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# WONDERS AND TECHNOLOGY

## Commentary to Michel Depuis' Paper

*New Pathways for European Bioethics*

*Leuven 28 – 30 September 2006*

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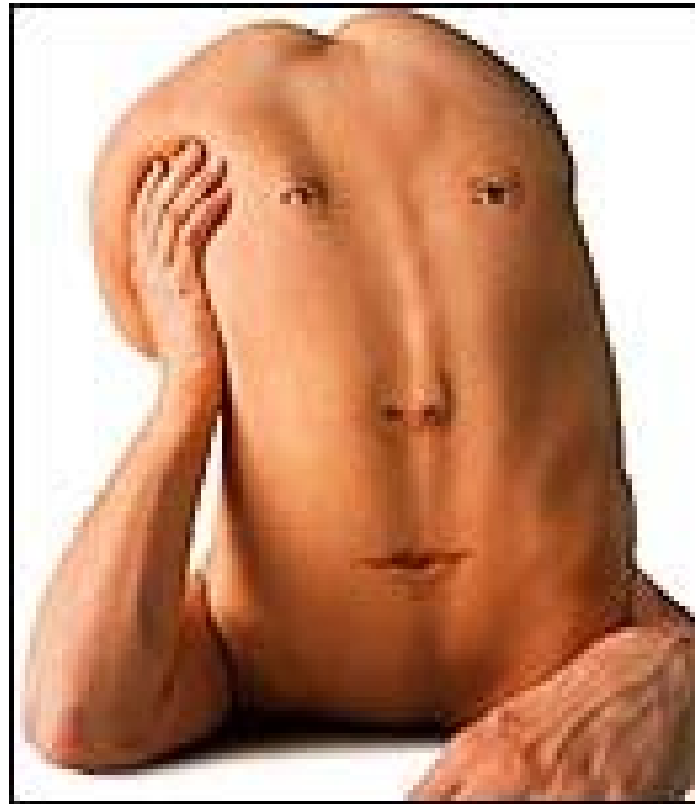
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*When I read Michel's paper I understood in what a mess I was...*



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*How could I comment his paper? This could have been my own paper with the difference that I could not find such a perfect wording to express his concepts...*



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*So, I took the sole possible decision I could take, that is to avoid trying to raise any new argument, but just spend these few minutes by trying thinking informally together with you...*



## To start with...

It seems to me that Michel's central arguments are

- 1) ethics of technology is actually anthropology, and
- 2) anthropology, (bio)ethics and technology could (may be should) find a common focus by reconsidering the theme of human finitude.

In other words, what Michel has proposed us is to think of a new subjectivity, thoroughly defined in terms of a new theory of the subject (of the "technological subject" I would say).



# New technologies

When one thinks of technology and (high, late, post) modernity, the mind goes to scholars such as Giddens, Beck, Castells, Bauman, etc.

Giddens' central argument is that new technologies are essentially tools for mastering, controlling, minimizing, time and space. No matter if they are biotechnologies, nanotechnologies or infotechnologies.

Their ultimate aim is to help us to manipulate space and time (by reducing distances, by altering body constraints, by prolonging life, by increasing mobility of persons, etc.)



# *Technology is a means to an end*

The general end of modern technologies is – according to Giddens - to abolish, or significantly curtail, time and distance.

Obviously all modern technologies have also some direct, specific ends (produce GMO foods; allow to make a wireless call; produce new materials; etc) but they can be overall considered technologies that aim to redistribute time and space in our social life.



# Networks

A second peculiar feature of modern technologies is that they are organised in global networks (Castells).

These networks govern the flow of people, goods, money, data, values, and cultures across various geographical, cultural, temporal barriers.

The performance of a network depends on two fundamental attributes

- its *connectedness*, that is its structural ability to facilitate noise-free communication between its components
- its *consistency*, that is, the extent to which there is a sharing of interests between the network's goals and the goals of its components



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# Networks

Elements which affect network performance are ethical relevant, because they are criteria to be used to judge values underlying each technological network (i.e., the tension local/global is relevant to ethics).

We see examples of these global technological networks wherever we go. Obviously one may think of the Internet...



