

Dez anos de Arranjos e Sistemas Produtivos e Inovativos Locais

Rio de Janeiro, 26 a 28 de novembro de 2007

*Sessão Plenária 5:*

**Cultura, Inovação e a Era de Conhecimento**

## **A cultural revolution to tame and to monitor**

Marc Humbert, Pr University of Rennes 1,

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MH-203- cultural revolution- 2007

**PEKEA** : Political and Ethical Knowledge on Economic Activities, <http://www.pekea.org>

## Cultura, Inovação e a Era de Conhecimento

### A cultural revolution to tame and to monitor

1. A much « wider » framework approach to « Innovations Systems »
2. A few revolutions and a New Era ?
3. Knowledge from Religion to Science, from Arts to Industry?
4. Unicity, Diversity and Competition about Innovation
5. A turning point with Alphab**it**isation
6. A cultural revolution in the making

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## Cultura, Inovação e a Era de Conhecimento

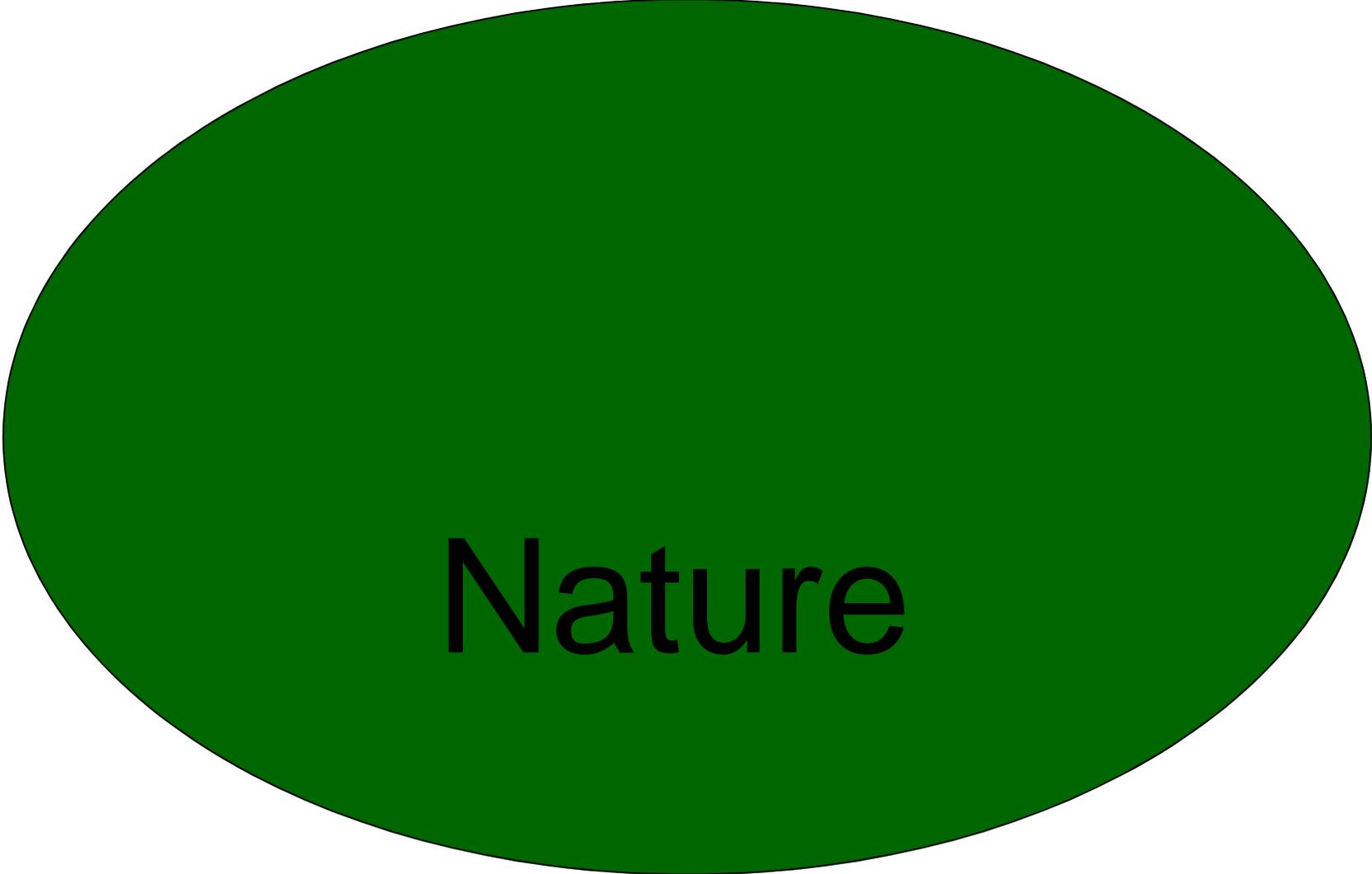
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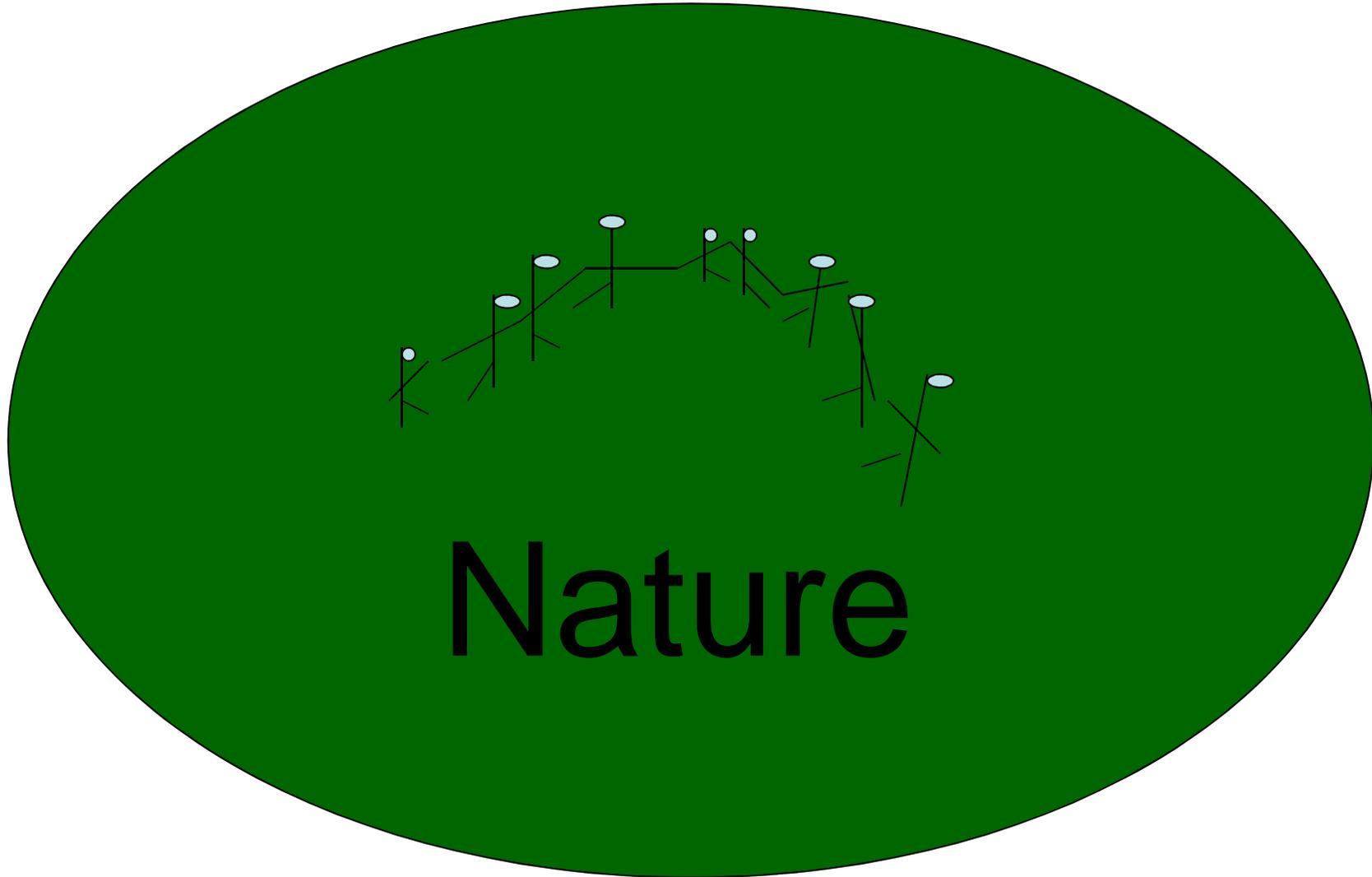
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# Our Planet Earth



Nature

Life is born; is it the beginning of humanity ?

