

Persons, brain bisection, and the unity of consciousness

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In ‘Brain bisection and the unity of consciousness’, Thomas Nagel suggests that data involving brain bisection calls into question the view that we can make sense of the idea of a mind, or a unified consciousness. If we think, with the psychological theory, that persons are to be explained in terms of minds or consciousness, this might seem to cast doubt on the coherence of the concept of a person. In this sense, the brain bisection data + the psychological theory of personal identity might seem to lead to skepticism about persons.

1 The data

The (very) bare essentials of the data are as follows. The brain has two cerebral hemispheres, which are connected via the corpus callosum, which can be thought of as an information pathway between the two hemispheres. The two hemispheres are connected differently to the rest of the body. In particular:

- Images on the left half of the retina (so from the right side of the visual field) only go to the left hemisphere, and vice versa.
- Aside from the head and neck, tactile input from the right side of the body only goes to the left hemisphere, and vice versa.
- For the most part, aside from the head and neck, the right hemisphere controls movement of the left half of the body, and vice versa.
- Speech output is controlled only by the left hemisphere.
- Writing is controlled mainly by the left hemisphere.

Some patients have their corpus callosum severed, which blocks certain kinds of information transfer between the hemispheres. In every day life, these patients for the most part get along normally. But the following experimental data are also observed:

- Objects which appears quickly on the left half of the visual field cannot be reported in speech, since the information goes only to the right hemisphere. However, if patients are asked to retrieve the object presented on the left half of their visual field (with their left hand) they are able to do so.
- If two different words are flashed on the two sides of the visual field, then, if asked to retrieve the object named, the patient’s two hands will retrieve different objects, corresponding to the hemisphere which is dominant with respect to that hand.

- If an object is placed in the patient's left hand, the patient will not (without looking at it) be able to say what it is, since its identity is not made available to the left hemisphere, which controls speech. However, if asked to guess its identity, the patient will smile and frown depending on whether the answer is correct or incorrect—presumably because of the output of the right hemisphere, which 'knows' the identity of the object. (See p. 434 for the example of 'pipe' and 'pencil' involving the production of written language.)
- Patients will respond emotionally and with their facial expressions to visual stimuli presented in the left half of the visual field — Nagel's example is a photograph of a naked woman shown to a man — without being able to say what they have seen. Sometimes their verbal reports seem to be mistaken interpretations of their facial/emotional responses — as when the man in the example above says, 'That's quite a machine that you've got there.'

2 Four interpretations of the data

As Nagel points out, there seem to be several different interpretations of the data. He distinguishes the following (I collapse his first two interpretations into (1) below):

1. The patients have one mind associated with the left hemisphere; the responses associated with the right hemisphere are not the activities of a mind at all.
2. The patients have two minds (one associated with each hemisphere), one of which can talk and one of which cannot.
3. The patients have one mind, involving both hemispheres, which is not as well integrated as normal minds.
4. In normal situations, the patients have one normal mind, but the experiments in question cause this mind to split into two.

Each of these interpretations seems to face difficulties. (1) faces the problem that, if the patient's left hemisphere were to stop functioning altogether, leaving the patient only able to perform the functions that are associated with the right hemisphere, we would not deny that he has a mind, or is conscious. (2) faces the problem that the two hemispheres are so well integrated in every day life. (3) faces the difficulty of making sense of the experimental data, which seem to indicate that, if there is only mind present, that mind can simultaneously attend to two different tasks, which makes it hard to see what it could be like to be that mind; and such minds seem to violate our usual assumptions about the unity of consciousness, since it looks like there are two independent 'streams of consciousness.' (4) is independently implausible, since no changes in the physiology of the patient are introduced in the experiments.

Nagel's conclusion is that none of (1)-(4) work, and that for this reason there is no answer to the question about how many minds are involved in split brain cases. Why he thinks this calls into doubt the concept of a person.