Human Sciences and System Design
From Expertise to Situated Deliberation

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ABSTRACT
Based on the MIAUCE [1] project' experience, this paper explores the question of the status and of the responsibility of human sciences in the design of a technological project. The technologies developed into the MIAUCE project are ethically very critical since they aim at observing and at analyzing bodies and motions of people for surveillance and marketing reasons. Justifying a clear refuse of the experts position, the authors build a sound methodology to support a collective process of deliberation about the ethical and legal requirements of the project.

Categories and Subject Descriptors
K4 and K6.1.

General Terms
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INTRODUCTION

Based on the MIAUCE project' experience, this paper addresses the question of the status and of the responsibility of human sciences in technological projects funded by European Commission.. MIAUCE project aims at developing techniques to analyze the multi-modal behavior of users within the context of real applications.

The targeted applications of MIAUCE are located into the surveillance and marketing domains.

Besides technological challenges, the technologies at work in MIAUCE devoted to the multimodal observation of human beings, raise societal issues with crucial impact on both the individual autonomy of the 'users' and the vitality of democracy, two societal values we consider mutually productive of each-other, or "co-original".

Orientated towards the reflexive return on experience, this paper aims at analyzing the first lessons drawn by the authors from their respective backgrounds in ethics and sociology regarding their responsibility and their participation to the design of the MIAUCE technologies.

1. FROM TECHNOLOGY ASSESSMENT TO VALUE SENSITIVE DESIGN

Along the different framework programs (FPs) organized by the European R&D, the status and responsibilities of human sciences have evolved.

Three major steps characterize this evolution, showing a gradual shift from a general policy advisory role to a more local and instrumental role inspired by the "value sensitive design" paradigm.

At the very beginning of the FPs, human sciences were invited to provide political guidance and recommendations regarding the Commission's technological policies and investments. At this

stage, a major challenge consisted in providing an advisory body composed of human scientists with an institutional settlement that would guarantee their independence and autonomy, against various pressures and undue influences from political, technological and industrial spheres.

Following criticisms motivated by the general advisory recommendations' lack of impact over projects at work, a second step in the evolution of the role of human scientists in FPs was marked by the development of programs which funded human sciences projects dedicated to societal aspects involved in R&D projects supported by the Commission. The results of this second step were also much criticized for keeping technical and societal projects completely separated.

In order to respond to the crucial necessity of interdisciplinarity and dialogue between human sciences and technology, a further strategy has been deployed in FP6 and FP7, integrating human sciences into technical R&D projects, with the specific responsibility to impact on technical designs as to make them, from the start, "socially compliant" or acceptable.

This strategy is very inspired by the social constructivism and the social shaping of technology's theories, which all consider that technological artefacts are socially constructed by the actors involved in both their design and appropriation.

At the methodological level, this theoretical position has given rise to the so-called "value sensitive design" oriented towards an enhanced integration of 'moral values' from the very starting stage of a technological design. This integration of human sciences within technological projects raises at least two major critical questions.

The first one relates to the 'figures' social scientists can endorse when participating into a technological project.

This first question attests to the underdetermination of human scientists' 'role' and responsibilities in such a context, and of the 'values' that should guide their contribution and cooperation with the other stakeholders.

The second question challenges the status of the human sciences' discourses when they take part in the design of a technological artefact.

2. THE FIGURES OF HUMAN SCIENTISTS

2.1 The limits of the expert figure

Traditionally, discussions on ethical issues are circumvented by the acknowledgment of an ethics committee of any sort, in charge of providing, ex ante, all relevant recommendations for having ethical standards complied with. The figure endorsed by the ethics committee members are the figure of the expert. This was also the expectation of the MIAUCE partners claiming for the human scientists' expertise in order to help them to design technologies ethically and socially acceptable or compliant.

In practice, this position of expert is opposite to our ethics' concept based on Jean Ladrière [2] view. For Jean Ladrière ethics is a "savoir-faire", a capacity to make moral choice when faced with situations raising unprecedented ethical dilemmas or challenges.

In that frame, Ladrière points out that ethics is not the 'exclusive business' of experts since ethics cannot be transferred or learned as a theoretical knowledge but has to be practiced in order to be genuinely appropriated by those who face an ethically challenging situation. As a consequence, Ladrière explains:..

> *... nobody has a privileged competency in ethics. This is why an ethical approach could only be a collective process through which the different positions have to be confronted, with the hope of a convergence of these positions justified by the belief of the universality of the human reason.*

This vision of ethics as a collective praxis or as a collective learning process needs to be supported by alternative figures endorsed by the human scientists.

2.2. From learner to facilitator

During the project process, different figures have successively marked the participation of the human scientists.

2.2.1. Learner

"Learner" is the first figure that human scientists have adopted into this project. Being involved from the design stage of a technological development gives us, as human scientists, an interesting opportunity to investigate the technology from an 'insider' point of view. This learning process does not only concern the technical bases and knowledge at work into the project but also the inherent or implicit societal assumptions guiding and shaping the design of these technologies.

For instance, those technologies give a clear primacy to the body as the ultimate access to the truth rather than to the subject and his/her explanation capacity. This is not only a technical choice but also a societal choice since since to a certain extent, *bodies* are considered as more objective, more reliable and informative than *persons* and as more revealing of personal identities, personalities and lifestyles than whatever the individuals may tell or express.

In other words, this type of project provides evidence of a certain dis-trust in persons and in their subjectivity.

2.2.2. Investigator or translator

The second figure we adopted as human scientists in this project is the figure of the investigator or the translator. This figure consists in repositioning the technologies involved by the project within a broader technico-social landscape. Through this figure, the major societal trends and expectations that give rise to such technology are questioned in order to clarify the societal background. This societal background can be approached through the analysis of both scientific literature and political discourses that compose the implicit or explicit frame of the project.

