



# The Eve of Digital Enlightenment

From Enlightenment to Entanglement

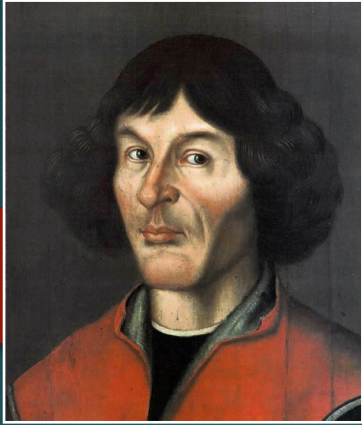
**ILYA LEVIN**

School of Education

February, 2017



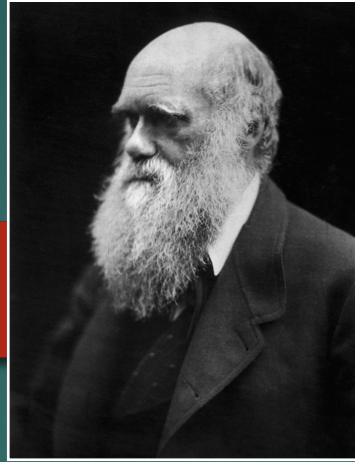
# Four Revolutions of Mankind Consciousness



1473-1543

THE FIRST  
REVOLUTION

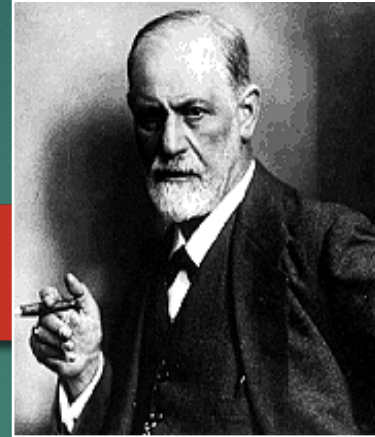
Copernicus



1809-1882

THE SECOND  
REVOLUTION

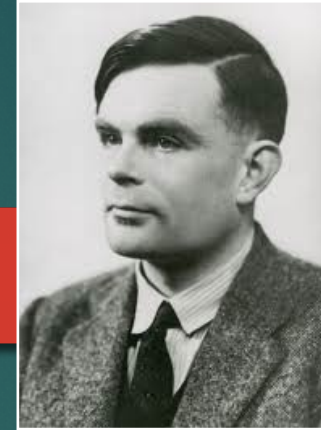
Darwin



1856-1939

THE THIRD  
REVOLUTION

Freud



1912-1954

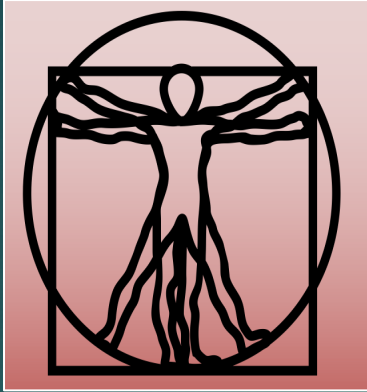
THE FORTH  
REVOLUTION

Turing



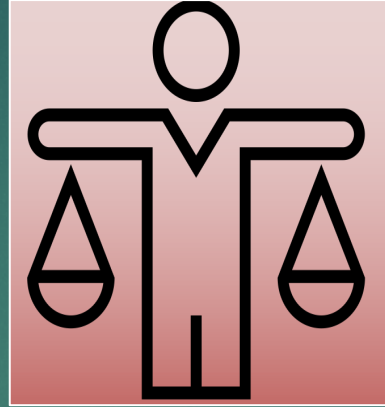


# PERSON



**1,000,000 years**

**Physical  
person**



**10,000 years**

**Legal  
person**

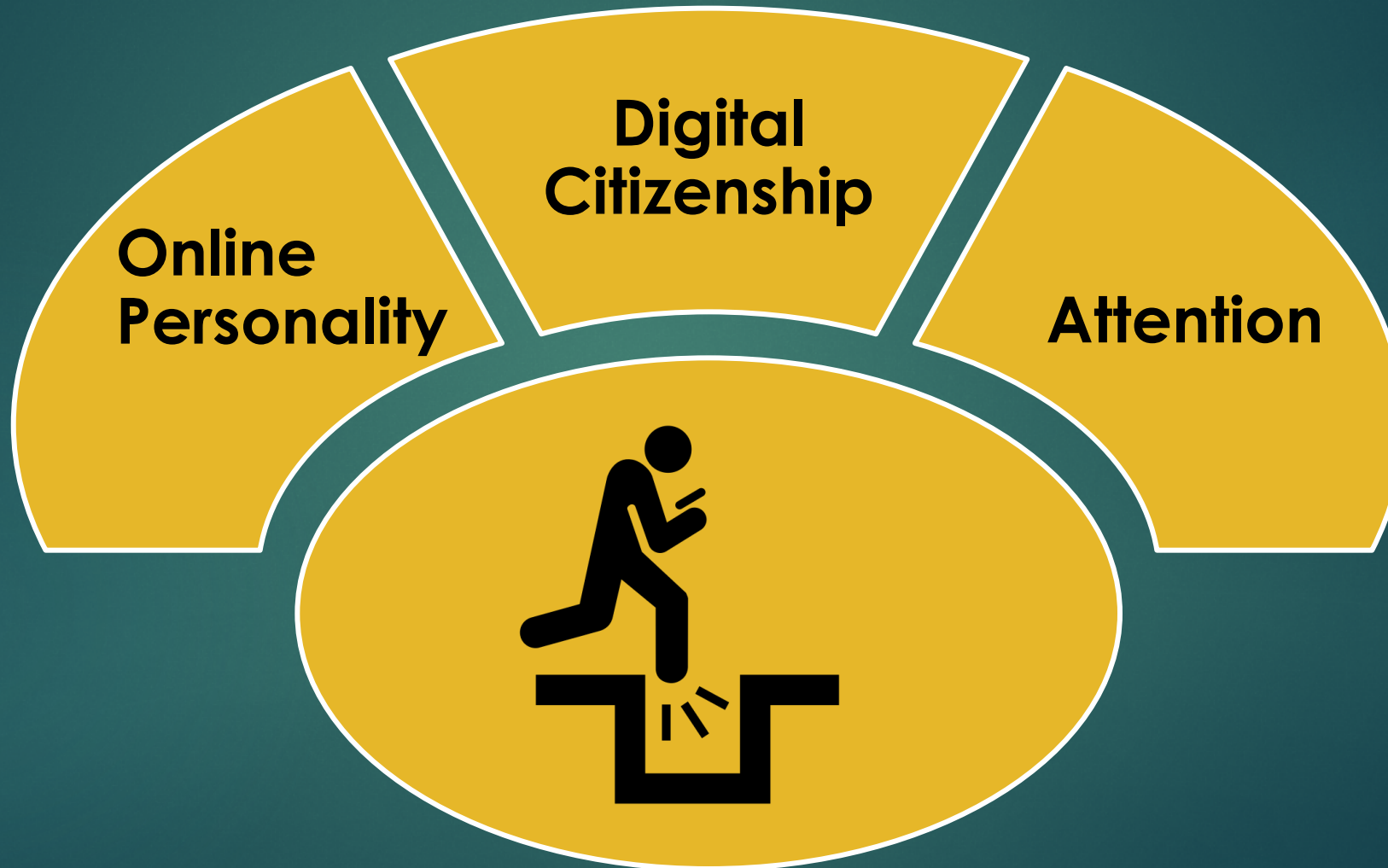


**30 years**

**Digital  
person**



# DIGITAL PERSON





# TIME. DIGITAL PERSPECTIVE

No history



20,000 BC

Forming Society

Prehistory



4,000 BC

Non ICT Society

History



1970-th

ICT related  
Society

Post-history



2010-th

ICT dependent  
Society



# SOCIETY

## Pre-Westphalian



**Before 1648**

Religion, power based  
centered society

