A drug has been devised which radically alters the human genetic structure, making human beings divide like amoeba, with each half retaining the memories and character of the original. You discover that govt scientists have been secretly feeding you the drug, and that you can expect to undergo a body fission within the next week. How do you feel about that prospect? Justify your answer with reference to one of the competing theories of the relation between mind and body.

I will begin by stating the assumption that, if successful, the experiment will result in the replacement of the parent by two new entities. I will call these entities "manoebas". The reproductive process might well end there, but if fission continues then the two manoebas will be replaced by four new ones, and so on. The whole process will look like the following diagram

If I am Manoeba 3.1 for instance I will have 2.1, 1.1 and 1 as "parents", although they no longer exist. There will also be a number of siblings, though I may not be aware of them.

My thoughts as a subject of the experiment would depend partly on what I think would happen to my personal identity; what I call my "self". We should bear in mind throughout the discussion that the original parent disappears after each fission, leaving the two manoebas. What happens to me?

Persons should persist through time, and survive (sometimes drastic) physical and psychological changes. I would wish to say "I know *who I am* " (i.e., that I am the same person, that I have *survived*) without needing to check with my five senses. In the amoeba experiment, where am *I*? I cannot be the parent, which has ceased to be. Am I one of the two manoebas resulting from the body fission? If so, which one? Or am I both? If the latter, then, supposing that my descendents will multiply in the same way, by the 3^{rd} fission there could be eight instances of "me", all with my memories and mental attributes. In fact, if each new manoeba manages to undergo fission before death, then by the nth division there will be 2^N of me. I am not sure how I (all 2^N of me) would feel about that. It could also be the case that none of the two manoebas is "me", meaning that ,I as a person do not survive the fission. This would certainly be disagreeable.

This experiment was first elaborated by the physicist H Everett to explain a possible result of a quantum event, but it has a useful role in thinking about what might happen to personal identity in the wake of such an event. A very similar set of situations arises from the related experiment of the transporter failure in Startrek. The transporter makes a duplicate of me atom-by-atom and then "beams me down" to the appointed destination. Instead of being destroyed, the copy is retained.

The amoeba experiment has particular implications for the body – soul dualism envisaged by Cartesianism.

There are five possibilities resulting from body fission;

Option 1; the soul passes to maneoba 1

Option 2; the soul passes to manoeba 2

Option 3; the soul is divided between the amoebas

Option 4; the soul does not survive the process

Option 5; The soul survives intact, but is incorporeal, disembodied.

The view that personal identity is identical with the soul says that

Person A at time t = person B at time t+1 if and only if B at t+1 has the same soul as A at time t.

In addition to this, we might bear in mind Descartes own words concerning the indivisibility of the soul;

"*there is a great difference between a mind and a body, because the body, by its very nature, is something divisible, whereas the mind is plainly indivisible. . . insofar as I am only a thing that thinks, I cannot distinguish any parts in me. . . . Although the whole mind seems to be united to the whole body, nevertheless, were a foot or an arm or any other bodily part amputated, I know that nothing would be taken away from the mind. . .*"

In considering Descartes view of the soul, we would have to recognise that, as souls are invisible, we have no clear evidence to remove the possibilities that

People may have more than one soul

The same soul may flow through many bodies.

However, we will assume for the moment each person has a unique soul which is indivisible.

Clearly, the body – res extensa – is divisible, but If the soul – res cogitans - is indivisible, then option three, above, is impossible. Options 1 and 2 are possible at the expense of one of the manoeba being unensouled, and thus without true human identity. Option 4 might be possible, but the two resulting manoeba will both be without soul and therefore without true identity. In the case of option 5, the two manoeba may be unensouled, but may have some "hive" association with the disembodied soul. In either case, they will have no unique self.

However, if we believe that personal identity is not identifiable with an indivisible soul, then the possibilities are different. Perhaps identity is identifiable with particular "bundles" of perceptions, attitudes, beliefs and memories, and also, there may be no reason to suppose that mind and body are completely separate. We might express such a view formally as follows;

A "person stage" A at time t is a stage of the same person as "person stage" B at time t+1 if and only if there is an *information-preserving causal chain* leading from experiences had by A at t, to memories (of those experiences) had by B at t+1.

Such a formulation would allow for some change in personality between different times, yet still preserve one's identity. It would also mean that the amoeba experiment might have different outcomes. After fission, each manoeba could be an exact duplicate of me; each would be physically identical to me, and there would also be an information-preserving causal chain from my experiences to memories of those experiences held by both of my descendents. We have a problem of duplicate identities, as each would believe themselves to be me, with body similarities, psychological profiles and memories to evidence their claim. After a period of time each amoeba would acquire experiences and memories of their own, and so develop different identities. However, the likely resulting squabbles over identity would cause legal problems for the foreseeable future.

The problem resulting from thought experiments such as the manoeba, or the malfunctioning Startrek Transporter show that a great strain would be placed upon our notions of identity if duplication were possible. Ordinary notions of what constitutes personal identity would probably have to be discarded if such events as body fission became commonplace. Is Hume right after all, in saying that there seems to be no one thing, or collection of things stable and unique enough to justify claims of persisting identity? Perhaps the reason these thought experiments are so unnerving is that they question an underlying feeling that most people have. We think it true that we each have a familiarity with our inner mental life, that we each have a feeling of what it's like to be us. There is more to us than just a bundle of perceptions, each person upon introspection finding a unique sense of what it means to be him or herself. We each see the world from a unique point of view, and over time we come to get a sense of familiarity with this perspective. So we feel that there is a self that persists over time because we always have this unique viewpoint from which we see the world. Manoebas and Startrek transporter accidents play havoc with these feelings.

Graham Hackett