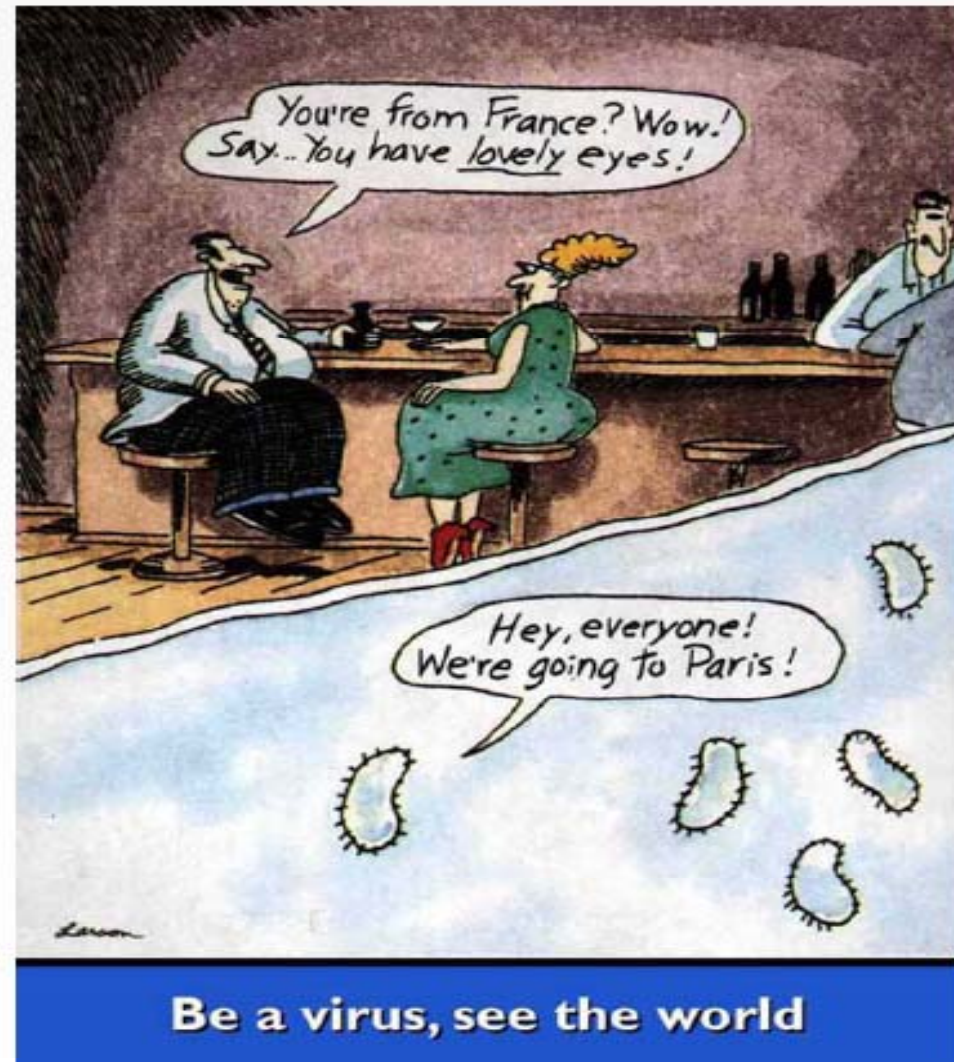
**WORLD INTERNET USAGE AND POPULATION STATISTICS**

World Regions	Population ( 2006 Est.)	Population % of World	Internet Usage, Latest Data	% Population ( Penetration)	Usage % of World	Usage Gro wth 200 0- 200 5
<u>Africa</u>	915,210,928	14.1 %	23,649,000	2.6 %	2.3 %	423.9 %
<u>Asia</u>	3,667,774,066	56.4 %	380,400,713	10.4 %	36.5 %	232.8 %
<u>Europe</u>	807,289,020	12.4 %	294,101,844	36.4 %	28.2 %	179.8 %
<u>Middle East</u>	190,084,161	2.9 %	18,203,500	9.6 %	1.7 %	454.2 %
<u>North America</u>	331,473,276	5.1 %	227,470,713	68.6 %	21.8 %	110.4 %
<u>Latin America/Caribbean</u>	553,908,632	8.5 %	79,962,809	14.7 %	7.8 %	350.5 %
<u>Oceania / Australia</u>	33,956,977	0.5 %	17,872,707	52.6 %	1.7 %	134.6 %
<b>WORLD TOTAL</b>	6,499,697,060	100.0 %	1,043,104,886	16.0 %	100.0 %	189.0 %



## *Global Health Networks...*

- Global Fund for AIDS, Malaria, TBC, EDCP, UNAIDS, etc.
- Epidemiological networks (including bioterrorism)
- Organ Exchange Networks
- Tissue and cell bank networks
- DNA bank networks
- Etc.



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## *Airports...*



The network of hub airports which structure the global flows of the 500 million or so international travelers each year and 8 million of air travelers in any given day.

The flows consist of not just of the flows of people, but also of images, information, money, technologies, virus and bacteria, waste, illegal goods such as drugs and weapons that are moved within and especially across national borders and which individual societies are unable or unwilling to control.

The system has its own governance bodies (ICAO, IATA), has its own legal autonomy (e.g., IDs check), has even its own style.

