

# THE SPATIALIZATION OF KNOWLEDGE

The Institute for Conscious Global Change (ICGC)

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**I: INTRODUCTION**

**II: MEDIUM IS THE MESSAGE**

**III: ORGANIZING KNOWLEDGE**

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# I: INTRODUCTION



# THE INSTITUTE FOR CONSCIOUS GLOBAL CHANGE

## MISSION

Visualize, analyze, explain,  
and disseminate data to  
make sustainable  
development plans  
universally accessible.

## GOAL

Provide an inclusive,  
engaging platform to help  
the United Nations achieve  
its development goals.

## VISION

Fundamentally change the  
way humanity lives in and  
creates its environment.



**INSTITUTE FOR  
CONSCIOUS  
GLOBAL CHANGE**



# MILLENNIUM EARTH PROJECT

- Multi-sectoral involvement
- Capacity building
- Participatory geospatial data collection
- Geodesign
- Open source/standards
- Youth involvement



# II: MEDIUM IS THE MESSAGE

*from books to mobile devices*



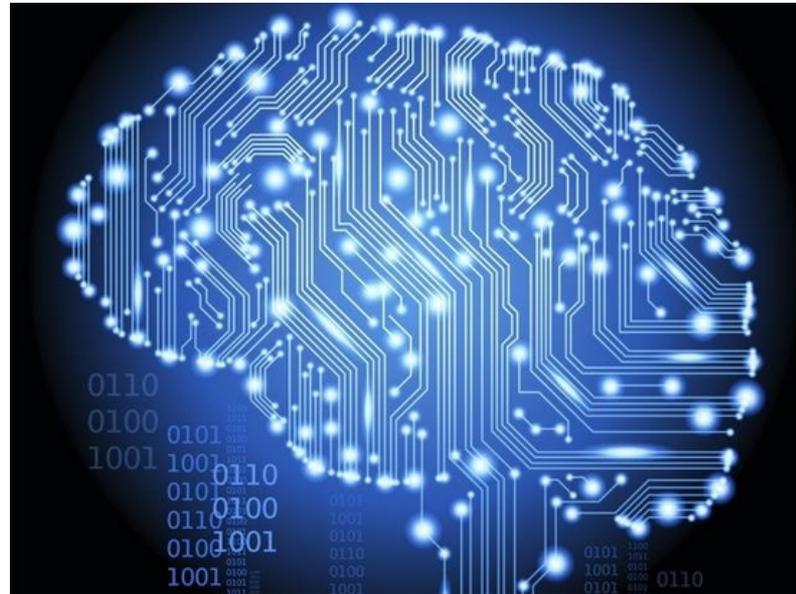
# PRINTING PRESS AND BOOKS

- Availability of mass produced books led to “mechanistic” world views
- Credited with revolutions that followed:
  - 16<sup>th</sup> century Protestant Revolution
  - 17<sup>th</sup> century Scientific Revolution
  - 18<sup>th</sup> century Democratic Revolution
  - 19<sup>th</sup> century Industrial Revolution
- Leo Tolstoy: the body is “*a living machine*”
- Le Corbusier: the house is “*a machine for living in*”
- Society is “*well oiled machine*”
- Steven Hawking: “*the brain is a computer*”



# THE INTERNET AND MOBILE DEVICES

- The internet, along with miniaturization of computing in mobile devices has given us a “networked” view of the world
  - The brain is now commonly viewed as a *neural network*
  - Society is now commonly viewed as a *social network*
  - The human body is now commonly viewed as part of the *web of life*



# SEEING THE WORLD DIFFERENTLY

- When we start to think of ourselves and see the world differently, big things begin to happen.
- Human relationships and social structures change, as we have already seen:
  - Crowdsourcing capabilities
  - The micro-lending revolution
  - The green revolution