## Westphalian



**1648 – 2010-th**

**State agent society**  
*mechanical*  
*metaphors: forces,*  
*causation, importance*  
*of control*

## Post-Westphalian



**After 2010-th**

**Multi-agent society**  
legal structure of  
Digital Society



# From Enlightenment to Entanglement

Enlightenment



XVIII century

Reasoning

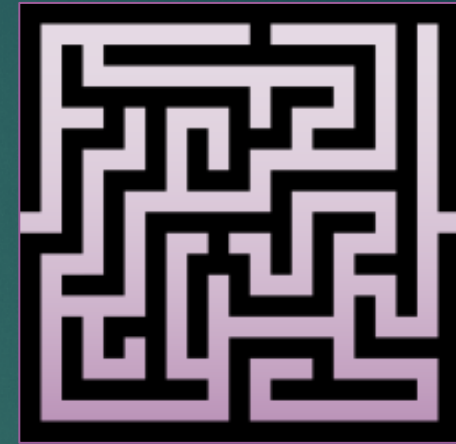
Sustainability



XX century

Responsibility

Entanglement



XXI century

Distributed  
Responsibility

# ENLIGHTENMENT

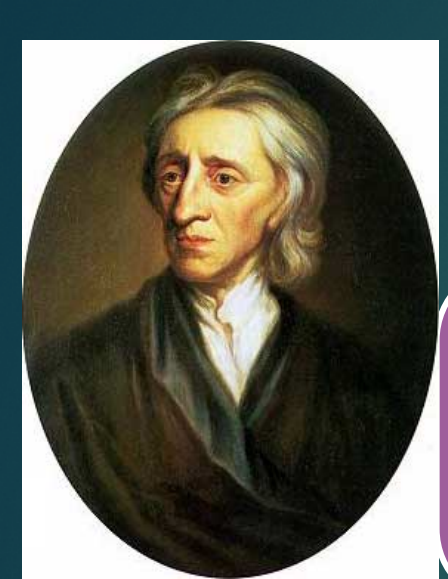
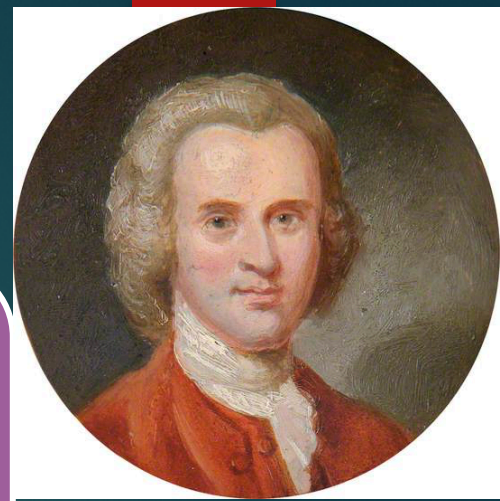
**Enlightenment**  
“The sky is the limit”



**Sustainability**

**Entanglement**

- Human Rights
- Property Rights
- Freedom of Speech
- Freedom of Assembly
- Civil Society
- Free Markets





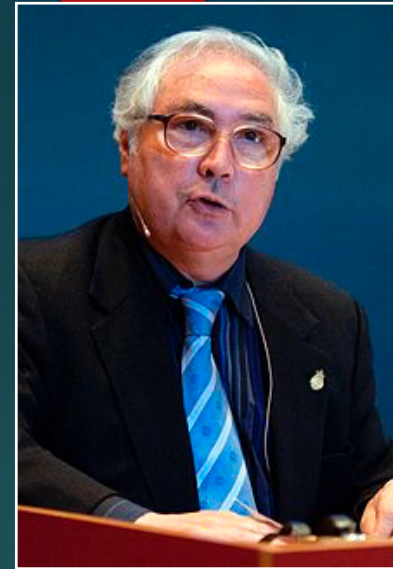
# ENTANGLEMENT

**Enlightenment**

**Sustainability**

**Entanglement**  
**“The self is the limit”**

- From History to Hyper-history
- Rethinking Government Structures
- Human rights, risks, privacy
- Digital Person
- Distributed Responsibility
- Joint attention
- “Grey” Ecology





