In such a situation, social scientists and philosophers need to think more about what we *are* rather than what we *do*. Thus, it is fundamental to develop ethical reflections, taking into account this anthropological perspective which many researchers in engineering may consider to be irrelevant: remaining human is usually not a criterion used to define what should and should not be developed in laboratories. Empirical research on the subject[4] shows for instance that even if it is taken for granted that every element of the human could theoretically be mastered and technically reproduced, there may, in the eyes of some, be a doubt concerning the future of human emotions. Opinions are divergent concerning the question of what would happen to humankind without human emotions: Would it exist in an improved version, more rational and less emotional. Or: Would it be replaced by another living being, characterized by a more developed intelligence? For some, emotions are part of the ontological definition of humankind. However there is no reason for us to stay human. In this case the evolved terminology "post-humankind" can be used. For others, emotions are not necessarily a distinct part of the definition, which is centered on rationality. In this case, we could evolve toward more reason and emotions and thereby become even more human during this process.

In both cases, despite distinct differences in the description of what humankind actually is, the normative definition is the same: we will become more and more rational. In such a perspective, it is argued that as our brain possibilities are limited, we naturally need to find some way how to improve our mental abilities. To reach this goal, we have two options: "internal or external silicon extension" (Cochrane, 1997, 8).

Let us now have a look at the result such an enhancement in our rational abilities could produce, and the various way of understanding it.

2 Post-Humankind

Leroi-Gourhan claimed in 1965 that humans should get used to being weaker than an artificial brain, as their teeth are weaker than a milled process and flying abilities weaker than those of a plane. He wondered what the future of humankind could be in a situation where technical devices are more efficient than humans in everything. He was an anthropologist and paleontologist and was concerned with the future of humankind as well as with its past. He replaced the current humankind in a very broad historical perspective and made assumptions concerning what might be in the future. One of his hypotheses was that homo sapiens could disappear to become something perhaps better but in any case different (1965, 60). Such a view is confirmed by people who currently foresee the emergence of post-humanity. For instance, according to Guillaume "technology will probably eliminate the slow link that humanity is. In spite of ethical committees' resistance, human reproduction is

[4] For more details about that research material, see Cerqui (2006).

getting more and more artificial. One day humans will be improved, even in their intellectual abilities, by embodied artifacts. Of course, such a radical and irreversible anthropological mutation is very difficult to imagine nowadays" (1999, 15, our translation).

The artist Stelarc considers that natural evolution has reached its limits and in his view we are now confronted with a post-evolution necessity to modify ourselves in accordance with our new environmental parameters and "it is urgent for us to redesign humankind to make it more compatible with machines" (quoted in Fillion, 2000, V, our translation). Wiener shared such a view and argued that our environment has been so modified that as a result we must now modify ourselves to be able to keep living in it (see Edelman, 1985, 125). The cybernetics Wiener originated in the 1940s has had an enormous influence in the new design of humankind today – human and machine acting as a whole system with sensory feedback, communication and control. The important aspect is the entire system rather than the sub-components within it.

At present space travel to reach and return from distant planets, even several of those in our own solar system, needs much more time than that available in one typical human life. Therefore we need to modify our bodies to match with such needs, being aware that these new perspectives give a different definition as to what it means to be human. Indeed it could be said that there is no longer a reason for dying (Stelarc, 1992, 28).

According to Cochrane, our next step in evolution could lead us to use "appropriate silicon as the intelligence medium to augment our wetware (brain). Future evolution would then be driven from those manifestly of nature. Further Darwinian evolution could then lead to a creeping carbon-silicon mix. At some point biological systems become inherently limited as they encounter fundamental physical limitations that constrain or prevent further evolution in some direction" (1997, 7).

In such a way of thinking, both humanized machines – for example self-organized computers or robots – and machinized humans such as cyborgs could be the next step in evolution, the qualitative rupture point being linked to the important question of improved intelligence.

Moravec is convinced that technology will replace humankind (1988), and agrees with Kurzweil who names these machines our "mind children." They have in general a very optimistic vision of such a future, contrary to Joy (co-founder of Sun Microsystems), who published a paper with the clear title: "Why the future doesn't need us" (2000). He argued that Kurweil and Moravec's ideas were unrealistic, preparing a future where humankind is totally useless.[5]

Contrary to these ideas, some authors consider it totally impossible for robots and machines to replace humans – Kemp describes it as an ontological absurdity (Kemp, 1997, 256). In such a view, it is necessary to assess what machines should

[5] His reflection is inspired by Theodore Kaczynski nicknamed "The Unibomber", a scientist who retired from everyday social life and became an anti-technology terrorist (for the history of his life see Lecourt, 2003).