

## WHAT IS CONSCIOUSNESS?

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Consciousness is a state of being aware: aware of self and of one's surroundings. This awareness provides a relationship with the surroundings, a feeling of opportunity to assess and act upon the feelings and, is of course, the basis for an identity of our 'self'.

Descartes' famous statement '*cogito ergo sum*' (I think therefore I am) may be a recognition of our own individual existence, and therefore consciousness, but it does not demonstrate the existence of any world around, or of other people or of our individual identity. Establishment of a personal identity requires appreciation of one's relationship to the world around and other people and this requires interaction with the outer world. We develop and validate our appreciation of the world around us by actions based on our appreciation – and use any errors or discrepancies identified to refine that appreciation. Thus consciousness does involve sensory interaction with the world around and involves appreciation of the consequences of actions based on this appreciation. There is no dualistic separation between mind and body. The mind and consciousness are a coherent part of the person.

An interesting question is whether or not a computer system can, in principle, be conscious. One significant component of awareness is sight. Certainly computer systems can receive pictures of their surroundings and can store, retrieve and analyse these. I think computer systems can, or will be able to, identify components within a picture – chairs, tables, people, etc. Will they be able to recognize 'my' chair? My chair may be physically identical to a number of others in the picture, but I, as a human, know it is my chair because I put it in that location. That chair was the one I bought from IKEA last year, not the one I got from the local second hand shop. Thus there is need for consciousness to include personal as well as relevant item history in the assessment of the visual picture. Thus 'seeing' is a lot more than analysis of a visual image.

I guess the same influences of personal history apply with input by the other senses. Very subtle variations in the quality of a sound image (timing, background noise, etc) could enable one to identify that that was the piece I played last Sunday in the afternoon. While one might imagine a computer system being able to analyse a sound signal pattern and say whether it was the same or different from another, it is a much higher order of assessment to use the experience of, say, hearing the playing characteristics of a particular performer to recognise him as the player of a piece never heard before - or perhaps one he has never played before.

Many animals are able to recognize members of their family or group in ways we have not begun to understand. This surely is also consciousness.

There are caveats to the above description of consciousness: first, that one can be conscious without any immediate direct external inputs – for example, imagining things or remembering a dream. Second, is the phenomenon of 'blindsight' – where a person is blind but retains the nerve sensory pathways and sensory processing areas of the brain. In this condition the person may be quite unable to 'see' a spot of light on a wall, but is quite capable of accurately pointing at it. Then there is the phenomenon of phantom limbs for amputees.

There is more to the 'self' than consciousness and the role of the sub-conscious needs to be included as well as one's memories. The topic of 'self' of course links to that of 'identity' and of the meaning and existence, or not, of a 'soul'.

As regards the ability of a computer system to be considered 'conscious' I think any such system would need:

- a) to recognize items within its sensory perception of the world around
- b) be able to link these appropriately to relevant prior experience and background information
- c) be able to provide external evidence of these appreciations – for example by pursuit and assessment of the consequences of interactions with the world around