# “DIGITAL” PANOPTICON

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Interior View of Cell House, new Illinois State Penitentiary at Stateville, near Joliet, Ill.—23





# DIGITAL FEUDALISM

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We don't own:

- Our names
- Our bodies
- Personal property
- Domicile
- Freedom of movement and expression
- Our labor benefits

We are “data serfs”



# CONTRADICTIONS:

12

## **HISTORICAL ENLIGHTENMENT IS ROOTED IN:**

- ▶ Information infrastructure of the printed word
- ▶ Enforceable rights, individualism and the power of reason
- ▶ Privacy, protecting the autonomy of individuals

**DIGITAL TECHNOLOGIES** are in tension with the above concepts



# DIGITAL ENLIGHTENMENT QUESTION

- ▶ How to reclaim the patience, the prudence, and the practical wisdom as the base of Rule of Law, in the era of hyper-connectivity?
- ▶ Was ist Aufklärung in the Digital Age?



A historical painting depicting a large, crowded assembly hall, likely a parliament or a public meeting. The room is filled with people seated in rows, facing a central area where a speaker or a group of people are standing. The architecture features high ceilings, large windows, and ornate details. The text "DIGITAL ENLIGHTENMENT?" is overlaid in large, white, sans-serif capital letters across the center of the image.

# DIGITAL ENLIGHTENMENT?



# Digital Enlightenment?





# Digital Habitat?





# Person: Historical vs. Hyper-historical





# Digital Selfie





# Reality and Virtuality: No distinction







# Transformations of Human Consciousness in Digital Age



# Transformations of Human Consciousness

<b>Worldview</b>	<b>Transformations in Consciousness</b>
<b>our self-conception (who we are)</b>	<b>Blurring of the distinction between reality and virtuality</b>
<b>our mutual interactions (how we socialize)</b>	<b>Blurring of the distinction between human, machine and nature</b>
<b>our conception of reality (our metaphysics)</b>	<b>Reversal from information scarcity to information abundance</b>
<b>our interactions with reality (our agency)</b>	<b>Reversal from the “black box” to the “transparent box”</b>

