

**EUGEO 2007**

**In Need of a New Paradigm  
to Support European Geography**

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# Epistemology

**APPROACH:** Environment is an  
Externally Given Creation



The Ecosystem Exists as an  
Independent Natural and  
Cultural Process

**PERCEPTION:** The Uniqueness of  
Geographic Location



Interdependence of  
Phenomena in  
Geographic Space

**ASSUMPTION:** The Phenomena Exist in  
Order to Be Discovered



The Phenomena Constitute  
Social Constructs, One Own  
Creations.



**NEED FOR A SOCIAL EPISTEMOLOGY OF ALL SCIENCES**



**NEED FOR EPISTEMOLOGY OF GEOGRAPHY  
THE SCIENCE OF SPACE**

# Fables in Practicing our Science

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The way we practice our science is limited almost exclusively by our "fables". These fables work as lights that lit up our field of perception, allowing us to have a clear picture of certain only problems and not seeing the others, while simultaneously they give us the intellectual calm we need, since the judgments we make are revealed in our mind as reflection of the objective reality.

# Sciences

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- They should satisfy certain functional conditions in order to remain constant.
- They should require systematic ways in order to satisfy basic methodological needs.



**THEY ARE THE RESULT OF VALUES**



**CONSTITUTE THE BASE FOR ACTING**

# Choroinformatics

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The centre of the scientific approach of geographic space, that constitutes inevitably and the source of our myths and values should be the concept of the integrated spatial approach not only in terms of the way geographic space is regarded, but also with regards to the spatial investigation methodologies.



This leads to the position that the traditional concepts are absolute and now we find ourselves in the period of **CHOROINFORMATICS**.

# The Role of an Integrated Approach

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Geographers have the scientific background to:

- Examine the surface of the earth
- Analyze spatial patterns and processes
- Present the results of these analyses for a scientifically sound and efficient planning.



An integrated approach of geographic space is required, which, however, is not possible without the help of **Choroinformatics**.

# Choroinformatics

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The term Choroinformatics is composed of two components:

## Choros + Informatics

The component “**choros**” (space) is referred to the integrated dimension of geographic space, which is equally important with information technology and consequently the necessity of an **integrated** approach in considering geographic space is imperative.

# Choroinformatics

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The integrated approach to geographic space is tenable only through the examination of the nature and the evolution of Geography, which in turn determine:

- How we perceive geographic space and teach it.
- How we investigate it.

# Choroinformatics

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The recent changes of these two dimensions, representing a paradigm shift have led to the integrated approach of

## **Choroinformatics.**

**Consideration of Space:**

*From Disciplinary  
to Interdisciplinary*

**Investigating Space:**

*From Geoinformatics  
to Metageoinformatics*

# Consideration of Space

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DISCIPLINARY  
APPROACH



ECONOMIC DEVELOPMENT



Location is ignored

MULTIDISCIPLINARY  
APPROACH



SUSTAINABLE DEVELOPMENT



Location important factor

INTERDISCIPLINARY  
APPROACH



HOLISTIC DEVELOPMENT



Integrated Approach

# Integrated Approach

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It should be obvious that a continuous differentiation of how geographic space is regarded has taken place ranging from **disregard** of space to considering it as a **fundamental component** of development in the form of a set of relations, interdependences and interactions within the ecological and socio-economic reality, leading to the present notion that all these constitute a **dialectic unit**, an organic “whole”.

# Higher Education - Homogenization

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- Europeanization in the form of sustainable education is envisioned as a strict system leading to homogenization of teaching and learning practices or curriculum structures across Europe.
- But given the need for an integrated approach one can wonder about the appropriateness of the mode and the content of the Bologna effort.

# The Case Against Homogenization

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- “At the interface between the highly abstract geographic lore of the professional and the common sense or mythological geographic lore of the “student” lay a fault line: a chasm of language and concept which was difficult to transcend”.

A. Battiner



**How can one be sure that scientific thought does transcend Culture and Educational Space?**

# The Case Against Homogenization

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- Geography Reflects the Civilization

J.K. Wright

- Each Culture has its own “Geographic Science”

Yi-Fu Tuan

- Geography is Tinged by Imperialistic Bias

- Imperialistic Bias in European Geography

Blaut

- Imperialistic Expansion in China

Samuels

- Geographers and “Geographies” Reflect Political Orientation

# The Question

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How do the language, the culture and the conceptual structures of academic sciences in Europe relate to the varieties of “**geographical sense**” found among the diverse cultural groups of the various nations who inhabit the European Continent?

# Geographical Sense vs Bologna Process

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Given that almost every nation, region and even city has its own “geographical sense” arising from different needs and expectations, how does this stand against the very core of the Bologna process and in general the need for an integrated approach to Geography?

# My Response

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Differences in culture, in behavior, in values and standards do not have to conflict. To the contrary, they can be a unifying force.

Within an integrated framework, Europeanization can be seen as a process towards **unity without uniformity**.



- That is European
- Expresses Choroinformatics

# Geographic Methodology

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In an integrated approach, geographic space, in order to be described, analyzed and comprehended, requires a dialectic, interdisciplinary methodological approach. In other words, it requires a corresponding integrated approach.

# The New Paradigm

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Nowadays the field of Geography is undergoing a revolution, a change that is fundamentally driven by the increased **efficiency of microprocessors.**

Geographers will be in the **information business** (or no business at all) and today's tedious tasks in the field, the lab or the office will become routine, even perfunctory.