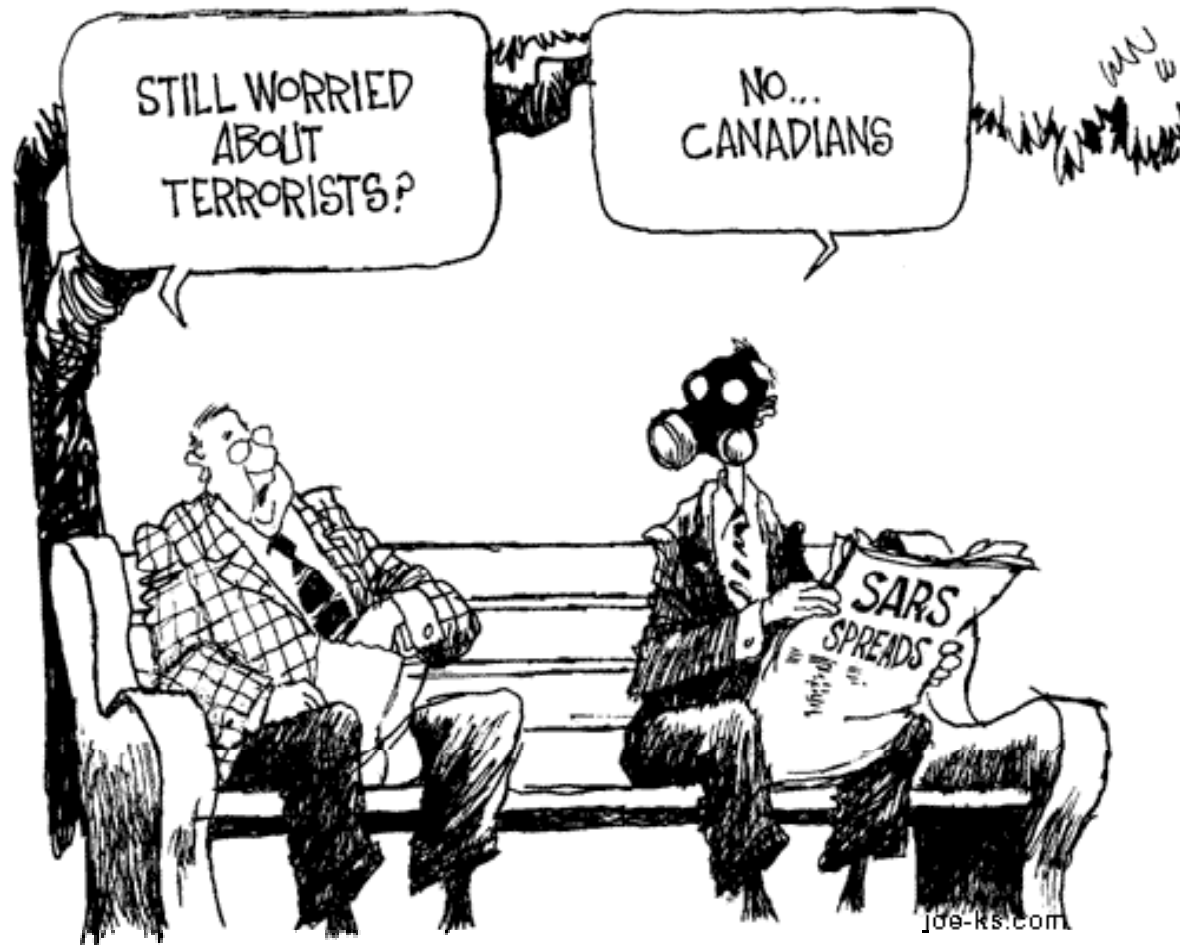


# *Non-lieux*

Marc Augé coined the term *non-lieux* to describe specific kinds of spaces, chiefly architectural and technological, designed to be passed through or consumed rather than appropriated, and retaining little or no trace of our engagement with them. These spaces, principally associated with transit and communication, are for Augé the defining characteristic of the contemporary period he calls "supermodernity", the product and agent of a contemporary crisis in social relations and consequently in the construction of individual identities through such relations.



*Very often all these networks end up merging to each other...*



*It is thus obvious why the complexity of modern technology does not allow to get easily its essence...*

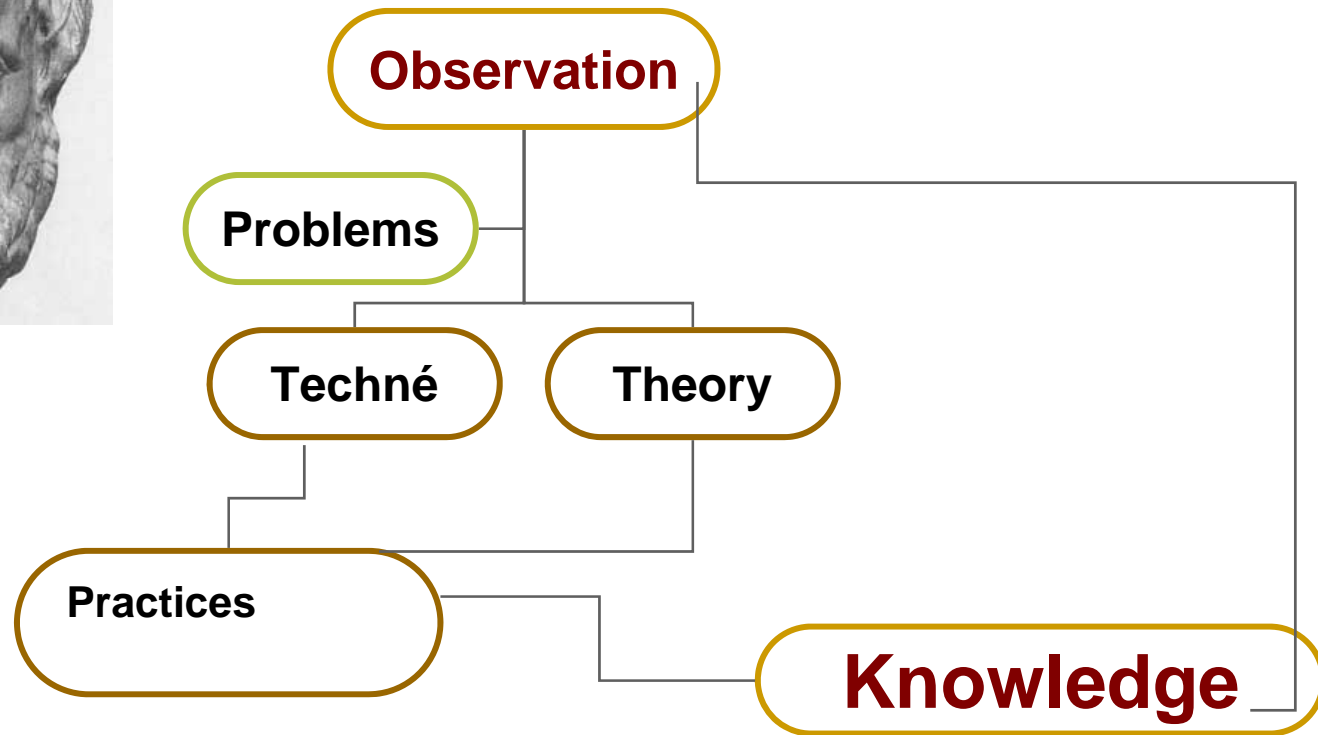
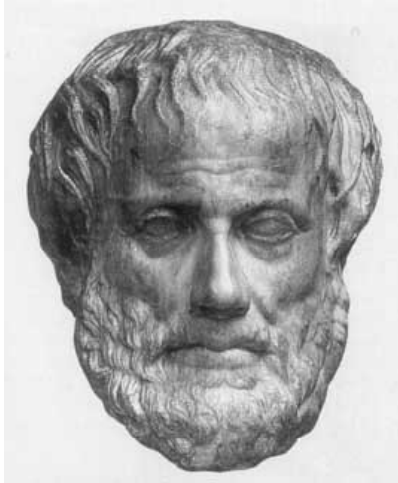