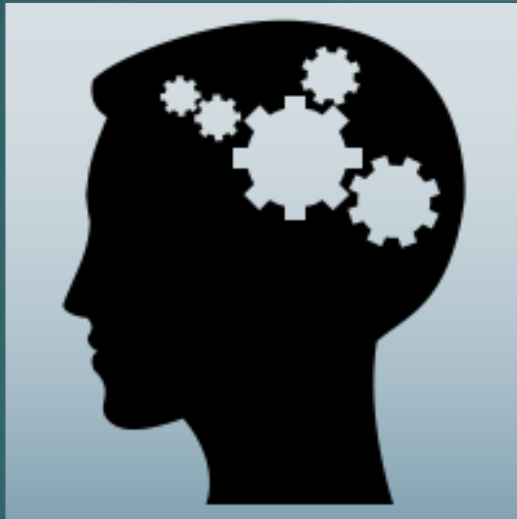


# Transformations of Consciousness

## Symptoms



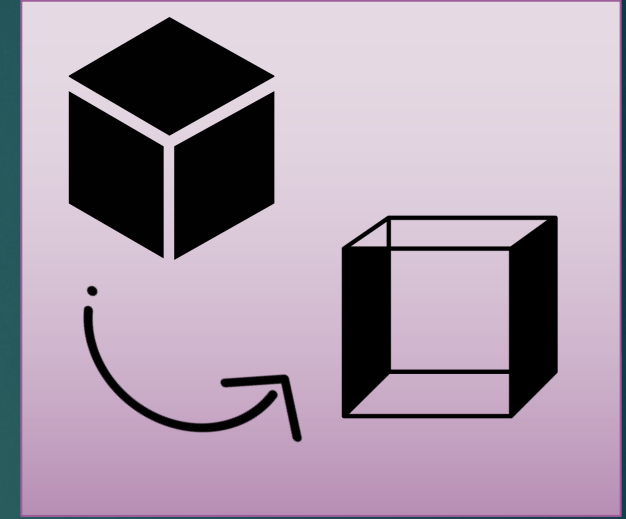
Reality/Virtuality



Human/Artefact/Nature



Scarcity/Abundance

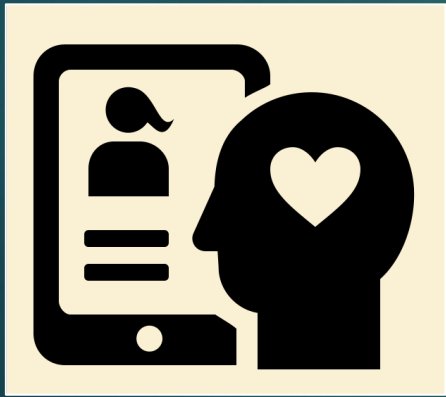


Black/Transparent



# Symptoms and Phenomena

Reality/Virtuality



Digital Personality

Human/Artefact/Nature



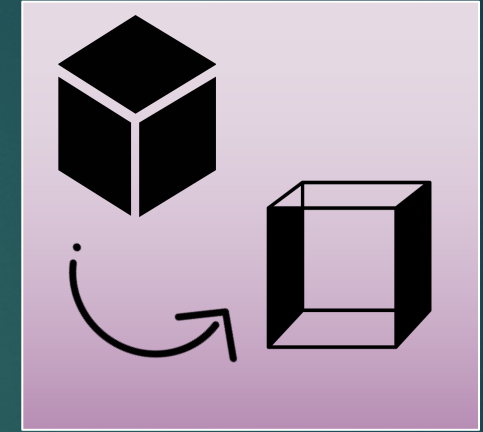
Enchanted objects

Scarcity/Abundance



Data Abundance

Black/Transparent



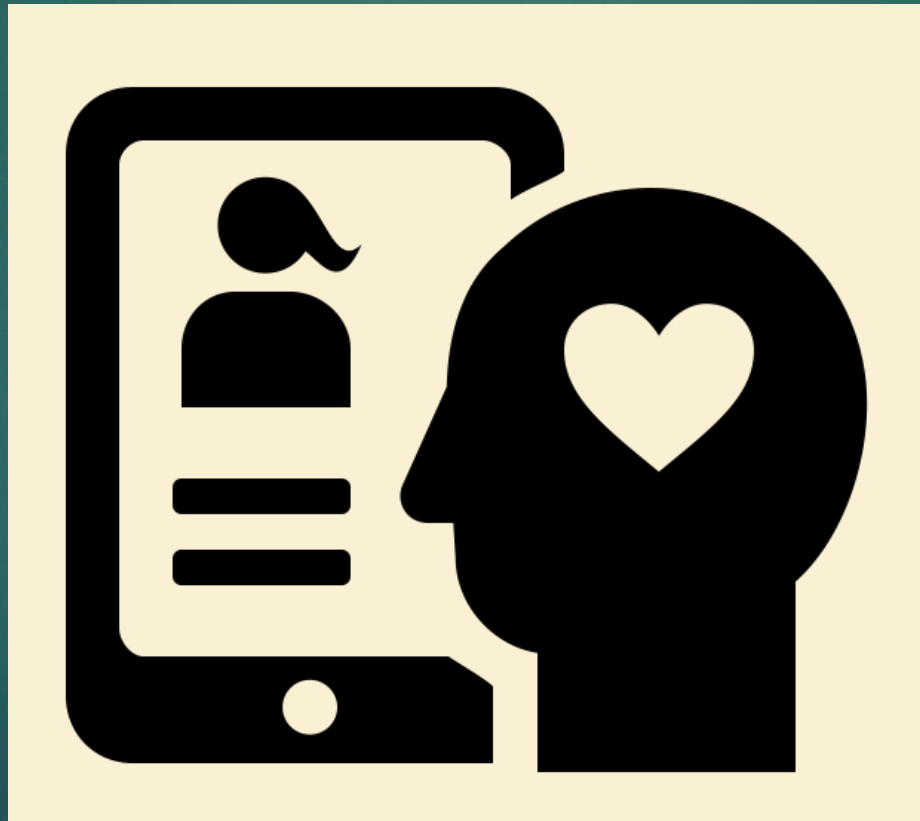
Creative Openness





Blurring of the distinction between  
reality and virtuality

## Digital Personality







# Blurring of the distinction between reality and virtuality

- ▶ **REALITY VS. VIRTUALITY**
- ▶ **ANALOG VS. DIGITAL**
- ▶ **SCIENCE VS. ART**
- ▶ **TRUTH VS. MEANING**





# Blurring of the distinction between reality and virtuality

## SCIENCE

ANALOG	DIGITAL
REALITY	HYPER-REALITY
<b>TRUES</b>	MEANING

## ART

ANALOG	DIGITAL
REALITY	HYPER-REALITY
<b>MEANING</b>	TRUES



Blurring of the distinction between  
human, machine and nature

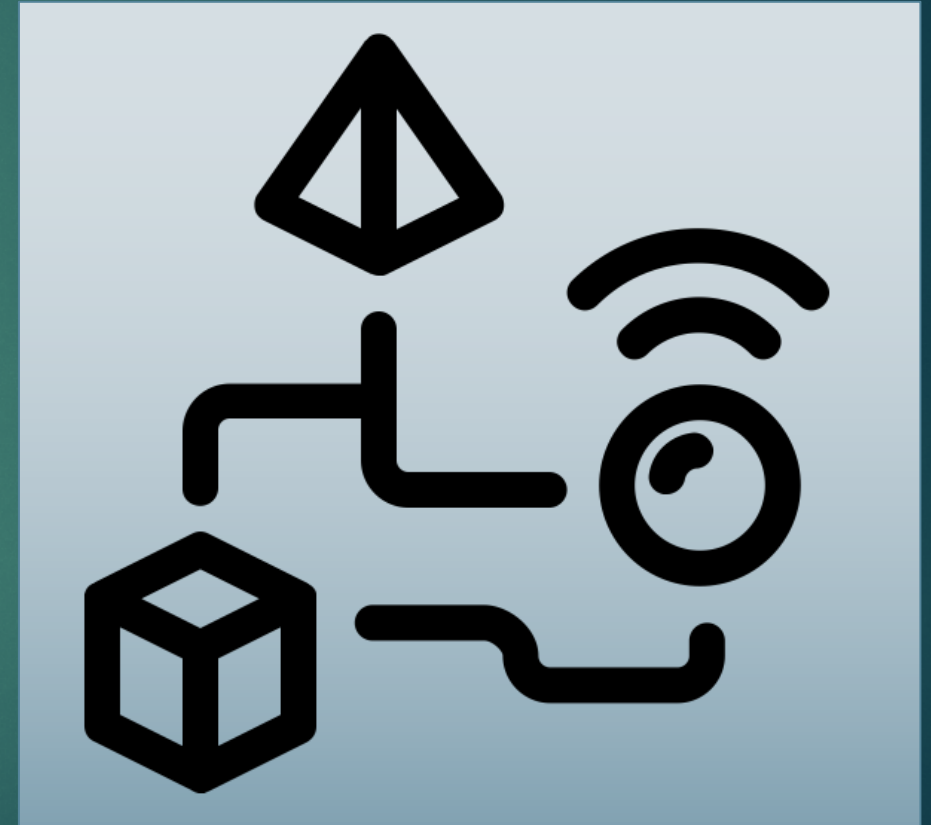