# III: ORGANIZING KNOWLEDGE

non-spatial vs. spatial



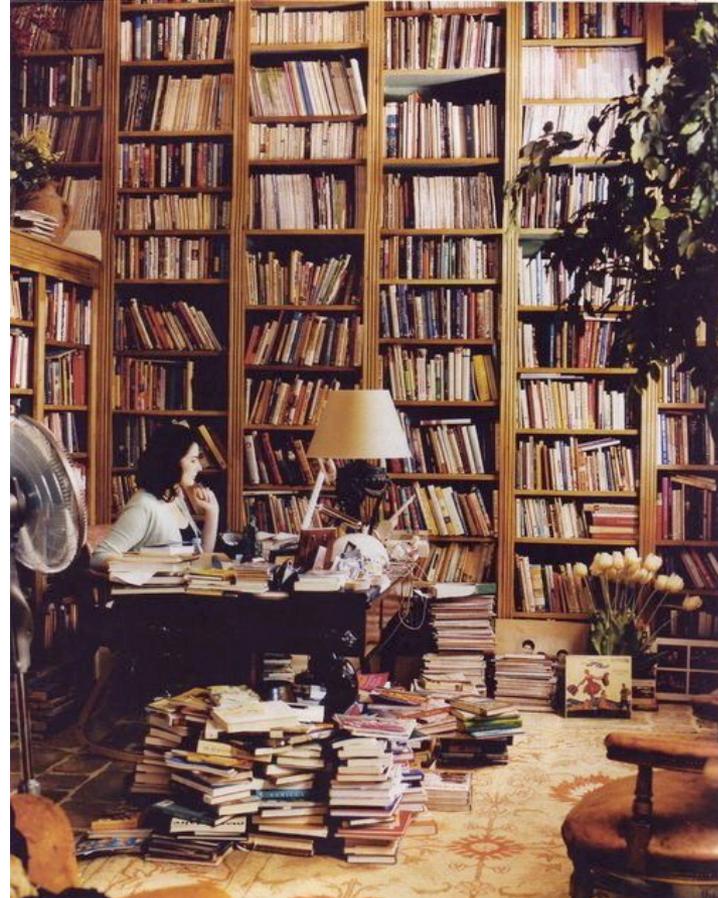
# BOOKS AND THE PHYSICAL LIBRARY

- Printed books offer a linear way of finding information:
  - We begin at some point and work our way forward or backward
  - Led us to see information in discrete ways
  - Encourages us to see knowledge as a set of distinct disciplines, each with its own discourse
    - Increasingly difficult for anyone not in that discipline to understand
- Books sort information according to disciplines
  - Divorce knowledge from any particular physical or conceptual space
  - Led to a paradox of knowledge: *we have so much information about the world and yet remain to ill informed about our effect on the world*



# EXAMPLE: THE TOPIC OF WATER

- In books, topics are addressed in myriad of ways by many disciplines: sciences, social sciences, literature, history, art, and poetry
  - All books would be located in different places in a library and all addressed in different ways through different disciplinary lenses
- What if you want a holistic account of water?



# NON-SPATIAL ORGANIZATION SUMMARY

- Served us well in the last several centuries as we have sought to understand and control the world around us
- In recent decades this organization structure has gotten in our way as we have come to realize the damage we have done to the world and the threat that that poses to our civilization and to us
- Adam Smith's paradox of value:
  - Why do we value diamonds that have so little real use, and why don't we value water, without which we cannot live?
- By dividing knowledge into discrete, disciplinary units, we have created a paradox of knowledge:
  - We have so much information about the world and yet remain so ill informed about our effect on the world



# DIGITAL MEDIA AND THE SPATIAL LIBRARY

- Geographic Information Systems (GIS) will become a major way—perhaps the dominate way—in which we will access information
  - We need to arrange knowledge, not according to disciplinary categories, but instead according to spatial phenomena
  - Allows us the potential to organize knowledge in ways that align more closely with the ways in which the world itself is organized: spatially
- Software is essentially spatial in nature
  - Rather than see information in discrete bits, GIS layers information spatially
  - Links data according to its relevance to other data on a given layer
  - Links data according to its relevance to all other layers in a given place
- Allows us to “map” information



# GIS AS MEDIUM FOR ACCESSING INFORMATION

- GIS layers data so you can access it where it exists in the real world:
  - Buildings
  - Roads and transportation
  - Vegetation
  - Air quality
  - Water quality
  - Land use
  - Economic
  - Terrain
  - Soil composition
  - Demographic
  - Climate
  - Ecological
  - Agriculture
  - Energy