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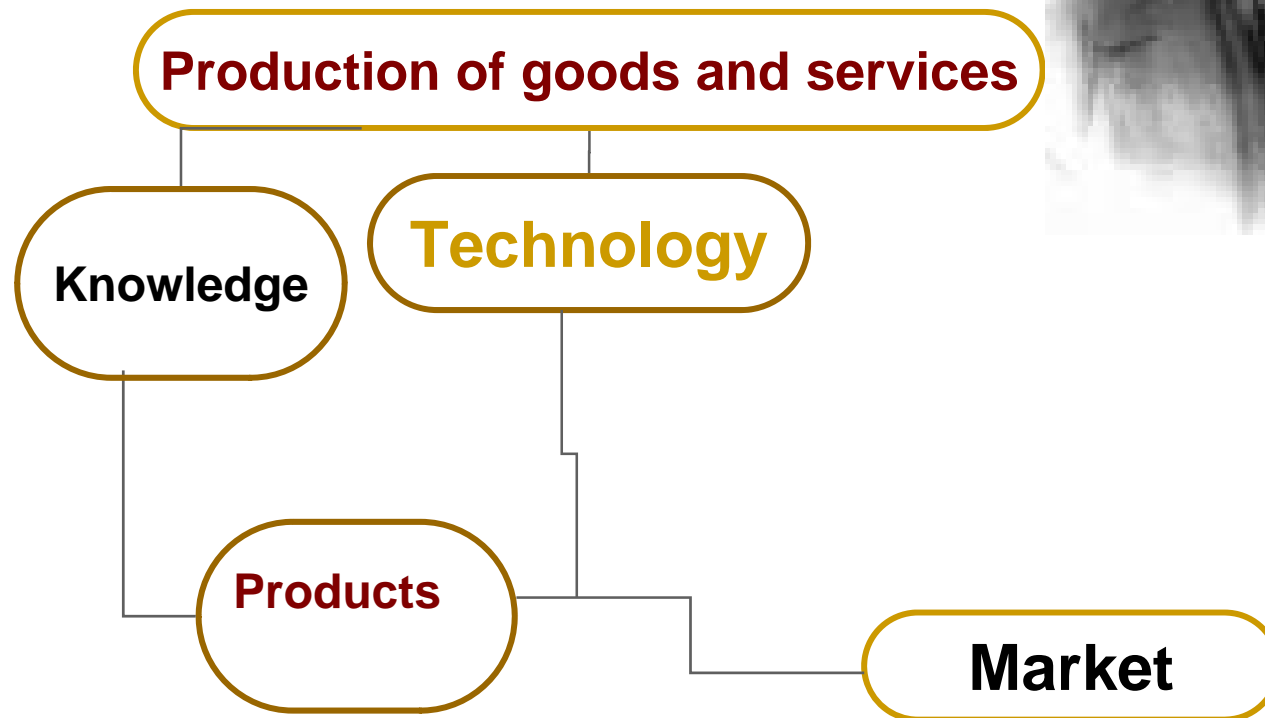
*In the past, technology was more  
comprehensible than now...*