## Enchanted objects







Blurring of the distinction between human, machine and nature

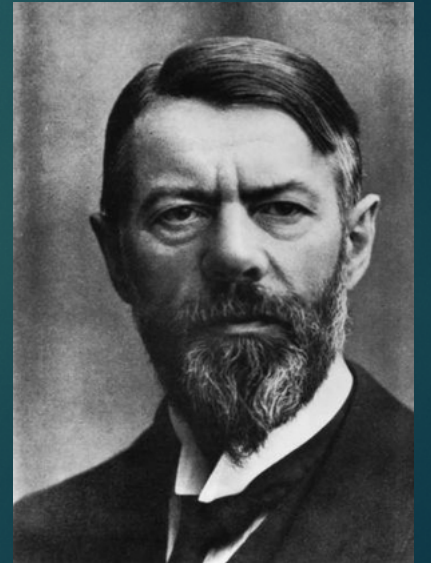




Blurring of the distinction between human, machine and nature

**THE FATE OF OUR TIMES IS CHARACTERISED BY RATIONALISATION AND INTELLECTUALISATION, AND, ABOVE ALL, BY THE "DISENCHANTMENT OF THE WORLD"**

Max Weber  
(1864- 1920)







## Blurring of the distinction between human, machine and nature

- People started **enchaining** the world
- The enchanted world is more sophisticated than the nature
- **Science** – disenchantment vs **Art and Technology** – enchantment



Reversal from information scarcity to  
information abundance

## Data Intensive Science



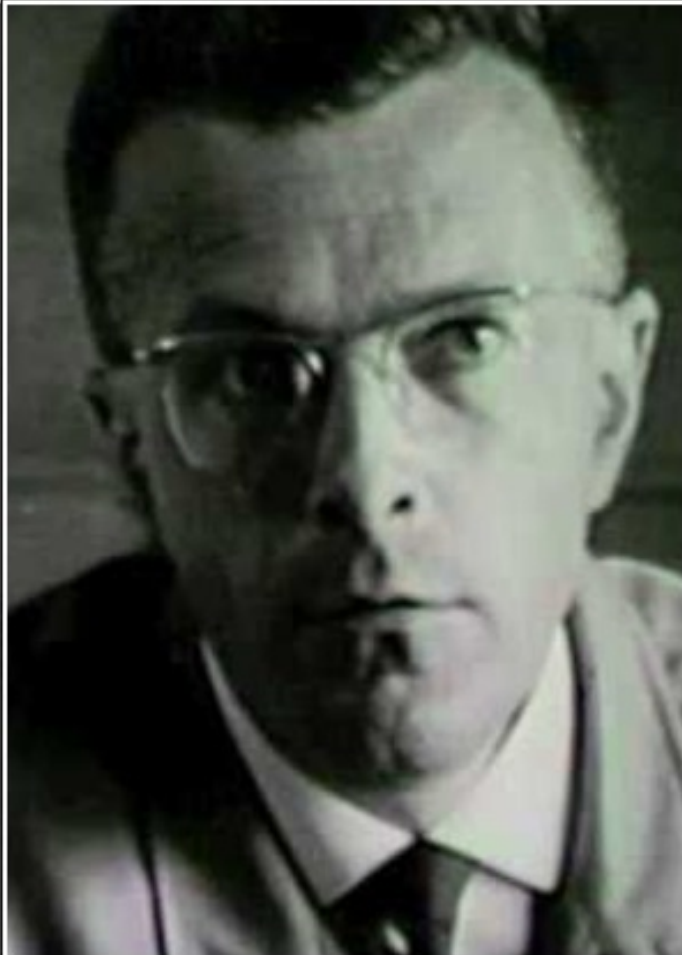


# SCIENCE RESEARCH PARADIGMS



- EXPERIMENTAL
- THEORETICAL
- COMPUTER SIMULATION
- DATA INTENSIVE SCIENCE

# GILBERT SIMONDON (1924-1989)



Recognition of the modes of existence of technical objects must be the result of philosophic consideration; what philosophy has to achieve in this respect is analogous to what the abolition of slavery achieved in affirming the worth of the individual human being.