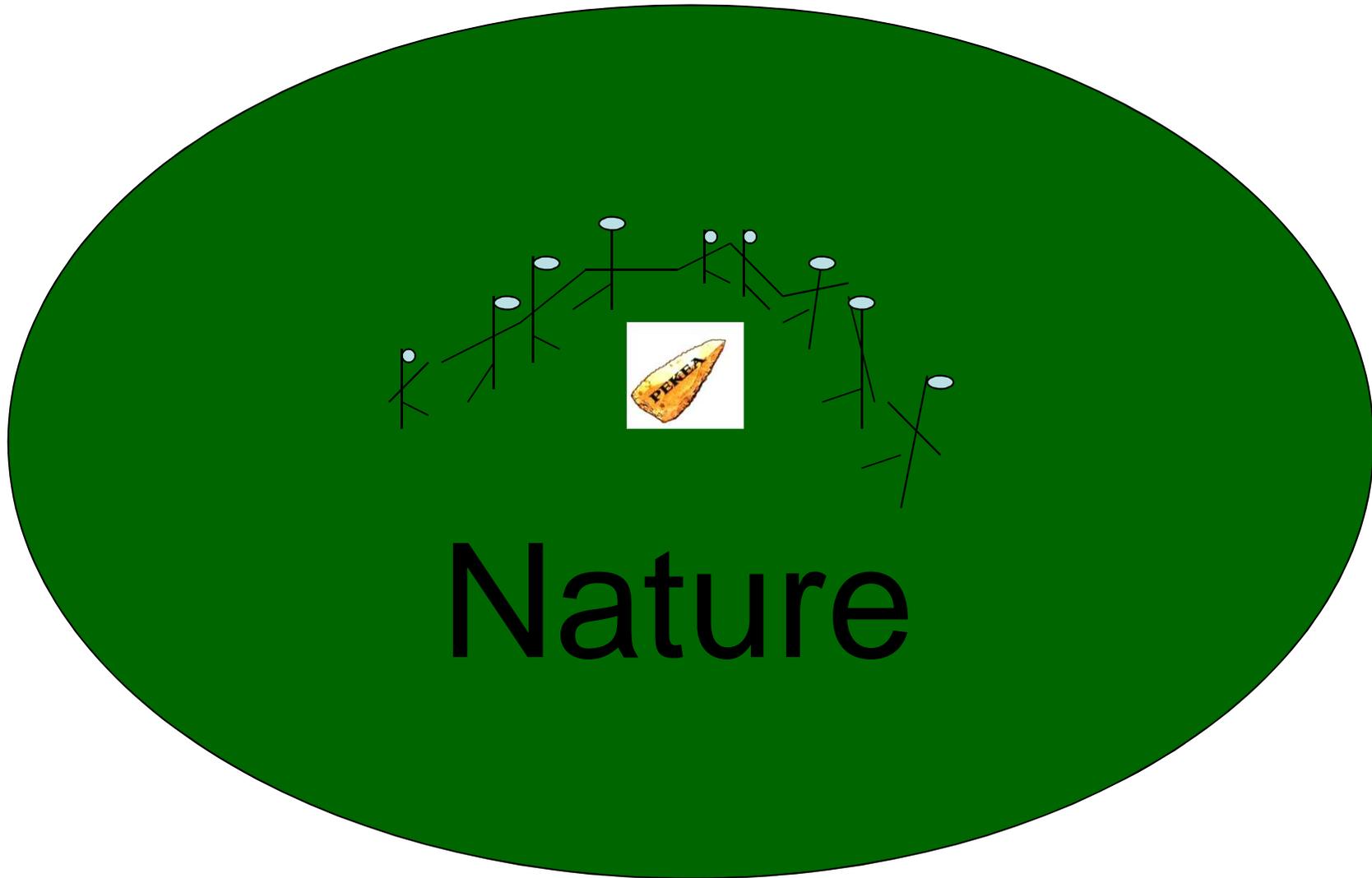


May we find tools ? If yes...