# Pre-Modern Technological Circle



# Modern Technical Circle



# Post-Modern Technological Circle



**NEW TECHNOLOGY**

**GLOBAL NETWORKS**

Production  
of goods

New  
Practices



**TIME / SPACE  
MODIFICATION**



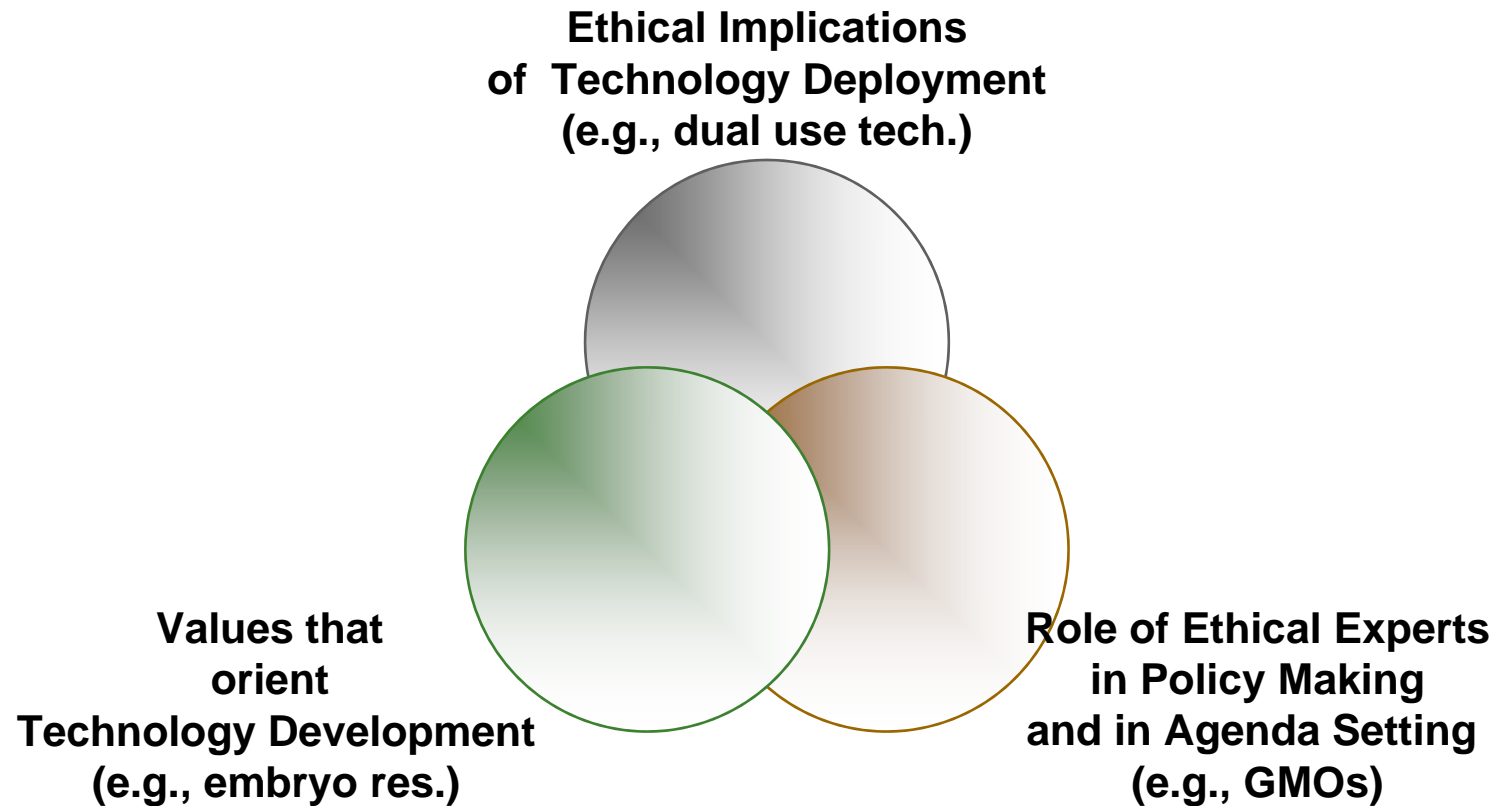
# Consequences of the technological circle.

- 1) Ethical issues should be considered at the very beginning of any technology. When a given technology is developed, values are already embedded in its “hardware” and the game is over.
- 2) Application of technology is still important, but less critical. It is vital to understand how people metabolise technology applications, how technology is incorporated in social practices;
- 3) Communication between experts (including ethical experts) and policy-makers in the field of technology policy is becoming increasingly important.



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# Ethics of/and Technology



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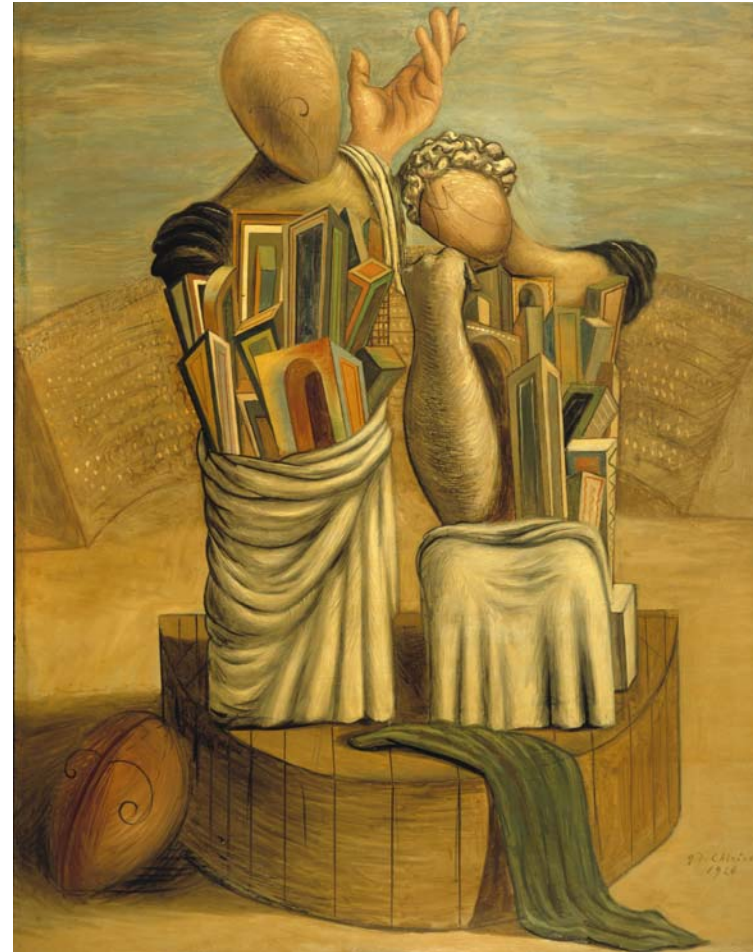
## But I don't want to discuss these points now (actually they would deserve a new conference)

I would like to return to  
Michel's lecture.