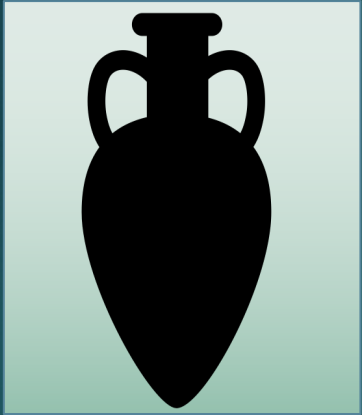
— *Gilbert Simondon* —

AZ QUOTES



# GILBERT SIMONDON

## THEOLOGY VS. TECHNOLOGY



**Existance**

**Ancient Greece**



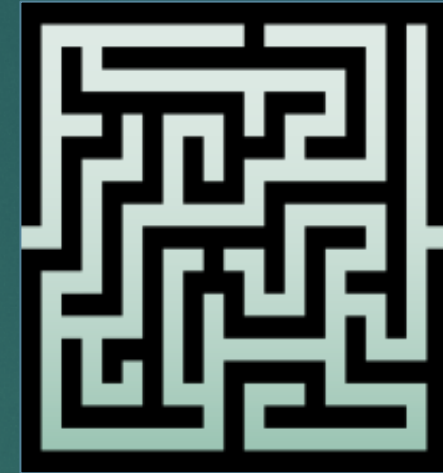
**Scoffolding**

**Middle Age**



**Separation**

**Enlightenment**

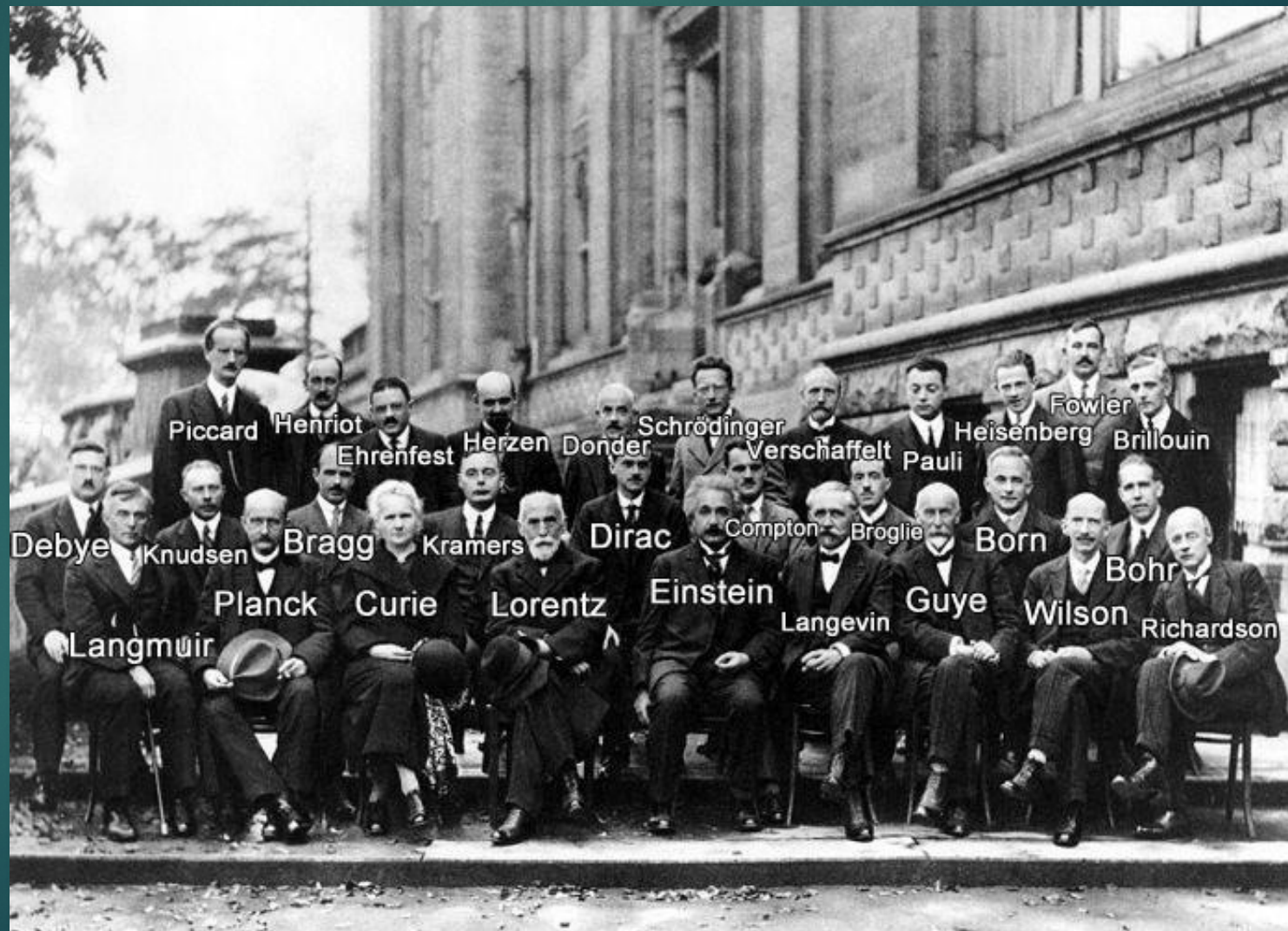


**Entanglement**

**Digital Age**



# Science in XX Century







# Dilemma of XXI Century?



disenchantment

enchantment

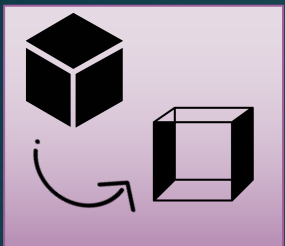
?



SCIENCE - THEOLOGY



CREATION - TECHNOLOGY



Reversal from the “black box” to the  
“transparent box”

## Creative Openness







# TECHNOLOGY

By 2025:

1	10% of the world population will have Internet connected wearing apparel
2	90% of the world population will have a free internet connection
3	1 billion internet connected sensors
4	The first robot-pharmacist (USA)
5	10% glasses will be connected to the Internet
6	The web presence of 80% of the world population
7	The first 3-D printed vehicle
8	The first implanted smartphone
9	10% of USA vehicle will be driverless
10	The first 3-D printed liver transplantation



# G. Simondon. On the Mode of Existence of Technical Objects

- ▶ Enlightenment failure in technology
- ▶ Technological infrastructure vs. Economical vs. Political
- ▶ Technical objects evolution
- ▶ Evolution of Interface
- ▶ Universality of creation activities

# SIMONDON AND DIGITAL CULTURE

- ▶ Transparent box Paradigm
- ▶ User–Designer Equality
- ▶ Media Enhanced Creativity