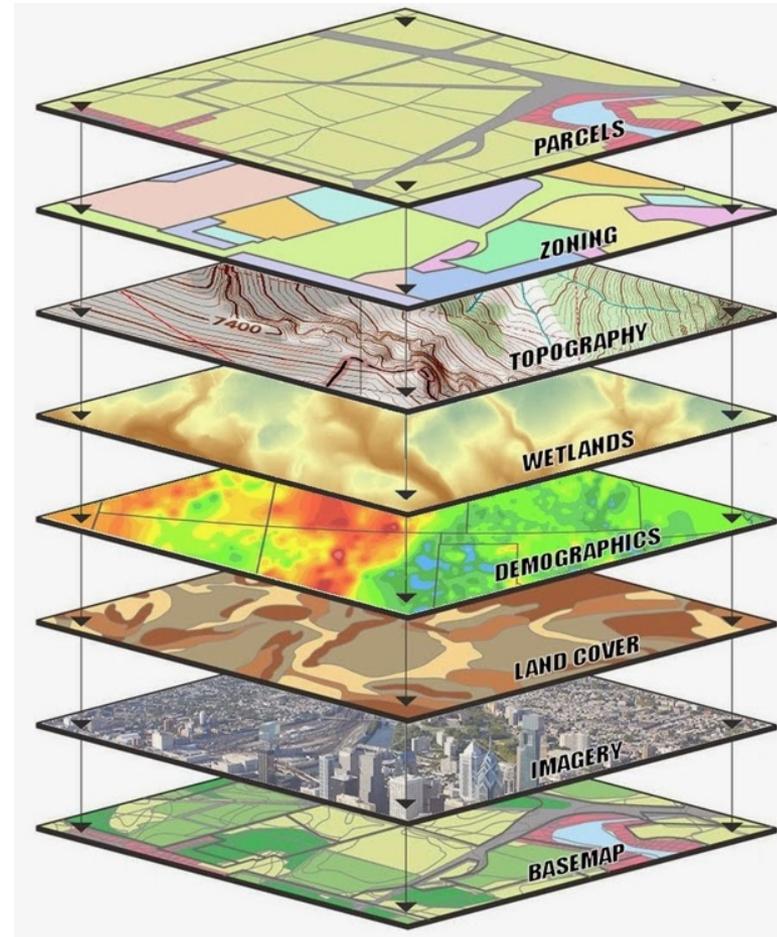


Example of 3D GIS



# ADVANTAGES OF MAPPING INFORMATION

- Can see how disciplines come together in particular places
  - See how they hit the ground and how they play out as part of the web that constitutes the whole of a place and the people there
- A visual way to convey information across barriers of language and education
  - The book divides the literate and illiterate and has helped reinforce the power of the former over the latter



# SUMMARY



*With the spatialization of knowledge, we can begin to set the foundation for a more sustainable future for ourselves as we see the impact of our actions and the relevance of our knowledge to the particular places in which we live.*

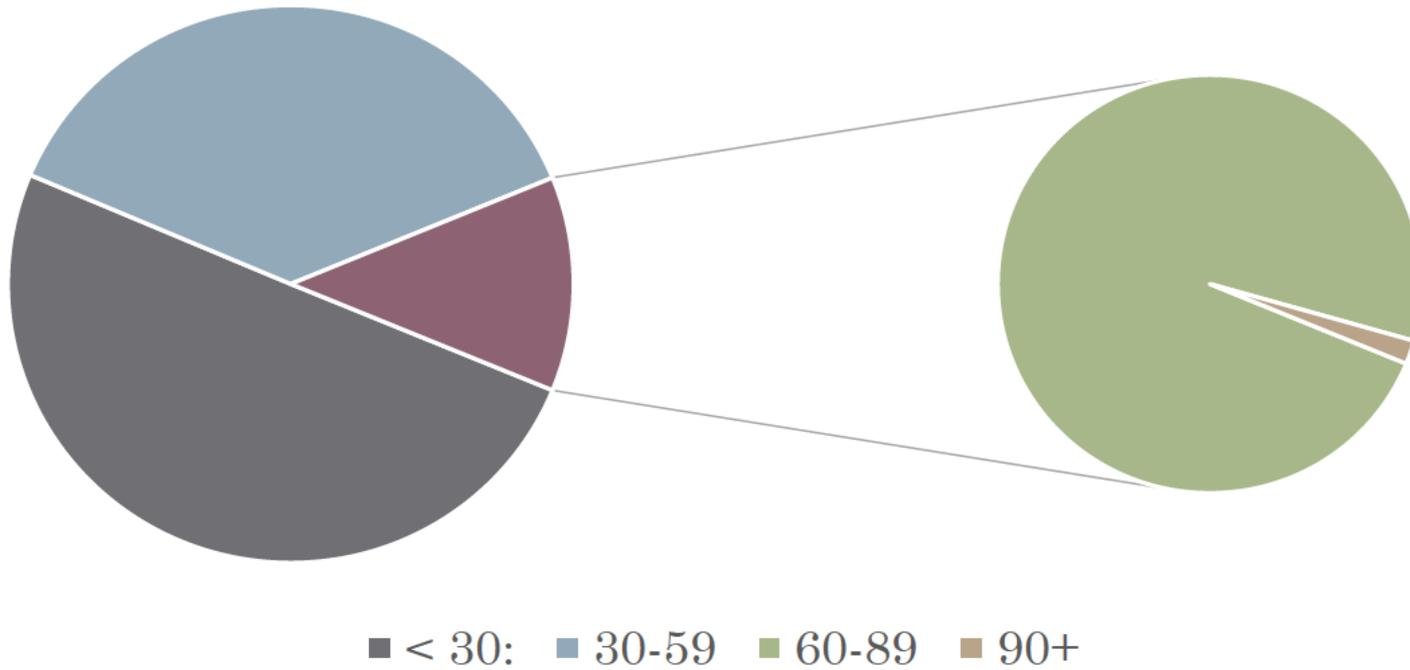


# IV: MEDIUMS FOR DATA REVOLUTION

*ensuring participation from the ground up*



## GLOBAL POPULATION BY AGE



< 30	3,638,334,653	50.1%
30-59	2,711,014,232	37.5%
60-89	887,253,382	12.2%
90+	16,657,845	.2%



# MOBILE AND WEB APPS



*“The world is data”*



# GEOSPATIAL GAMES

- Minecraft
  - 100+ million users
- SimCity
- Virtual reality
- Geocaching



I ♥  
GEO  
CACHING





# END

*just as the book gave rise to several revolutions, mediums such as GIS, mobile apps, and geospatial games will lead the data revolution*