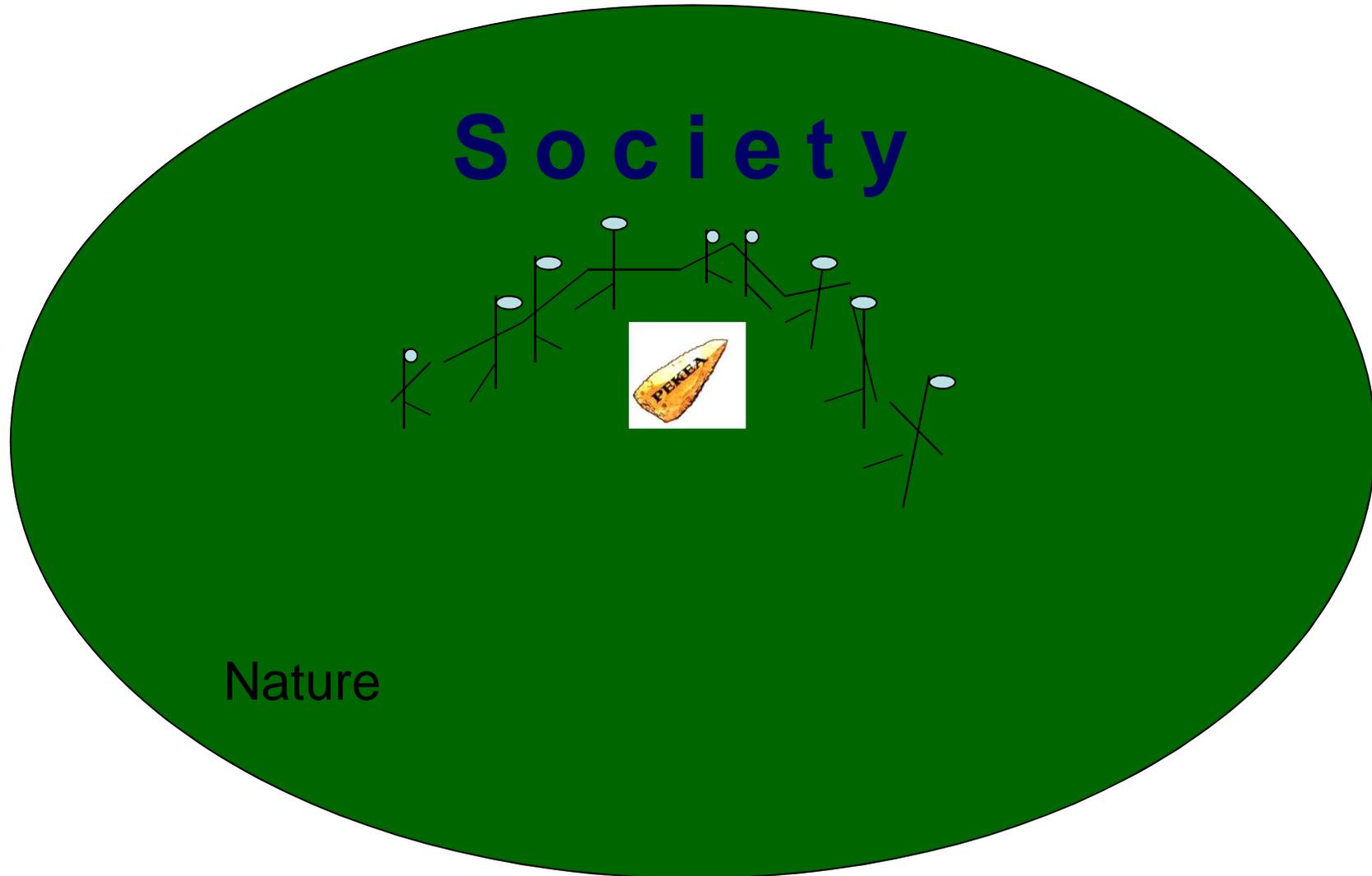


Nature

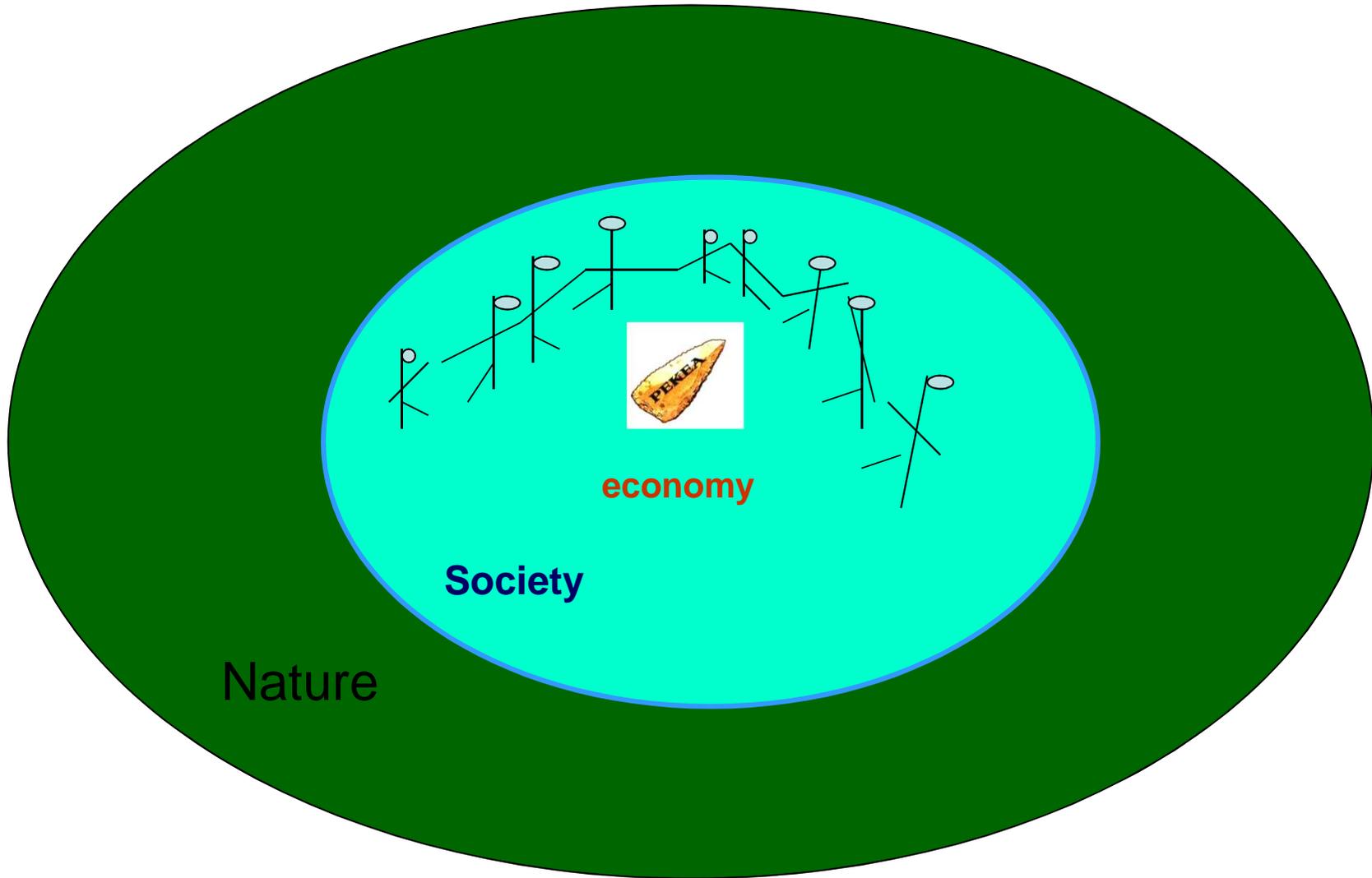
Humanity were born within nature



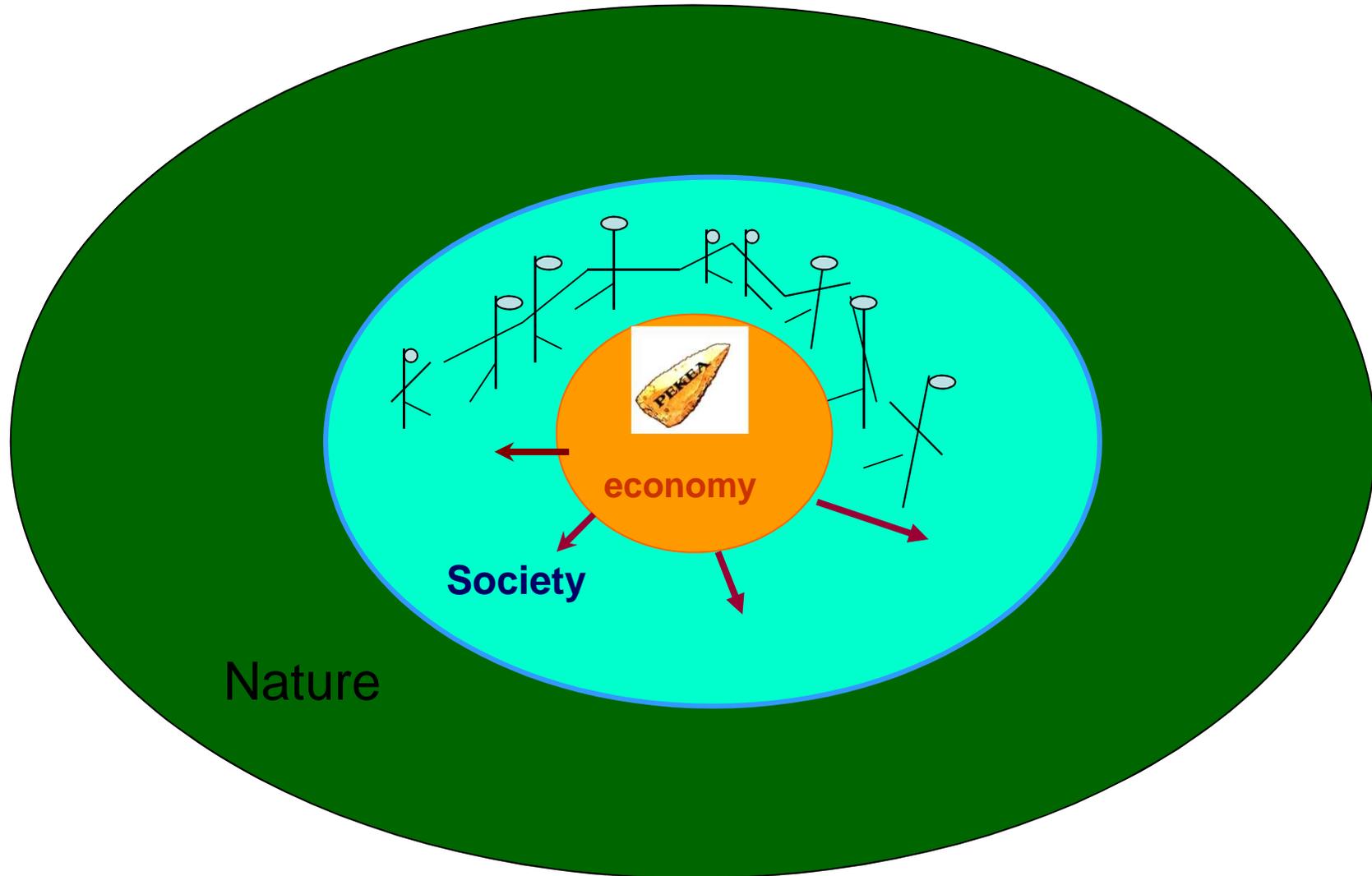
Collectively, humans make a world from nature  
« the society »



# Society is self organizing to survive



Society (in many places) tends to reduce itself to be an economy even when life is secured but by choice to bend all the life to  
« **economics** »



## Economic Activities

The overwhelming burden of the economic paradigm.

We are always “active”, involved in a process of making something

By essence or “nature” there is no border line in human action to separate “economic” activity from other activities

The only criterion is : Is there a price for any quantity?

The outcome of any action is something for the actor and usually there is also something for others, at least some kind of spill-over.

A few activities are indispensable to survive : to breathe fresh air, to eat, to produce food, to dream...where is the border line? No other criterion than “priced activity”

The outcome (material or immaterial) of any activity may be turned into **a merchandise**

