## What time is it?

(by Christopher v. Bülow[1], referring to Daniel C. Dennett's 'Where am I?' in *Brainstorms* and *The Mind's I*)

My body and my brain have been destroyed in an accident, but, shortly before that, scientists have managed to save a copy of my 'brain program' in a computer. Now my thought processes run on a computer of sufficient capacity and have a radio connection to a robot body. My perceptions come from transceivers in that body, and I can control that body, e. g., talk or move, via transducers. As long as the computer, the robot body, and the connections between them work correctly, I *am* where the robot is, experience what it experiences, do what it does.

One night, I (resp., my robot body), plagued by insomnia, roam the research institute in which my electronic 'brain' is being kept. I have just sat down in a comfortable chair out of which I can look at my 'brain,' when a group of technicians enters the room. The clock on the wall behind my brain says it is shortly before midnight. Tired as I am I just watch what is happening without making myself noticed. That turns out to be a mistake, because suddenly one of the technicians steps towards the computer which serves as my brain and flicks the big red switch labeled ON/OFF. Seeing that and realizing what happened, I panic. I want to jump out of my chair and hold back that guy, but I already realize that it is too late. Now I shall be plunged into darkness...

Even as this resignative notion washes through my mind, I notice there is something wrong with it: the switch has been on OFF and my 'brain' has been out of operation for several seconds now and nevertheless I continue to experience sitting here and watching the technicians move around. How is that possible? I should be 'dead' (though reanimateable)! Maybe there *is* a soul independent from the brain (and other hardware), which, in my case, has now left the switched-off computer (or where was it before the switch-off?) and taken residence in the robot body it is by now accustomed to, controlling it without a radio connection?

I want to get up and say something to make these people stop fooling around with my brain as if I weren't there—but my body doesn't obey me. Nothing moves, no leg, no arm, no fingertip, and neither does my (artificial) voice apparatus work. I am completely paralyzed. Nevertheless, I feel the cushions of the chair in my back, the armrests under my hands; I see the technicians working and hear them talking in a low voice. It is a little as if I were buried alive in this robot body.

I have sat immobile like this for some time, wondering about what might be going on here, when, finally, one of the technicians notices me.

'Heck, he wasn't in his bed at all! Did nobody check? He was here, watching everything!'

She talks as if I wasn't there at all. I'd like to speak to her, partly to ask why my 'brain' is being futzed around with without my consent, partly to make her stop treating me like a dead object while I can hear every word she says. But there is nothing I can do.

I have to watch helplessly as the technicians free the computer—*my* brain, the one *I* am supposed to think with!—from its wiring and cart it outside. The rest of the night and the following day pass by without much happening. I at least don't do anything except racking my brains about what is going on; most of all: what is going on with my brain. But what am I thinking that with?

It is night again, nearly 24 hours have gone by, when a computer gets carted into the room. But I can see at a glance that this is not *my* 'brain;' this computer looks newer and more complicated. What have they done to my brain?! The new computer is set up where the old one used to sit, and they hook it up again. A technician plays around with it for a while and then, exactly at midnight, flicks a red switch just like the one my old 'brain' had.

Internally I sigh: Now, hopefully, this weird state of paralysis will be over! But my sigh stays completely mental, no sound comes from my lips. Quickly I realize I am still paralyzed like I was during the past 24 hours. It is enough to drive you mad!

Two technicians turn around to face me and one of them says to the other: 'Now he is processing what happened right after the shutdown. I wouldn't want to be in his shoes. But before long he will have caught up with reality again.'

I wouldn't have understood less if they had been talking in Urdu. Here I am; and they treat me as if I were a heap of plastic and metal. Well, in a way I am; but I am not a *dead* heap!

Another boring day goes by as I sit there paralyzed, but conscious, without anybody talking to me. At midnight during the third night a technician alters something on the new computer (which has been running for 24 hours by then); to my relief it is not the ON/OFF switch. Then he steps towards me and addresses me. At long last! It is even more pleasant to be able to get up and shout at him what all this crap is supposed to mean. So my paralysis is over, too.

