

Bio-objects in the 21st century. Cybrids and other hybrids.

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Description: Genetic modification of organisms is now commonplace, and many of these practices involve the mixing of human and animal DNA, cells and tissues. About one third of all animal experiments involve some form of trans-gene engineering. Many of these animals, most often mice, carry genes from humans in their genomes, such as certain 'disease genes'. Moreover, xeno-transplantation research has since the 90s aimed at filling the gap of organs needed for transplantation, with the help of 'humanised' animal donors (most often pigs). Genomics and biotechnology are now taking a step further and develop human admixed embryos in order to develop embryological basic research, therapies in regenerative medicine and stem cell research and therapy (www.chimbrids.org). This project investigates the challenges these novel embryos pose, and how they are understood, handled and regulated in different areas of society.

The rich variety of terms and concepts can be observed in the trans-species area. It is simultaneously talked about hybrids (or 'true hybrids') as a result of fertilization between two different species (eg an egg from one species and a sperm from another), and chimeras as the mixing of cellular materials to various intraspecies and between species organisms. The term 'cybrid' ('chimbrid' in Swedish) is a common term that sometimes signifies both hybrids and chimeras, and includes embryos with mixed species identity. Technically, this is most often done through the exchange of a the nucleus of an animal egg by a human (pro)nucleus, although there are other techniques and combinations available. A cybrid thus entails various degrees of human decent, and from the debate about and discourse on cybrids, the focus has been set on various types of mixes between humans and other animals and its consequences. So also in this project. But, we will also relate this type of research with other hybrid research, such as and transgenic animals. A collective term for these and other new forms of life are 'bio-objects' (Webster et al forthcoming 2011). Central is that they create their specific dilemmas, because they often occur outside and thus exceed traditional regulatory frameworks and legislation, and cultural systems of classification and categorizations.

The ability to create animal-human embryos and ultimately viable beings, is now a reality, and with the usual rhetoric of scientific discourse, cybrid research is also needed for future breakthroughs and new medical solutions. The future is in this sense performative (Borup et al 2006, Michael, 2000). But what are the ethical, social and scientific issues and debates, that this practice will encounter and how will the activities be regulated? Issues raised in Denmark and England, where the debate is ahead of the Swedish one, concern both ethical aspects linked to the ambiguous species identity of cybrids - is it to be considered human or animal? - but also to some extent, the scientific benefits and potential risks of the use and production. The Swedish National Council on Medical Ethics (SMER) has just started to discuss the phenomenon and believe that this is one of two priorities for the future. The council is 'an advisory board to the Swedish government on ethical issues raised by scientific and technological advances in biomedicine' (www.smer.se), and in December 2008, SMER wrote a letter to the Swedish Government in which the need for regulations where put forward. The present project will follow the emerging Swedish debate, initiated by SMER, on cybrid and other hybrid embryo research and relate it to the Danish and British debates.

Cybrids can from a cultural science study perspective be understood as a kind of cross-border commuters who constantly balance on the border between nature and culture, between organism and invention, model and reality, science and technology, and above all, animals and humans (cf. Haraway, 1997). As such, we suspect that they also raise specific issues and dilemmas. We ask ourselves: what specific problems can be observed in this internship? How do scientists and medical/bio-ethicists handle these dilemmas? What is articulated, and what remains silent? And, finally, how can we understand this? But our questions are also wider in scope. We adhere to a COST-Action, a European network –Bio-objects and their boundaries. This multidisciplinary network is composed of social science, science and technology studies scholars from many different

countries, and everyone is working with various forms of 'bio-objects'. This concept refers to new forms of life produced in bio-technology and bio-medicine today. Bio-objects can include transgenic animals, genetically tested fetuses, or silicon cells, or as in our case, the species mixed embryos. The major purpose of this study is to develop theoretical tools to understand and resolve the challenges posed by these new bio-objects. The method is to trace how the bio-object's multiple cultural meanings and phrases used for various scientific and political purposes, as they circulate through many sectors of society.

We focus on three different levels of analysis:

- Changing boundaries between humans and animals
- Multi-dimensional marketing and management
- The emergence of new forms of social relations through "bio-objectification processes"