At this stage, the role of human scientists consists in drawing this framing landscape, the cultural, social, economic, philosophical specificities of the time that encourage the development of such projects whilst also supporting the claimed legitimacy of its resulting applications.

For instance, it appears obvious that the MIAUCE project carries and relies on an implicit set of assumptions articulating societal demands for increased security with specific preconceptions identifying the human body (and its observable physical patterns) as the ultimate source of truth about human individuals.

2.2.3. Instructor

The third role adopted by human scientist is the instructor one and aims at understanding the ethical, legal and societal issues raised by the project. This research task, as it will be explained in the next section, is not neutral. It consists in confronting what human scientists observe from their insider position in the project about its societal framing to the values and the principles coming out from our tradition and culture. This requires the human scientists to clearly set up the explorative principles and values from which they assess and analyze the technologies in progress.

In this instruction stage, we explored, for instance, the impacts of this body centered technologies regarding people self-determination capabilities and their inherent risks regarding people discrimination.

We also pointed out the dangers of the reductionism at work when using some behaviorist model as the Ekman one to translate faces' expression into basic grammar of emotions.

2.2.4. Facilitator

The fourth role is the role of facilitator. This role implies the responsibility of setting a sound ethical deliberative process amongst the project participants in order to identify sound ethical requirements.

Two remarks have to be made about the facilitator's role into the MIAUCE project.

First of all, as facilitator we have encouraged and activated the collective deliberation by broadening the scope of current application scenarios first presented by the technical and industrial partners. Through this broadening process, we have drawn or designed 'dark versions' of the actual foreseen applications in order to emphasize societal issues virtually raised by the technologies at work when being placed in another context or motivated by another intention of use.

For instance, the partners did better understand the importance to blur faces when they discovered the dangers related to the use of the same technologies to discriminate or exclude people.

Secondly, we acknowledge our position as situated - or non neutral - facilitators bearing, just as every other stakeholder, moral and ethical values guiding our intervention and contribution to the project. This status of situated facilitators requires us to define and explain our ethical or moral background. We explore those values in the section 3.

3. THE SITUATED SPEECH OF HUMAN SCIENTISTS

Two main principles or values appear to shape a sort of community of understanding of the situation experienced, as human scientists, into the MIAUCE project.

The first principle relates to the autonomy of the subject and the second, to democracy, these two terms being intrinsically related by a process of co-originality each being a necessary (but not sufficient) condition of the other.

These principles have a twofold role in our approach: an explorative role helping us to face and explore unknown ethical situation related to the MIAUCE project but also a supportive role since these principles define the basic conditions for a sound deliberation about ethical situations.

Let us examine those two principles.

3.1. From autonomy to capability

The autonomy of subject can be approached in a very broad and protectionist way of thinking defining the rights, the privacy and the liberty to be protected. This is one face of the autonomy. The other face refers to a person's capacity for self-determination in the context of social or moral choices.

This definition is very broad and difficult to work with since it remains very abstract and universal. To develop this concept and to make it more tangible and workable into the project, we adopt the concept of capability developed by Nussbaum [3] and based on Amartya Sen's [4] concept of substantial freedoms.

Nussbaum defines the concept of capability by raising the Aristotelian question "What activities characteristically performed by human beings are so central that they seem definitive of the life that is truly human?" Her answer consists in the identification of ten fundamentals which define life as human and are the necessary conditions for the human autonomy.

This means also that any changes being technological or political treating critically one of those capabilities treat at the same time the humanity of the life.

This capability concept appears to be an interesting and very pedagogical tool to explore the ethical issues raised by the technologies at work into the MIAUCE project. For instance some of the foreseen applications of the MIAUCE project skip the subject and his/her decisional capability to the benefit of the analytical capacities of the designed technologies.

This clearly raises question regarding the autonomy of people and their capabilities to determine themselves.

This leads the partners of the MIAUCE project to claim for a strict legal frame concerning the future use of the foreseen technologies in order to guarantee the basic human rights of people to determine themselves.

3.2. From autonomy to democracy

The second term or explorative principle consists in democracy, considered as a critical social organization which guarantees the possibility of constant re-negociation of the basic rules of fairness and justice. This concept of democracy is very central in our exploration of MIAUCE project and as such needs to be clarified.

Along with Sen [5][i] we agree about the three critical ways in which democracy enriches the lives of the citizens. :

> *First, political freedom is a part of human freedom in general, and exercising civil and political rights is a crucial part of good lives of individuals as social beings. Political and social participation has intrinsic value for human life and well-being. To be prevented from participation in the political life of the community is a major deprivation. Second… democracy has an important instrumental value in enhancing the hearing that people get in expressing and supporting their claims to political attention (including claims of economic needs). Third…the practice of democracy gives citizens an opportunity to learn from one another,*

> *and helps society to form its values and priorities… In this sense, democracy has constructive importance, in addition to its intrinsic value for the lives of the citizens and its instrumental importance in political decisions*.

According to this approach, democracy is at the same time the condition for the autonomy of human individuals and conditioned by this autonomy. But the value of democracy also concerns its constructive role since, as well underlined by Sen, as a process, democracy plays a critical role in the formation of values and in the understanding of needs, rights and duties

This concept may seen very further from the technological design at work but it claims for social practices that keep a legitimate and balance use of those technologies.

CONCLUSION

The whole process of deliberation supporting the design of the MIAUCE technologies can be conceived as collective learning process. In this process, the human scientists are stakeholders as the other partners are. But they have also to play the difficult and ambitious role of a caring diplomat trying to establish a fruitful and sound dialogue between the technological world and the societal one by enlightening the values that insure that life remains human.

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