**The Dominant pattern of thinking the society  
reduces it to a Market place  
for free circulation of merchandises**



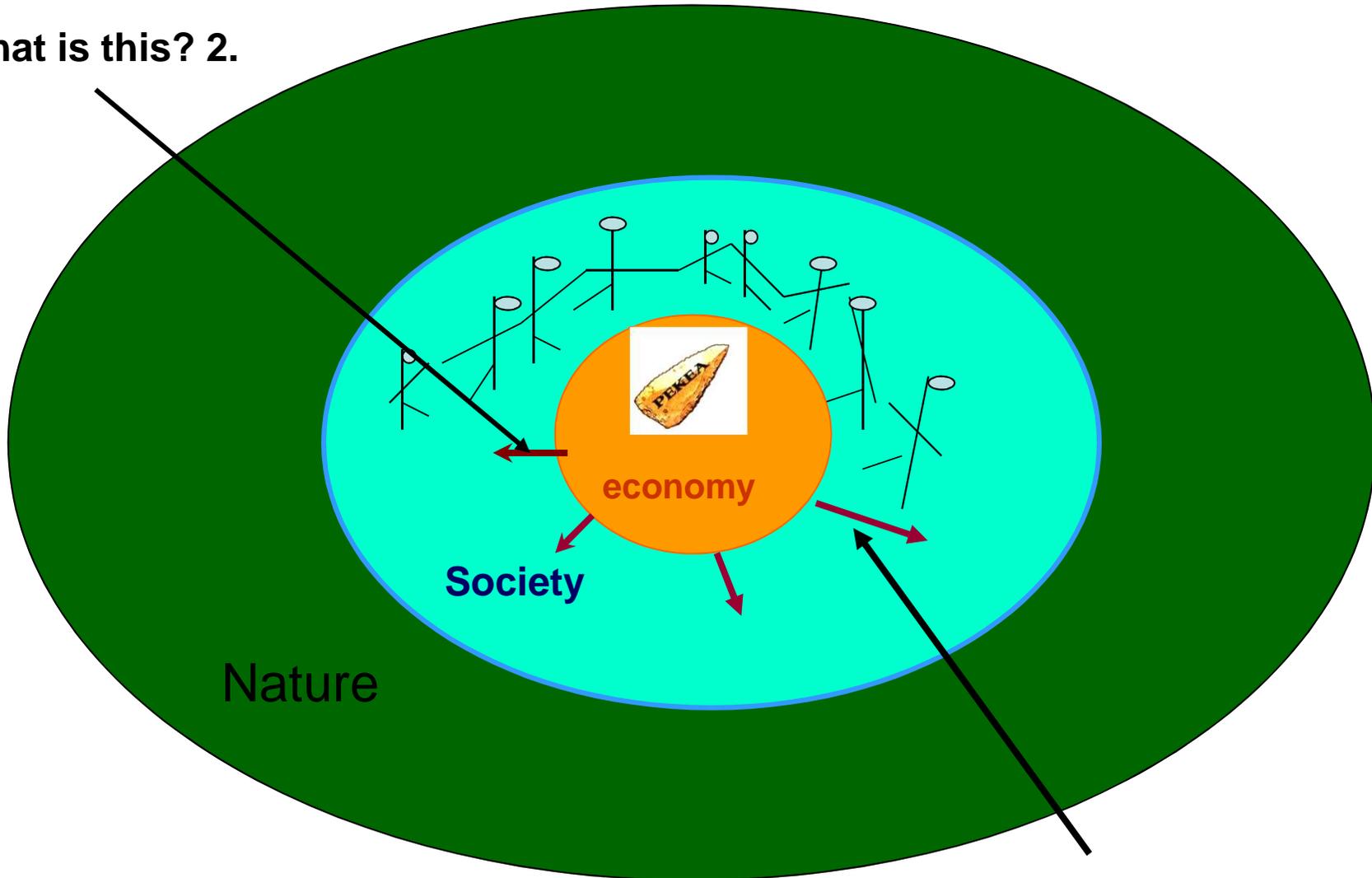
**Remove all barriers! Level the playing field !**

**Let free competition do its job**

**It ensures efficiency and a single price for any thing anywhere**

Society (in many places) tends to reduce itself to be an economy even when life is secured but by choice to bend all the life to  
« **economics** »

What is this? 2.



What is this? 1.

One driving force to expand the performance of economy is :

« technological change » or « innovation »

It stems from the way the Society organised itself and the way to « see » the Society when it elaborates technological change or innovation is to make an approach

**in terms of « innovation system ».**

One driving force to expand the performance of economy is :

« technological change » or « innovation »

I am used to name it the **Societal Capacity for Technical Change**

It is the capacity of a society to make its economy more efficient in terms of production of goods and services in order to meet the needs of its members.

List (1841, ed Française, 1854, p. 239):

"le pouvoir de créer de la richesse est plus important que la richesse elle-même [...] la prospérité du peuple ne dépend pas comme Say le croit des quantités de biens et des valeurs d'échange qu'il possède mais du niveau de développement de ses forces productives".

The power to create wealth is more important than wealth itself ... the prosperity of a people does not depend on the possession of exchange values but on the level of development of its productive forces

*My translation from the French*

## **A double dynamics of the transformation of society**

With this approach

What is important is not the territory in itself

But the group of people enrooted within a territory who are organising themselves as one societo-territorial system : one among so many

### **Arranjos e Sistemas Produtivos e Inovativos Locais**

i.e. Societies, nations, regions, valleys, provided that they have some features to make them able to master their societal reproduction and to ensure a lasting existence.

These groupings give a more or less importance to economy, but everywhere, since the beginning of humanity, economy with its technical basis have plaid a fundamental role to transform the societies

## **A double dynamics of the transformation of society**

The dynamics of society, simultaneously

(i) is creating a local « territory »; a societal organisation of the space

(ii) is creating societal capacity for technical change and production, first in this local territory

The distinction may seem not very interesting as far as the two dimensions are totally overlapped on one local territory, but

- Along years a growing part of (ii) has become de-localised
- The two processes ask for a different kind of analysis

## **A double dynamics of the transformation of society**

The two processes ask for a different kind of analysis

(i) is creating a local « territory »; a societal organisation of the space

***Societal organisation is applying to relationships between people***

(ii) is creating societal capacity for technical change and production, first in this local territory

***Creation of capacity for production involves interaction with nature, and insertion of humanity in Nature to turn it into its « mundo »***

## *Creation of capacity for production involves interaction with nature*

The Nature differs from one territory to another one

However the law of Nature, the law of physics are the same everywhere

We may say North instead of South, but the gravitation law is not changed

There are a lot of non-local conditions

Even women and men forms a unique single specie and their main shapes leads to a reduce variety of glasses or lenses to improve their view,

Mainly technical solutions to same kind of problems –at least, up to now- have led to solutions that have proved to be of interest everywhere – that might be appropriate everywhere (mobile phones?)

Nevertheless, to be sure there are some tensions (point 4;) and differences (point 6.)

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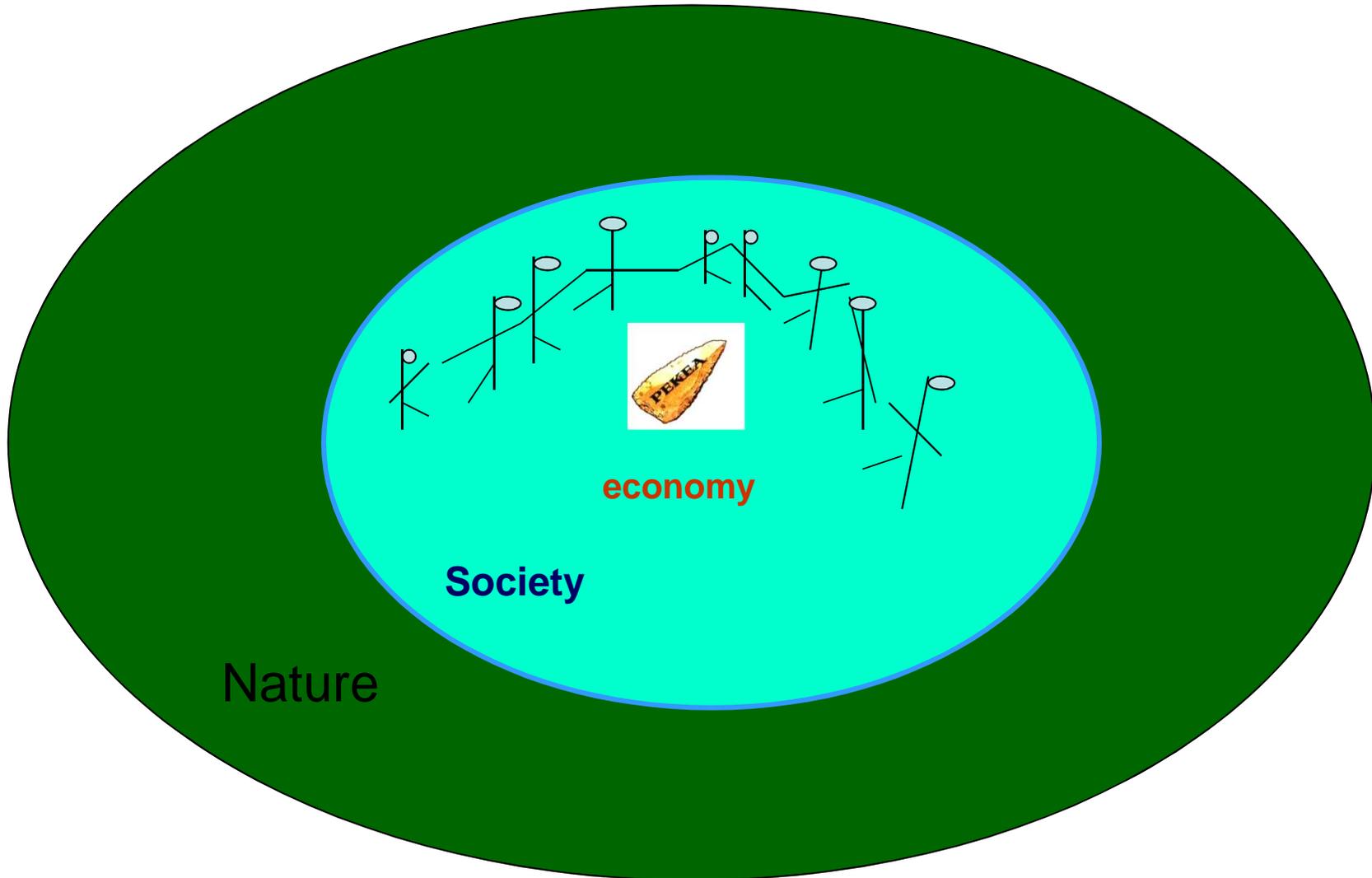
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## 2. A few revolutions and a New Era ?