What is then the focus of new  
technologies?

We have found till now three  
answers:

- 1) Subjectivity (Michel  
Depuis)
- 2) Time and Space (Anthony  
Giddens)
- 3) Network (Manuel Castells)



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# Let me propose my answer...

## Wonder.

This is the essence of modern technology in my opinion.

We live in a world saturated with wonder, although perhaps we are only partly aware of this.

The fact is that wonder – from the Enlightenment on - has not been well reputed.

Among scholars, wonder is often object of mild condescension. Wonder is popular and trivial, too popular and trivial to be appreciated.



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Today one may enter a scientific career through wonder, but one cannot persist in wonder, at least not in public.



“It is owing to their wonder that men both now begin and at first began to philosophize” (Aristotle, Metaphysics)



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# Wonder in the Classic Age

- For Aristotle wonder leads people to search for causes and is then essential to the process of philosophical inquiry.
- Arabic philosophers echoed Aristotle:  
“Wonder (*admiratio*) induces speculations about causes”

(*Avicenna*)



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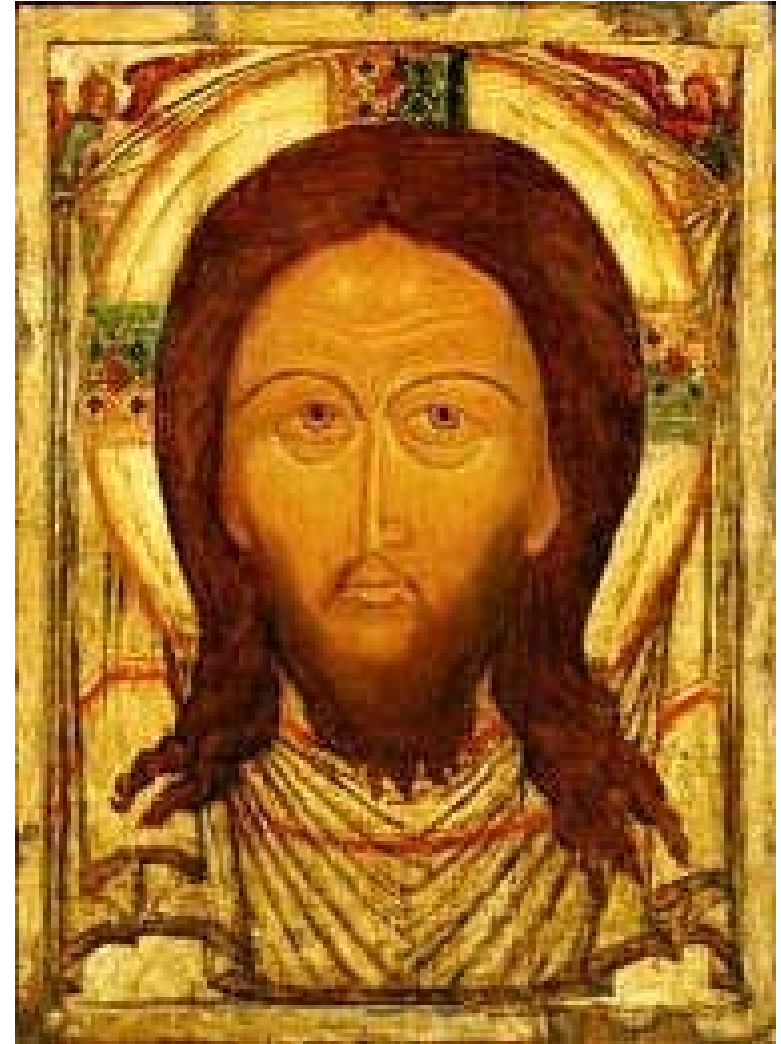
# Wonder in early Christianity

- At the beginning of Christianity, wonder was thought as the proper response to God and his marvellous creation.
- Augustine celebrated the human dimension of wonder, by referring to Matthew 8.10, when Jesus marveled before the faith of a Roman centurion. Writes Augustine: “if our Lord marveled, it means that we should marvel”



## A God who marvels

- No one has noticed – at least as far as I know - the astonishing, philosophical and theological, consequences of Augustine's intuition, say a God who marvels.
- Why God marvels? This question should deserve a life of study.



# Marvel in Scholastic Philosophy

However Christian Philosophy soon developed a distaste for marvel. Marvel was too close to the realm of demonic and supernatural.

Albertus Magnus described marvel as shocked surprise provoked by ignorance.

His most famous student, Thomas Aquinas, treated marvel as a minor key.

Roger Bacon as well identified marvel with ignorance.



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# Marvel in Scholastic Philosophy

The most comprehensive and systematic attempt to obliterate marvel as a philosophical category was made by Nicole Oresme in *De Causis Mirabilium* (1370).