# PERCEPTIONS OF TECHNOLOGY

**Instrumental**

**Autonomous**

**Reflexive**

**Apprehensive**

# SAMR

Substitution

Augmentation

Modification

Redefinition



## **R**edefinition

Tech allows for the creation of new tasks, previously inconceivable

## **M**odification

Tech allows for significant task redesign

## **A**ugmentation

Tech acts as a direct tool substitute, with functional improvement

## **S**ubstitution

Tech acts as a direct tool substitute, with no functional change

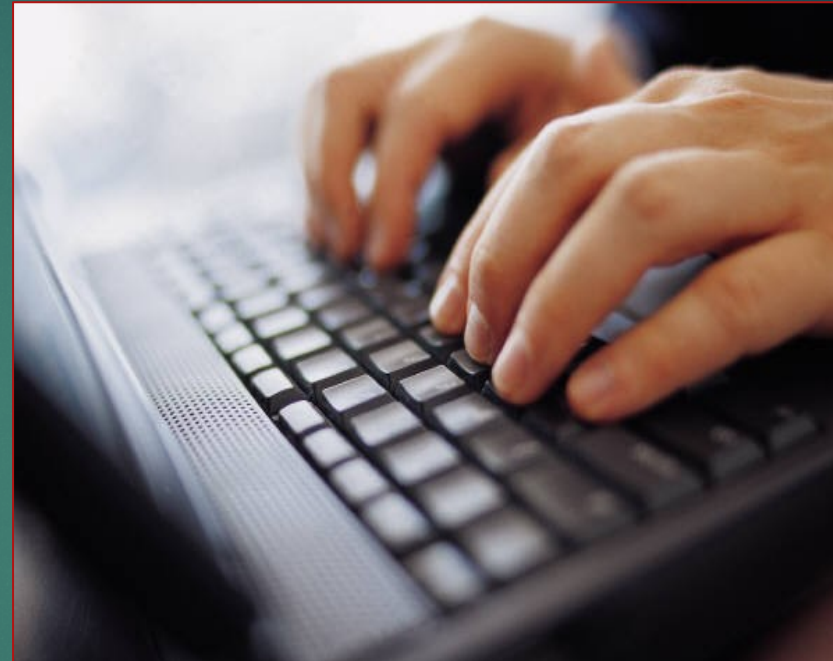
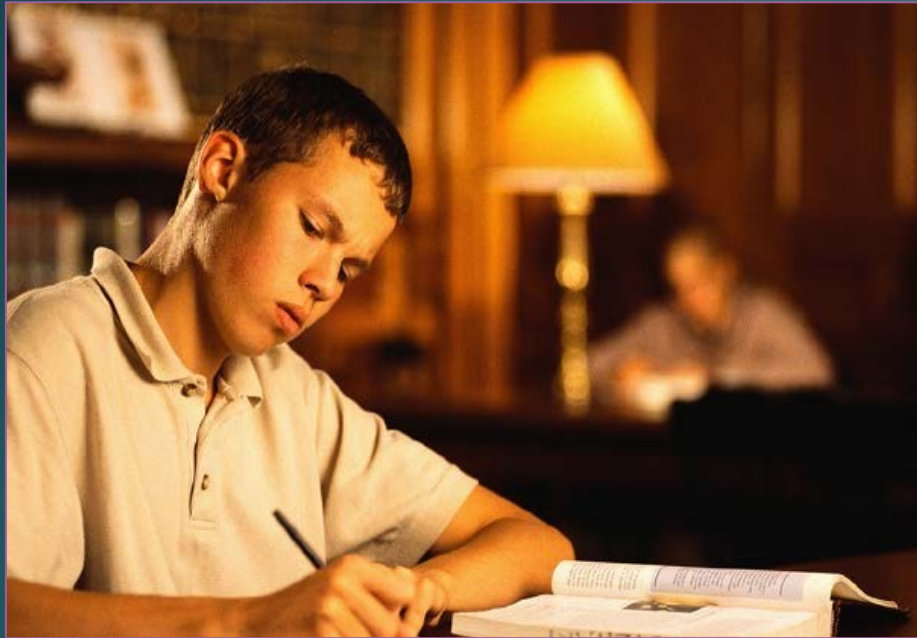
# פרדס

- **תּוֹד** — esoteric/mystical meaning, as given through inspiration or revelation
- **דְּרִישׁ** — comparative meaning, as given through similar occurrences
- **רִמָּז** — meaning beyond just the literal sense
- **פְּשָׁט** — straightforward direct meaning





**Substitution:** A substitute with no functional change  
*Coffee is still coffee*



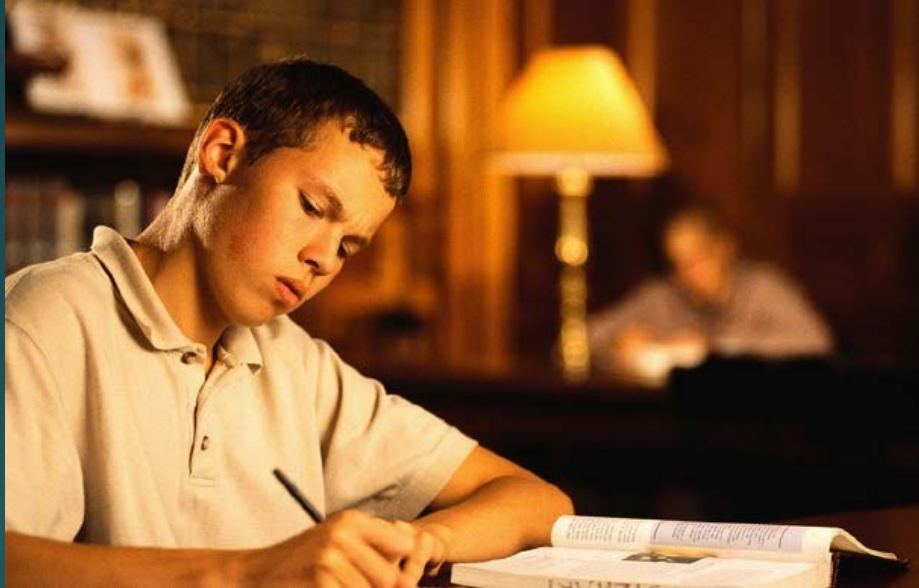
**Substitution:** A substitute with no functional change  
*Writing a report vs. typing a report*