## 2. A few revolutions and a New Era ?

### Prehistory

From the monkey to man, a **carved stone** (Africa?) will make the difference  
We take the lives of the animal and vegetal to make our living

*The Era of predation into Nature*

### Neolithics

Vers – 10 000, Writing, cities, empires thanks to **agriculture** (Middle East?),  
We tame animals, we cultivate plants, we take advantage of Nature

*The Era of cultivation of Nature*

### Industry

Vers 1780, big push in techniques, the so-called **industrial revolution** (Europe?)

*The Era of transformation of Nature*

**What next?**



## 2. A few revolutions and a New Era ?

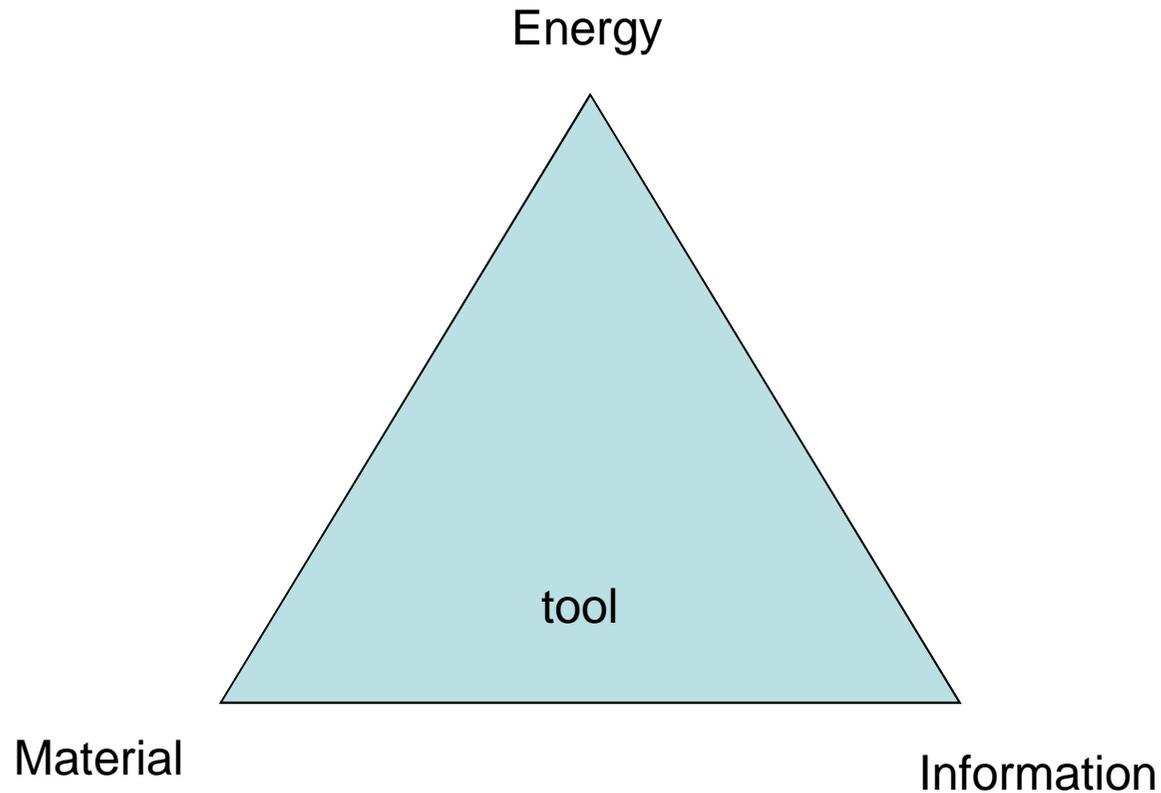
### What next?

**To try to have some idea about the next « revolution » which is in the making, we may have a little deeper look into the transformation Era when technical change have become the most important thing for Society and when economy has overcome all other preoccupations of all important people...**

**In the Era of transformation of Nature  
Technique is the new God,  
But what is technique ?**



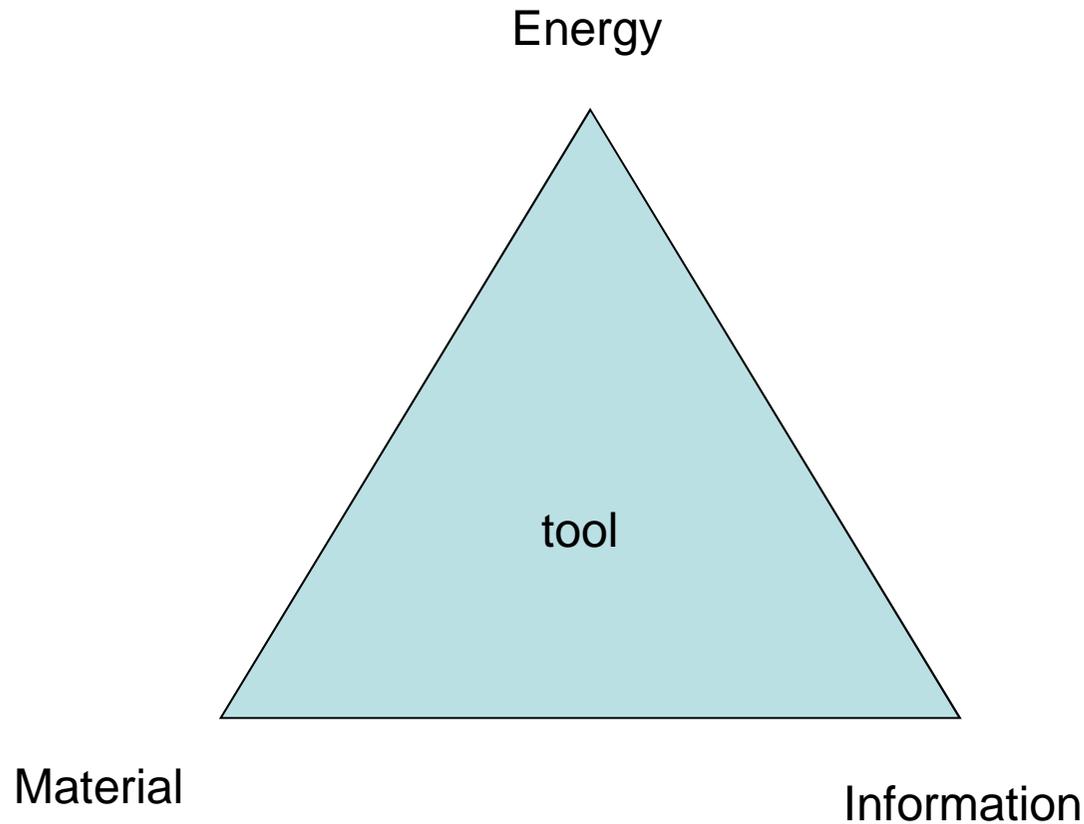
**A tool with its instruction fo use**



**Technique is a tool with its instruction for use**

**It has 3 dimensions to get something from Nature at the expense of which we are living**

**All tools have these 3 dimensions, or at least « instruction for use », and they are more and more numerous since the stone age and more and more complex**



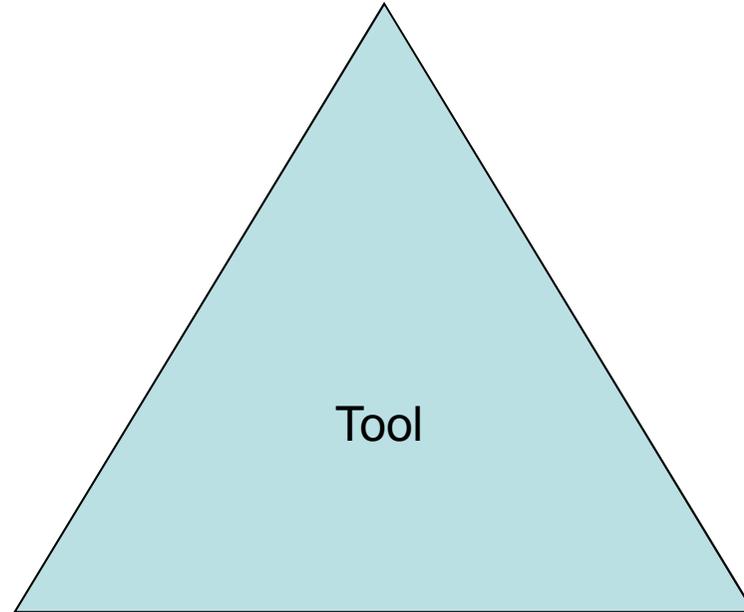
**It is easy to imagine that if a technical change may affect one of these 3 dimensions to an extent that it raises brutally and strongly the performance of one of this generic tool, all the tools that are derived will be affected and finally the societal capacity for technical change will be enhanced terribly.**

This is what happened; after years of small continuous changes, (but I say nothing about the invention of how to make fire) some important ones came with agriculture and a tool to plough