Now what did he explain to me? As a surprise for me they had organized for my old 'brain' to be exchanged for a more powerful new one. To do this, my thinking process had to be interrupted, of course: The old computer had to

[1] Uday S. Gandbhir helped with the translation.

be switched off to be replaced by the new one. They had planned on shutting it down at midnight, when I would be fast asleep, so I wouldn't notice the interruption at all. Indeed, the old computer *was* shut down at midnight (in the first of these strange three nights), but, alas, they failed to make sure I was asleep in my bed. As it happened, this was not the case; to the contrary, I was present when they shut down the computer. But by then it was too late.

There was no use in stopping now, so the old computer was taken away and the new one was brought in, programmed with 'me' (as of immediately before the switch-off), and finally started up at midnight (of the second night). During the intervening 24 hours, no computer and no brain did think, perceive, or act, 'for' me; I was as good as unconscious or dead in that interval of time, not there, as it were.

But how could that be, when I had been there, experiencing every minute of it!? Now here's the interesting part.

My robot body is independent from my 'brain' in its energy supply. My artificial sense-organs keep on working even when the computer that should be processing their signals is shut down. On the other hand, without radio orders from the brain my body will not *act,* will neither speak nor move. Furthermore, besides being connected to my brain my body is also connected to a machine that can record my 'raw' perceptions over an extended period of time.

When my mind was started up again in the second night, the technicians might have taken the easy road and just have set up the old connections between body and brain again, but then I would have experienced the whole thing as a sudden jump in time or (after being told what happened) as a 24-hour gap in my memory. To avoid this, they chose to exploit a new feature of the (second) replacement brain: The new computer could optionally perform my brain functions at *double* the speed of my biological brain and the old computer. So, in the second night, the new computer was switched on with the doublespeed option in effect and, at first, was not connected to the robot body (which went on 'perceiving into' the recorder all the while) but only to the recorder. Through this one-way line (the recorder has no use for motion orders my brain might give to my body), the recording of the past 24 hours (the stored perceptions of my robot body) was fed into my new brain at double the normal speed, where it was processed at matching speed. All the while the recorder kept on recording the perceptions of my body.

For practical reasons, the radio channels that normally transmitted motion orders from my brain to my body had to be kept closed during this process: Firstly, these orders would have arrived at double the usual rate, so the body would have tried (physically inadequate) to move with a hummingbird-like speed; secondly, even if the motion orders would have been recorded and fed to the body in the normal speed, the behaviour of my body would have been temporally inadequate, because, when the second midnight was already past, my brain was still occupied with the experiences of the night before, so the behaviour of my body would have been adequate only to events that had happened long before. Therefore, my body could act neither during the first 24 hours, when there was no brain active to give orders to it, nor during the second ones, during which the new brain was active but couldn't reach it.

So, without being aware of it, I was processing robot perceptions of past events at increased speed while my body sat there paralyzed. After 24 hours, I had caught up with 'real time' again; that was at the third midnight. The processing speed of my new brain was turned down to the normal value, the one-way connection from the recorder was cut, and, at the same moment, the two-way connection between brain and body was reconstituted, just when the lead of the robot experiences to the data being fed into my brain had been reduced to zero. My thinking continued at leisurely standard speed again.

Did I experience the first 24 hours? Yes, but only afterwards.

An illustration:

```
    A   subjective             x
    |   time                 x
    |                      x
M_3 +                    o             When (in real
    |                   x              time) do I
    |                  x               experience
    |                 x                which moment
M_2 +                x                 of my
    |               x                  subjective
    |              x                   time?
    |             x
M_1 +    o       o
    |  x
    |x
    +----+-------+-------+----------> real time
        M_1     M_2     M_3
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