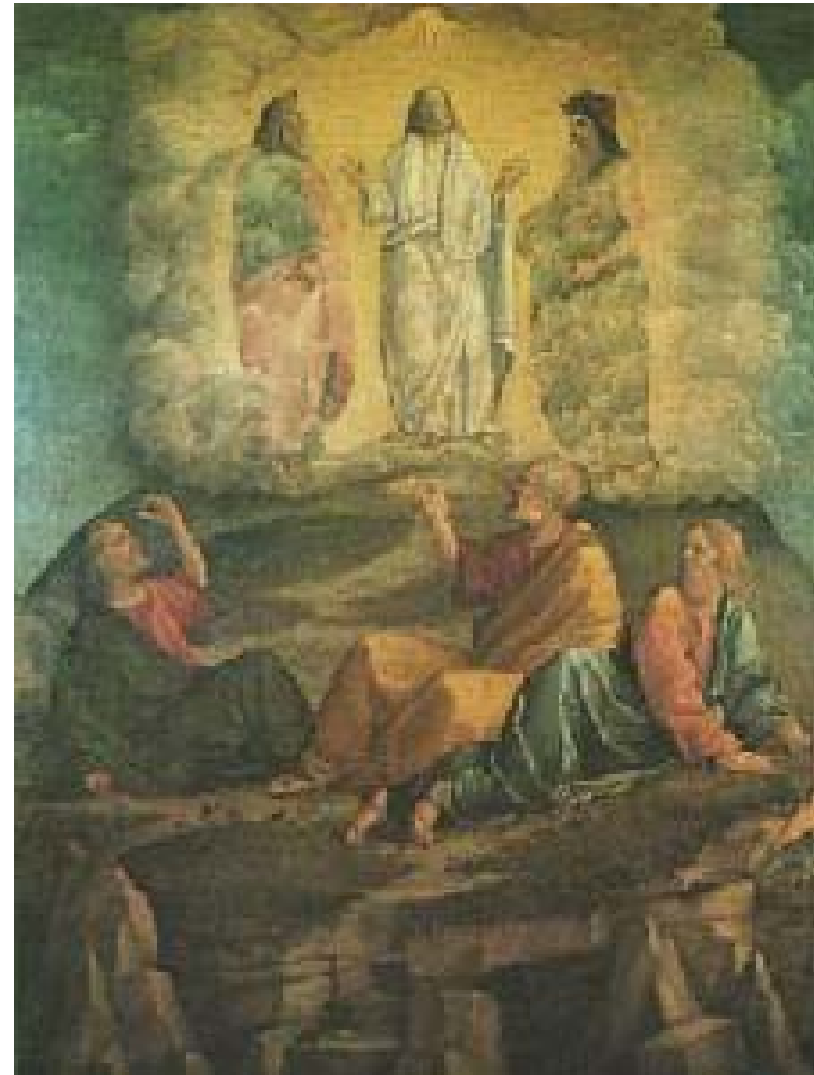
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# Marvel in the Renaissance

Marvel becomes again part of philosophy with Natural Philosophers of the Renaissance

Ficino, Giovanni della Porta, Francis Bacon, Pomponazzi shifted the marvel of nature from the periphery to the center.

They reclaimed for natural philosophy not only wonderful phenomena, but also the emotion of wonder itself.



# Marvel in the Renaissance

Renaissance natural philosophers aimed to unravel marvellous phenomena.

For them marvel was not just symbolic. Marvel allowed the man who understood it to control natural forces.

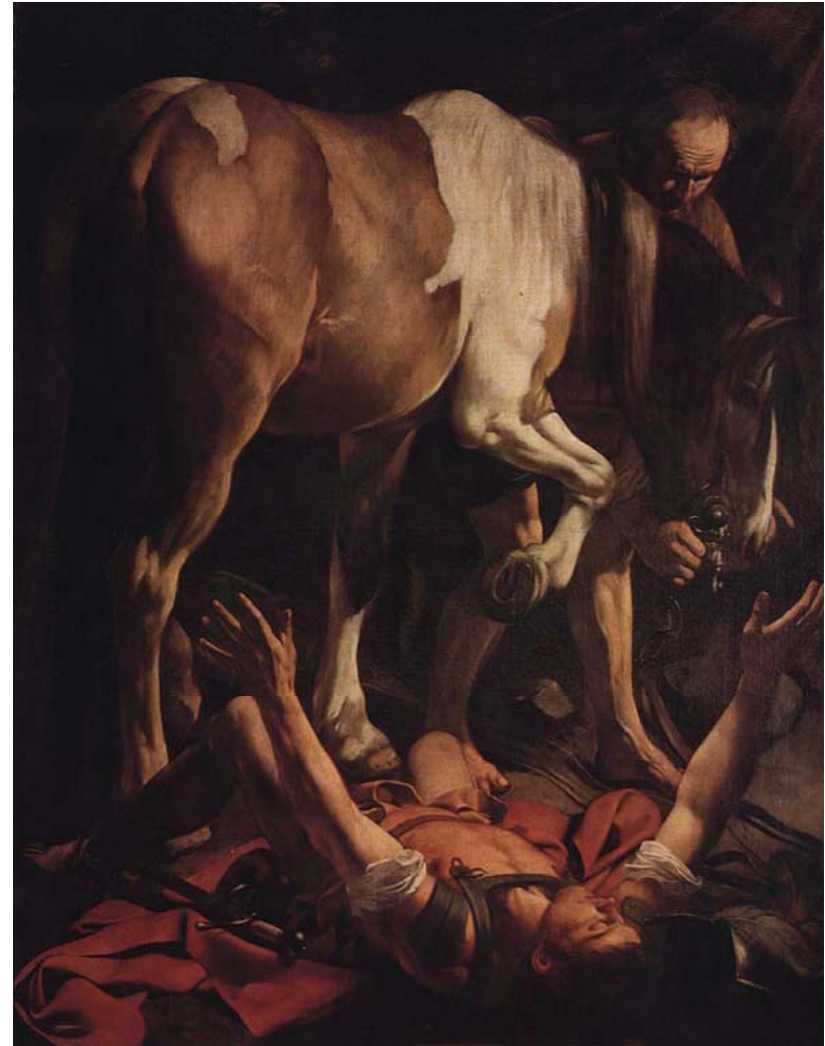


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# Wonder in the Baroque period

The marvel of Renaissance Natural Philosophers shaded imperceptibly into the larger baroque category of wonder.