And then this extraordinary move from the use of tamed energy to the use of « produced » energy and we enter in the era of transformation via this dimension

1790

the age of steam



Tool

the age of steel

1880

the age of electronics

1970

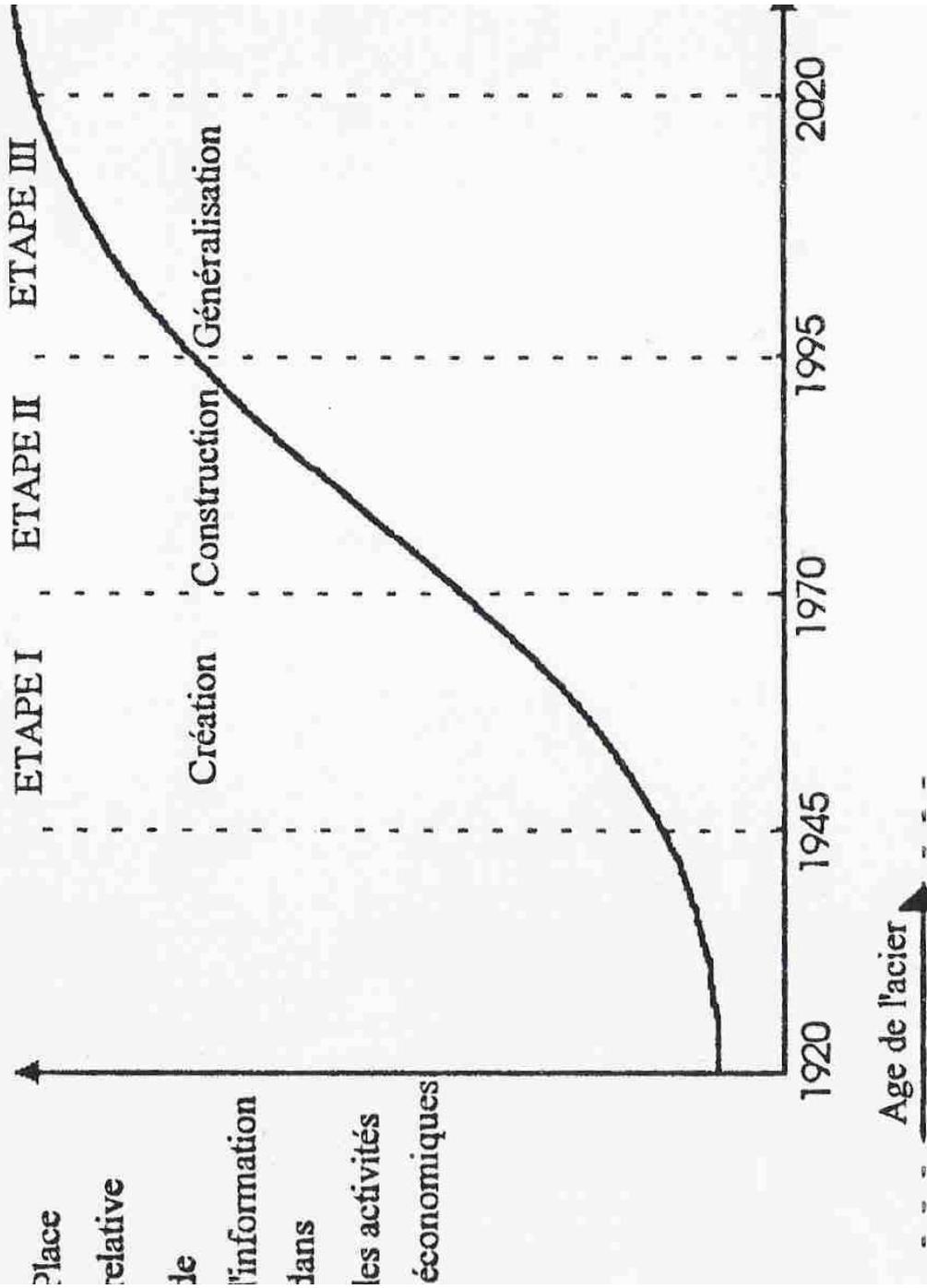
the three ages of the Era of Transformation

Every revolution needs time to be visible and to change the society;

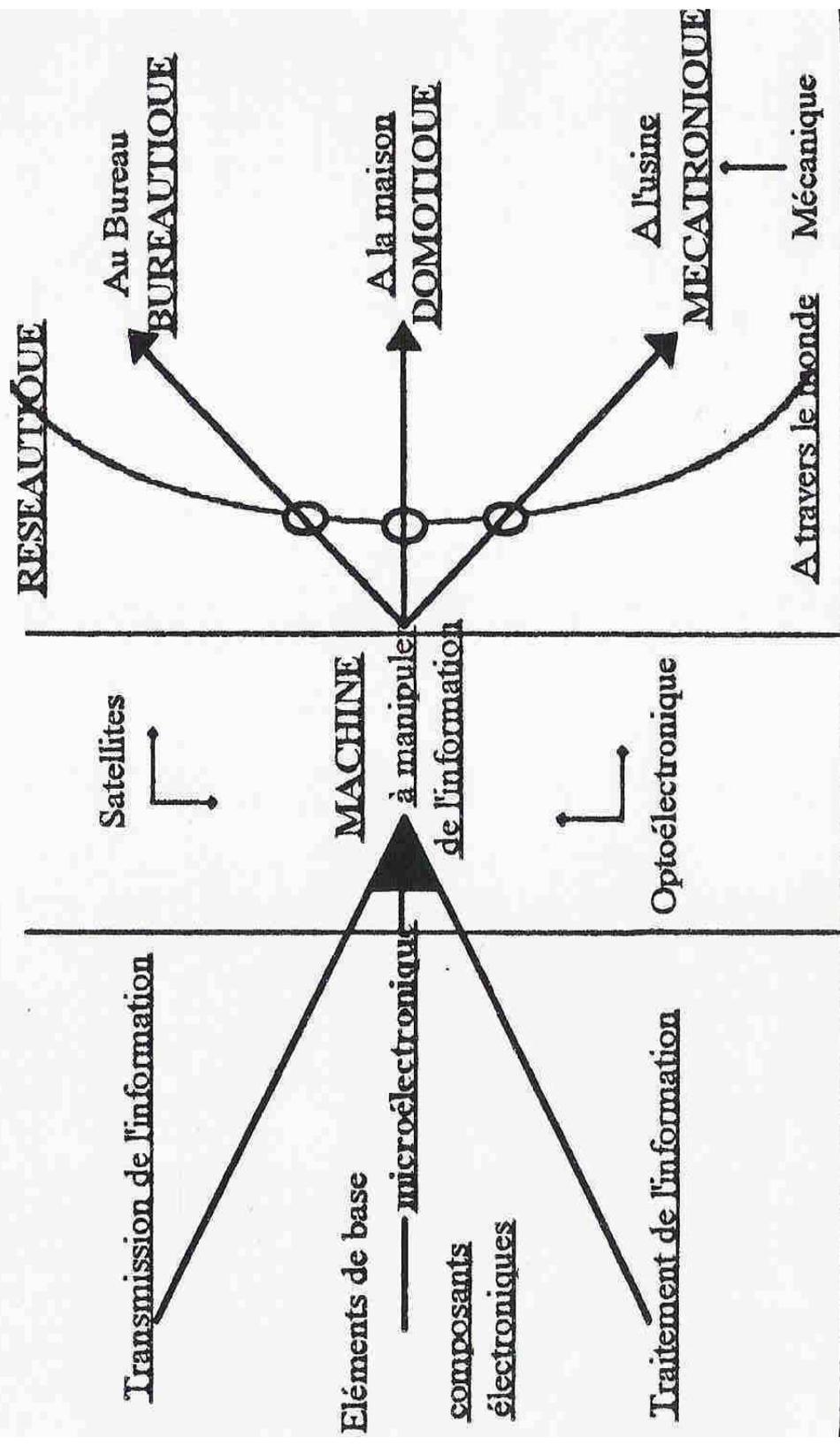
I assume that this is done one for all, but it is not « implemented »  
« in operation » at the same time in every society of the planet (point  
4.)

Similarly, every age starts when the preceding one is not finished,  
and it is not implemented or in operation at the same stage  
everywhere.

# Le cycle de vie de l'âge de l'électronique



*De l'âge de l'électronique à l'âge de la communication*



1971

1985

1995

âge de l'électronique

âge de la communication

UNIFICATION - - - DIFFUSION

To a certain extent

The word '**Knowledge Era**'

Has been used to name the period starting in 1995

When the age of electronics is generalised in the more advanced industrial apparatus of production (perhaps it is somehow different , see 6.)

When the « best » production is supposed to be Science Based...

**But what is Science?**

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### 3. Knowledge from Religion to Science, from Arts to Industry?

Science? To understand Nature. Not at **the beginning** and still...