**Augmentation:** A substitute with functional change  
*Coffee is still coffee, but now with ice and  
maybe some milk*





Including use of spell check, grammar check, and electronic dictionary or thesaurus

**Augmentation:** A substitute with functional change  
*The addition of the electronic tools adds a functional change.*

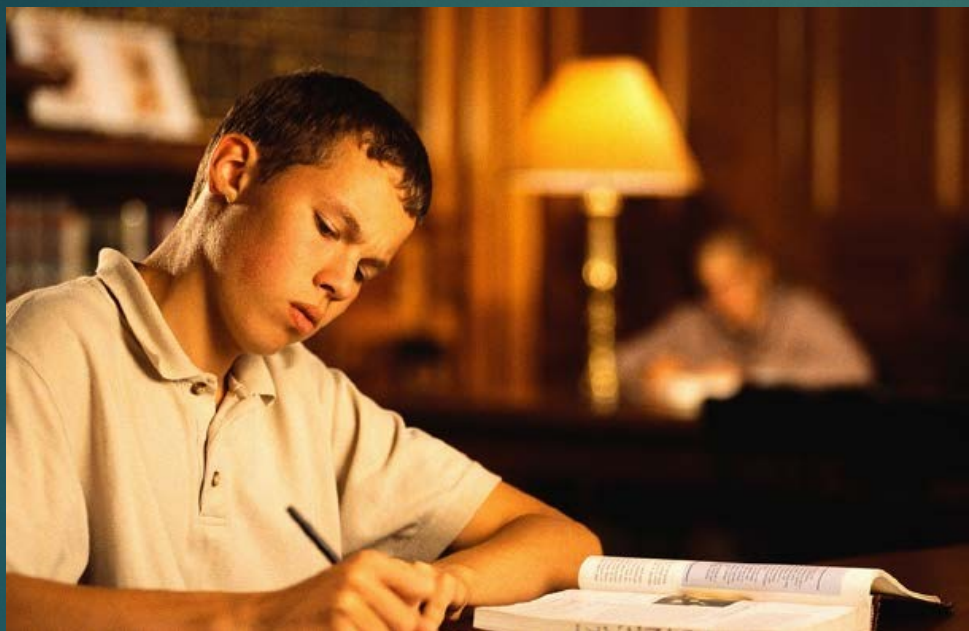





### **Modification:** Redesign

*Caramel Macchiato – Could be made at home, but would be much more difficult. The coffee has been truly modified*





Title of Book	
Author: Name	
Type of book: Enter type of book here	
<b>Introduction</b> Give an overview of the book, indicating what the focus of your book report will be. You can replace the picture on the right with a picture of the cover of the book.	
<b>Author</b> Outline the author's life, focusing on the timeframe that includes the writing of this book.	
<b>Main characters</b>	
Character One	Describe this character.
Character Two	Describe this character.
Character Three	Describe this character.
Character Four	Describe this character.
<b>Story</b> Break the book down into a logical number of sections. This example shows: "Beginning," "Middle," and "End," but books often have many more relevant sections.	



Page 1

Student newsletter with digital images for collection of book recommendations from students to students.

## Modification: Redesign

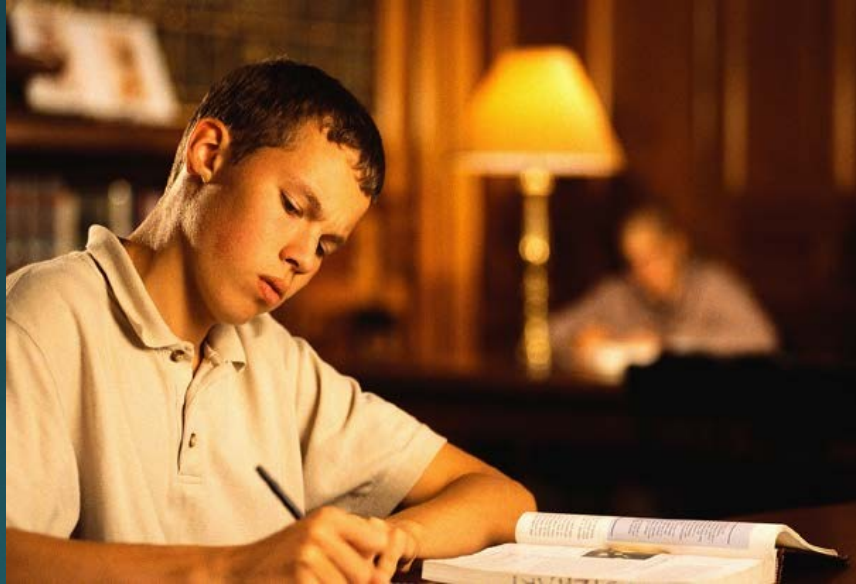
*This is now a redesigned assignment in terms of format and use.*





**Redefinition:** New and previously impossible  
*Pumpkin Latte – You can only get it at Starbucks.  
They have a trademark. It truly can't be made at  
home.*





**Redefinition:** New and previously impossible

*Creation of products that would be inconceivable without technology such as movies, podcasts, narrated multi-media presentations, animation, or infographics*



# CONCLUSIONS

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- ▶ We live in the Digital Society, which significantly differs from the Modern Society
- ▶ Digital Person is different from Legal and Physical Persons
- ▶ We live in the age of Digital Feudalism but in the Eve of Digital Enlightenment
- ▶ Digital culture is based on: digital personality and universal creative openness
- ▶ Redefinition of Technological artifacts is necessary