The seventeenth century was the century of wonder and Baroque culture was the culture of wonder. This is – I argue – what makes our era as close to the Baroque era.



# Wonder and Science

I'm not certainly the first who notes that there is a number of similarities between our time and the Baroque age.

We live – one may say – in new baroque period. In particular there are impressive similarities in the way in which post modernity and Baroque deal with science and technology.



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# Wonder and Science

Baroque scientists, philosophers, artists were expected to surprise the spectators.

Today what shapes public opinion is more the way in which scientific discoveries are presented to the public than their actual essence.

In turn, the way in which the public is formed affects scientific research, both by influencing funding agencies and exerting psychological pressures on researchers.



# Wonder and Science

Wonders have been never neutral in political, social, and ethical terms.

Wonder in Baroque age was the mainstay of political practices. As masses of urban people became increasingly visible and politically active, sophisticated forms of control and manipulation were designed and implemented by the establishment.



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# Wonder and Science

Complex choreographic apparatus in political ceremonies, trompe l'oeil in church frescos, extraordinary automata and powerful new weapons were meant to stir the wonder of people.

Celebrated for the ingenuity of their authors, these wonders entertained the elite while seducing, ruling and controlling urban multitudes.



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# Wonder and Post-Modernity

Post modernity is confronted with revolutionary and accelerated changes in science and technology that challenge in different ways some basic implicit and explicit moral assumptions and legal norms.

Wonder is a key instrument to convey a new world picture through scientific communication.

Wonder is a powerful tool for social control.

Yet by exciting **curiosity** wonder may also promote a true public understanding of new technologies.

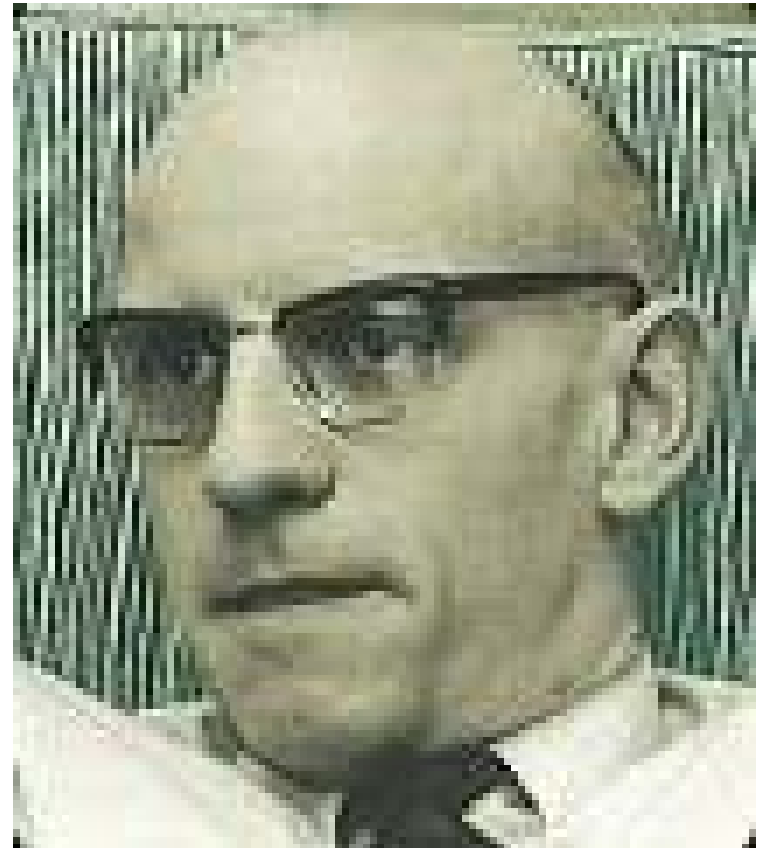


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# Michel Foucault

*“[curiosity to me] evokes the care one takes for what surrounds us, a certain relentlessness to break up our familiarities and to regard otherwise the same things; a fervor to grasp what is happening and what passes; a casualness in regard to the traditional hierarchies of the important and the essential.*

***I dream a new age of curiosity”***



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## Conclusion

Any serious conversation on technology needs to quote Heidegger. When you speak of technology you **MUST** quote Heidegger.

To conclude, let me thus quote Heidegger...



# Denken ist Danken

- I would like to thank Michel, for his paper
- The Centre for Biomedical Ethics and Law of Leuven for their warm hospitality and for giving us the opportunity to be here, in this splendid baroque church
- Paul Schotsmans, Maurice De Wachter, Francisc Abel, Patrick Verspieren, Richard Nicholson for having started, 20 years ago, the EACME
- But, above all, I would like to



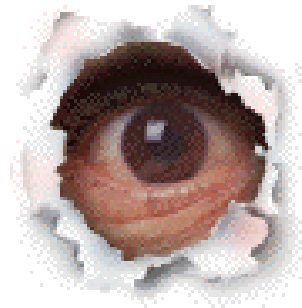
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# THANK YOU

Thank you all for your attention and participation.

As I told you at the beginning of my conversation, I had no other aim in my mind but to spend 20 minutes thinking together with you. We did. Thank you.





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