« Com-prendre » how to be part of Nature :

Answers have been for millions of years : **Religion** and **Arts- Culture** in the Anthropological sense

Magic, wizzards

During the **cultivation Era**

Agriculture and mainly **crafts, Artisanat** , de l'artiste à l'artisan

**Manufacture = Hand Made**

An Era of techniques, **in respect of the power of Nature**, power and admiration for trees, timber, fire, steel to forge as a blacksmith...

Since the beginning : know-how, ability to transmit from one generation to another one, by apprentissage, by learning,

**Knowledge from the beginning is crucial**

### **3. Knowledge from Religion to Science, from Arts to Industry?**

Science? From Alchemy to chemistry: Science was born, finally.

The century of Lights, of liberty and the birth of **the transformation Era**

**The power of Man upon Nature thanks to His Knowledge!**

**Man is free (democracy) no more Gods, no more Kings**

*Laissez faire laissez passer, let pursue the “Wealth of Nations” pursuing our individual wealth and don't care about the collective interest!*

The race for wealth started before the so-called Industrial revolution

The outcome of this will thanks to this technical change, has been times times more important and lasting growth despite up and downs have begun and is still the main societal occupation.

It has raised difficult questions of « local », « national » societies and their relations to other local, national societies.

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## 4. Unicity, Diversity and Competition about Innovation

Is there a single technological evolution for the planet?

Is there an uneven situation among Societies regarding their Societal capacity for technical change and their level or productive forces?

If the answer is yes,

Then there is a technological frontier,

And some Societies are « front runner » and trying to shape the future of the technological evolution

And some Societies may be considered as « follower » « lagging behind » « latecomers », « catching-up »

Unless they prefer to follow their own way of living as far as external pressure allow them to do it (success stories are wanted)

## 4. Unicity, Diversity and Competition about Innovation

The world technological trajectory has been the outcome of a selection process

A world competition ;

Hegemonic countries or firms have imposed in some cases their “solution” creating some lock-in effects and have decided what will be the Planet today and to-morrow.

Is there no diversity of trajectory?

yes,

Concrete tools, concrete technological evolution are “localised”

Are embedded in people, in “collective” in Culture,

but it is only a question of wrapping and colour, delay and *democracy*?

There are “Enterprise’s trajectories”, Nations’, Regions’ trajectories

Up to now, there is a fierce competition between them on the ground of their efficiency to produce growth assessed by market prices (=values)

## **4. Unicity, Diversity and Competition about Innovation**

A world competition ;

However, until the turning point of alphabitisation

There was a practice that have benefitted in Richest countries – front runners or immediate followers- to a relative large part of their people, at the expense of the Poorest countries, - lagging behind countries-

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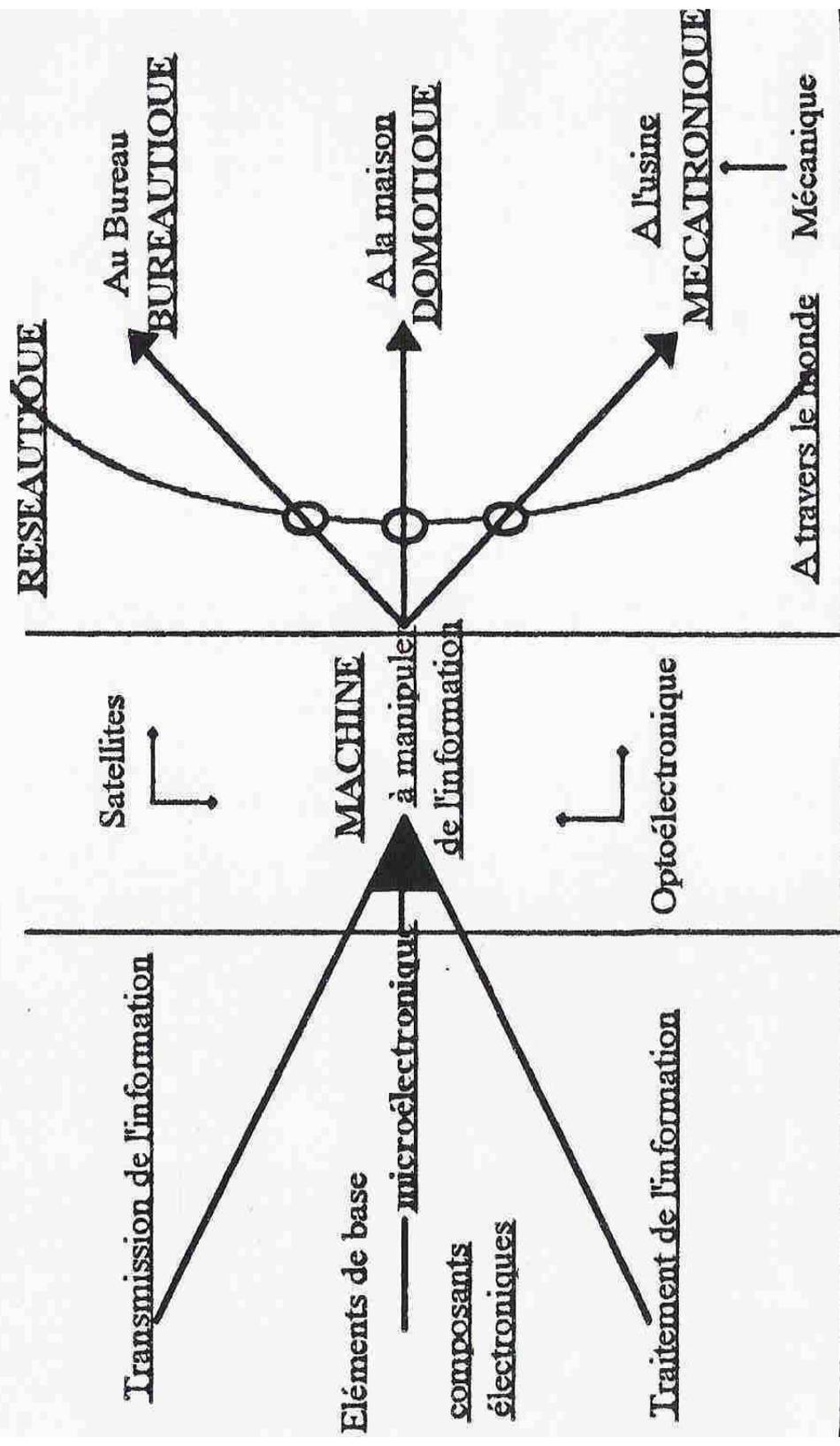
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## 5. A turning point with Alphabetisation

