Chapter 30
Effects of Human–Machine Integration on the Construction of Identity

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ABSTRACT

Recent developments in social robotics, intelligent prosthetics, brain-computer interfaces, and implants pose new questions as to the effects of technology on identity, society, and the future of humankind. The authors' standpoint is that such effects cannot be studied separately from their social/cultural context, and thus, this chapter begins by reviewing the existing approaches to the social construction of reality, placing special emphasis on language and its limitations to describe the future. Then, it focuses on the body as the place where the human-machine integration occurs, and describes four levels at which the notion of cyborg has been analyzed in anthropological studies: symbolic, physical, as a permeable layer between nature and culture, and as an intermediate step towards a higher-order existence. The chapter ends up with a word of caution in relation to technological determinism stemming from STS (Science and Technology Studies), as well as the need to establish Relevant Social Groups (RSG) with well-founded criteria that join scientific and sociological academics under a multidisciplinary approach.

1. INTRODUCTION

Our aim is to study the basic factors to be considered when exploring the effects of technology on identity and its impact on society. We see that there are three such factors.

First, we follow the thesis of Ihde (2004) regarding technological 'multi-stability' in that predicting the effects of a new technology is difficult because of the appearance of unforeseen uses for it. In fact, this stands as the main problem that Humanities face in this domain. Looking around we find many examples. One of the most recent is the riots occurred in the surroundings of London.

The Guardian (2009) reported that mobile phone companies would help in the search for individuals who used the messaging system included in Blackberry devices to promote violence. Note that, at first, this platform was designed for business communication. For this purpose, one of its advantages is the use of an encryption system that prevents the open reading of messages, which is precisely what favoured the criminal activity.

Secondly we must highlight the importance of the social/cultural context in which people's identity is developed. The complex uses of some devices cannot depend only on how familiar we are with their specific field of application, but also on the knowledge inherent to socialization processes that allow the individual to adapt to new circumstances and expectations. However, this knowledge is applied according to the perceived needs. We will analyze the importance of habits, the objectification of shared knowledge and the construction of roles. Such issues become more complex as the devices tend to increase the interaction with people to become extensions of their bodies or insertions into them.

At this point, to place in context the analysis of individual actions and behaviors - such as those in the Joe Wooller (2010) case – we will mention the major perspectives from behavioral psychology, cognitive (Piaget, Vigotsky) and cultural psychology, recognizing there are points of disagreement between some of these. To this end, we will highlight Turkle's (2007) perspective on the use some communication technologies. However, since individuals are social beings and technological devices emerge and influence in this context, it is justified to approach the construction of identity on the referential basis of Berger and Luckmann (1966) and their theory of "construction of everyday reality".

Third, we must pay attention to the importance and potential significance that some sectors give to the current technological innovations and those hypothetically future ones (transhumanist theory) in relation to the ideal model of society that we

define nowadays as State of Welfare. Current priorities are based on the efficient management of public resources in harmony with the interests of parallel organizations and other institutions that make up a heterogeneous network of power relations. The evolutions of collective needs are diverse in nature, energy, optimization of time, and affect the concepts of life and death in the fields of prevention and palliation of illness, rehabilitation and reintegration of individuals. All these are set in a framework of complex relationships that contradict the widespread - and seemingly powerless - idea that technology evolves sequentially, independent of other factors. Thus, we will try to make a brief but clear distinction between some aspects of 'technique' and the use made of the 'technology' itself. Some of the traditional tenets of the philosophers of technology (Habermas, Heidegger, Ellul) have been branded as pessimistic, but at a fundamental level we still consider them appropriate. This is so because of their content as well as the epistemological challenges they pose today to Science and Technology Studies (STS) as regards to the definition of cyborg - that we will approach from the Anthropology of the body - as the paradigm of symbolic man-machine integration. In this direction, we will analyze the challenges posed by the work of Kevin Warwick (2011), its relationship with the limitations of language and the introduction to the fundamental idea of Cyborg Anthropology.

2. PRELIMINARY CONCEPTS ON THE SOCIAL CONSTRUCTION OF REALITY

Our study aims to analyze the influence of language as a mechanism of objectification of collective knowledge in a technocratic society and its symbolic universe. From our point of view, this is important in two aspects:

The first is to study the main features of everyday reality that are based on the "taken for

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