated with the self and explicit consciousness. It is said that people in self-awareness can talk about what they did consciously. In our

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