# De l'âge de l'électronique à l'âge de la communication



1971

1985

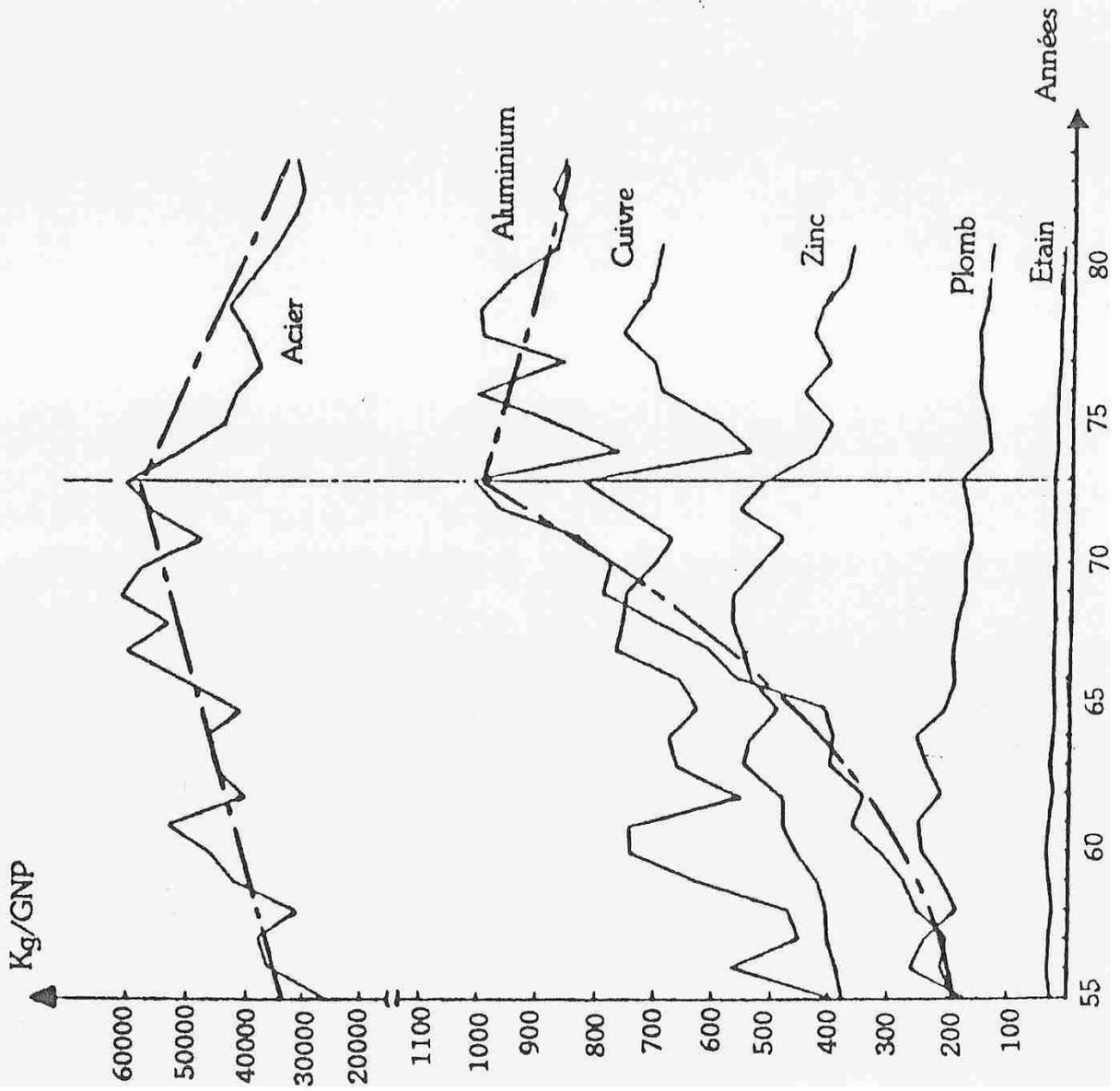
1995

âge de l'électronique

âge de la communication

UNIFICATION - - - DIFFUSION

**Evolution de la consommation de métaux par unité de GNP au Japon (inversion de tendance après 1973)**



## 5. A turning point with Alphabitisation

Alphabitisation starts when all signs, written, orals, video, can be converted into « bits » and manipulated, stocked, transmitted and re-converted in a « human directly accessible form »

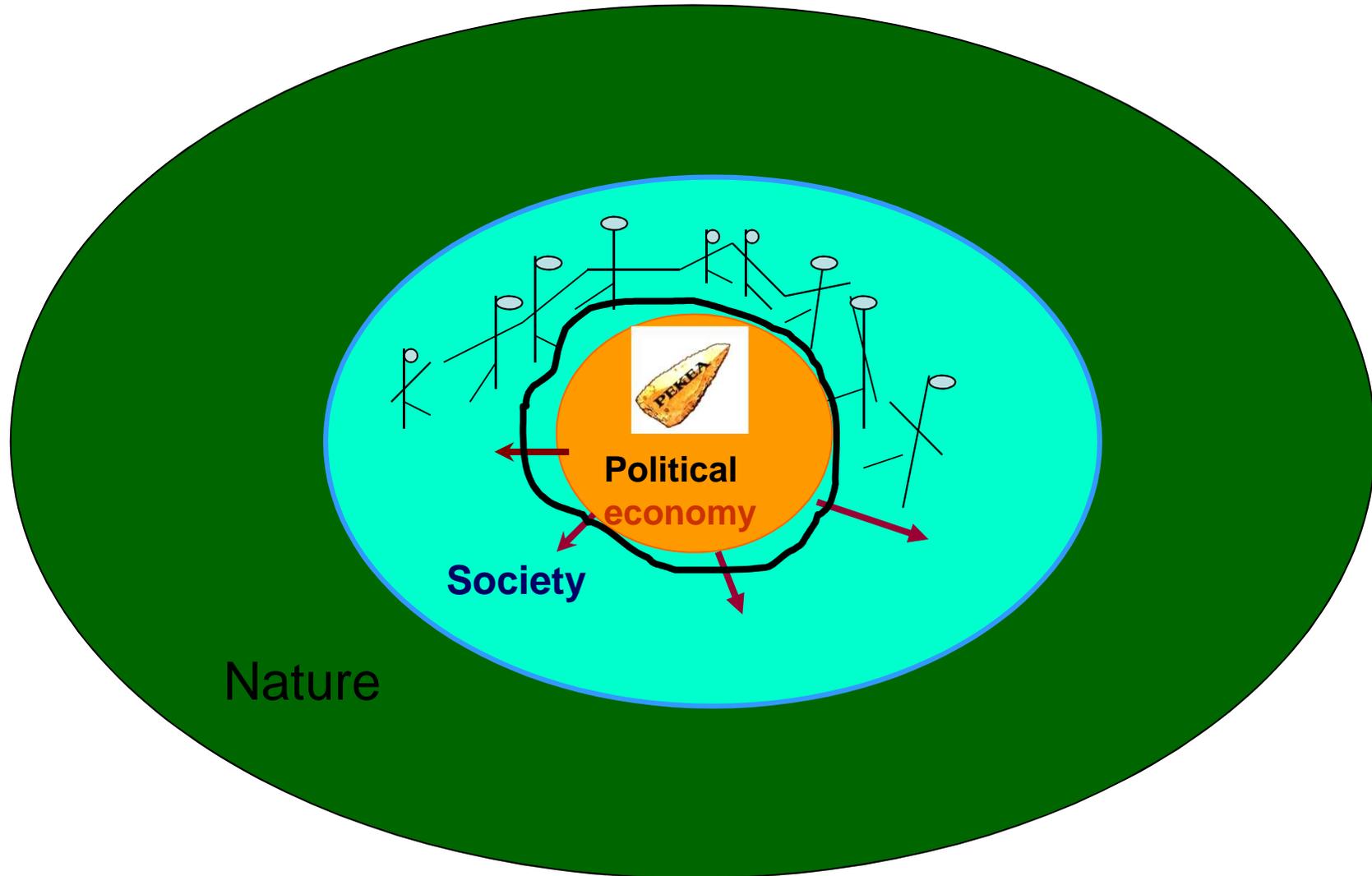
This is the core of the so-called ICT revolution or sometimes Knowledge Era;

The crucial date is 1971 and the invention of the microprocessor

But around the years 1965 to 1985 we watch simultaneously very important changes in the organisation of the relationships between people in front runner and first follower countries.

Despite the official allegiance to the Smithian discourse the concrete national societies have been living under the Wagner Law (conseil of Bismarck), this is a way to deal with the increasing power of economy in Society

Society (in many places) tends to reduce itself to be an economy even when life is secured but by choice to bend all the life to  
« **economics** »



## 5. A turning point with Alphabitisation

Economy should be at the service of the society, but the Smith principle fails to allow that

Science is first for the sake of science and researchers want to be free to search everything

Then Science is put at the service of the industry

However until the 70s, in front runner and follower countries

The « democratic » State claims to be (and is more or less) at the service of the people, of the society.

Thus industry and technology are put at the service of society

Nixon told himself Keynesian , the last one in 1972

In 1973, Chicago Boys in Santiago, Thatcher in 1979, Reagan in 1981, Berlin Wall 1989 for a climax of change etc.. Everywhere privatisation, deregulation, financierisation

**The Science is a the service of Industry and the Industry at the service of Finance**

**The Dominant pattern of thinking the society  
reduces it to a Market place  
for free circulation of merchandises :  
this includes Enterprises, People, Culture and Knowledge**



**Remove all barriers! Level the playing field !**

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## 2. A few revolutions and a New Era ?

### Prehistory

From the monkey to man, a **carved stone** (Africa?) will make the difference  
We take the lives of the animal and vegetal to make our living

*The Era of predation into Nature*

### Neolithics

Vers – 10 000, Writing, cities, empires thanks to **agriculture** (Middle East?),  
We tame animals, we cultivate plants, we take advantage of Nature

*The Era of cultivation of Nature*

### Industry

Vers 1780, big push in techniques, the so-called **industrial revolution** (Europe?)  
La **révolution industrielle**

*The Era of transformation of Nature*

## What next?



## 6. A cultural revolution in the making

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*The Era of transformation of Nature*

### Culture

Around 1980, big push in techniques, for information and subsequently to  
challenge Nature

The **Knowledge revolution**

*The challenge of an Era of creation within or against Nature*



## *The challenge of an Era of creation within or against Nature*

### **Creation**

**Science and technology make everything possible – it seems**

We are Gods

GMO, Genetic therapy, gadgets with mobile phones everywhere in the planet

On my computer every text of every library in the world

The **Knowledge revolution**

**Nature is exhausted: are there technical solutions ?**

A few scientist think there are.

And a lot economist think that there are market solutions: price and competition

**As for knowledge**

IPR, put a price; culture entertainment, put a price!

I do think that we have no solution but political ones.



## *The challenge of an Era of creation within or against Nature*

### **Creation**

**Let stop to give first and unique place to market solutions**

**A country ist not first an economy**

**Culture is not first a market**

**Knowledge may be shared to grow**

**Competition is not the most important thing**

To think it differently we must see society as

A set of relationships between people and not circulation of things.

Learning cooperatively from each other

Sharing values to say what is important and not refer solely to the market price

Taking care of others and build trust

Organise local arrangement for a better life for all of us

Having fun altogether as part of our culture

Link freely and confidently with other societies.

**Is it an utopia?**

# another world is possible



**the civil society is invited to devise an  
economy with a human face,  
for a world  
where we will live happy altogether.**