# Questioning the Geoinformatics Model

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The need for comparable scientific-academic procedures in European countries raises the necessity for a paradigm (model) to be more reflective to **culture and ideology** which can be expressed by the unifying dynamism of **Choroinformatics (CI)**.



In simple terms, understanding the role of CI requires a new model

# The Choroinformatics Transition

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The key to that understanding is the appreciation of the rapid transitions of our field in Europe from old models to a new one where Choroinformatics plays the central or the determining role. That is, it is suggested that Geography's methodology has recently undergone a paradigm shift

# The Old Model: Traditional

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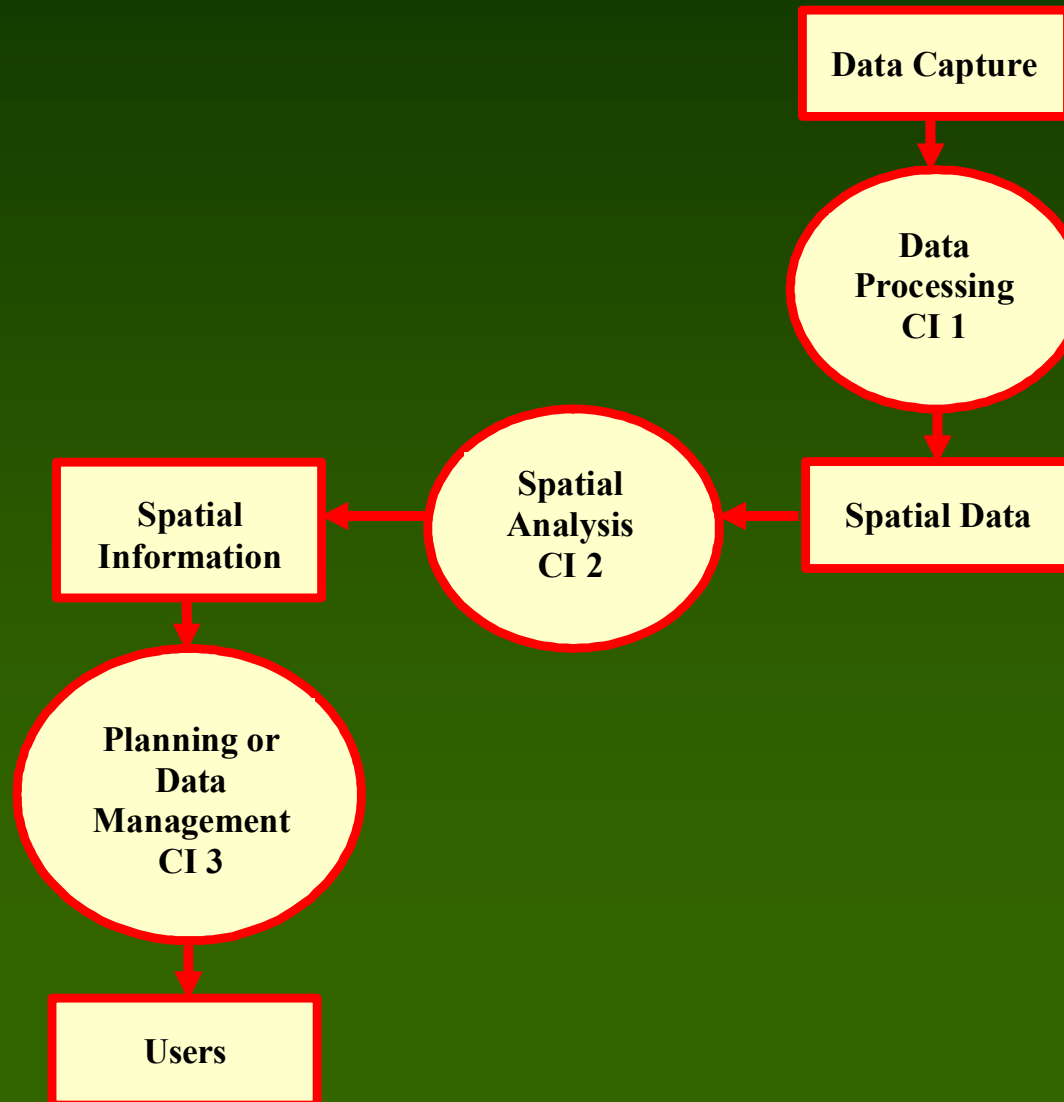


# The Old Model: Traditional

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The old model starts with the observations (data capture) and ends (most of the time) with a map as the final product. The data are collected in the field or by other traditional methods (i.e. photogrammetry, remote sensing), practices widely accepted in the European Educational system, and are processed (adjusted) and analyzed for the purpose of displaying the information created through the use of some cartographic means.

# The Newer Model: Geoinformatics



# The Newer Model: Geoinformatics

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- **DATA PROCESSING AND MANIPULATION**

It has changed the ways data is captured and processed. The outcome of this stage is digital layers of diverse land-related or human activities data.

- **SPATIAL ANALYSIS**

The process from spatial data to spatial information is possible, almost exclusively through the use of CI.

- **INFORMATION MANAGEMENT AND PLANNING**

The task of effective management of spatial information requires acceptable tools for decision making.

# The New Model: Choroinformatics

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The literature has been permeated by the notion that there is no universal optimum but a local one. In other words, the application determines the tool.



**Such an idea certainly violates scientific deontology and leads us toward dangerous conceptual paths.**

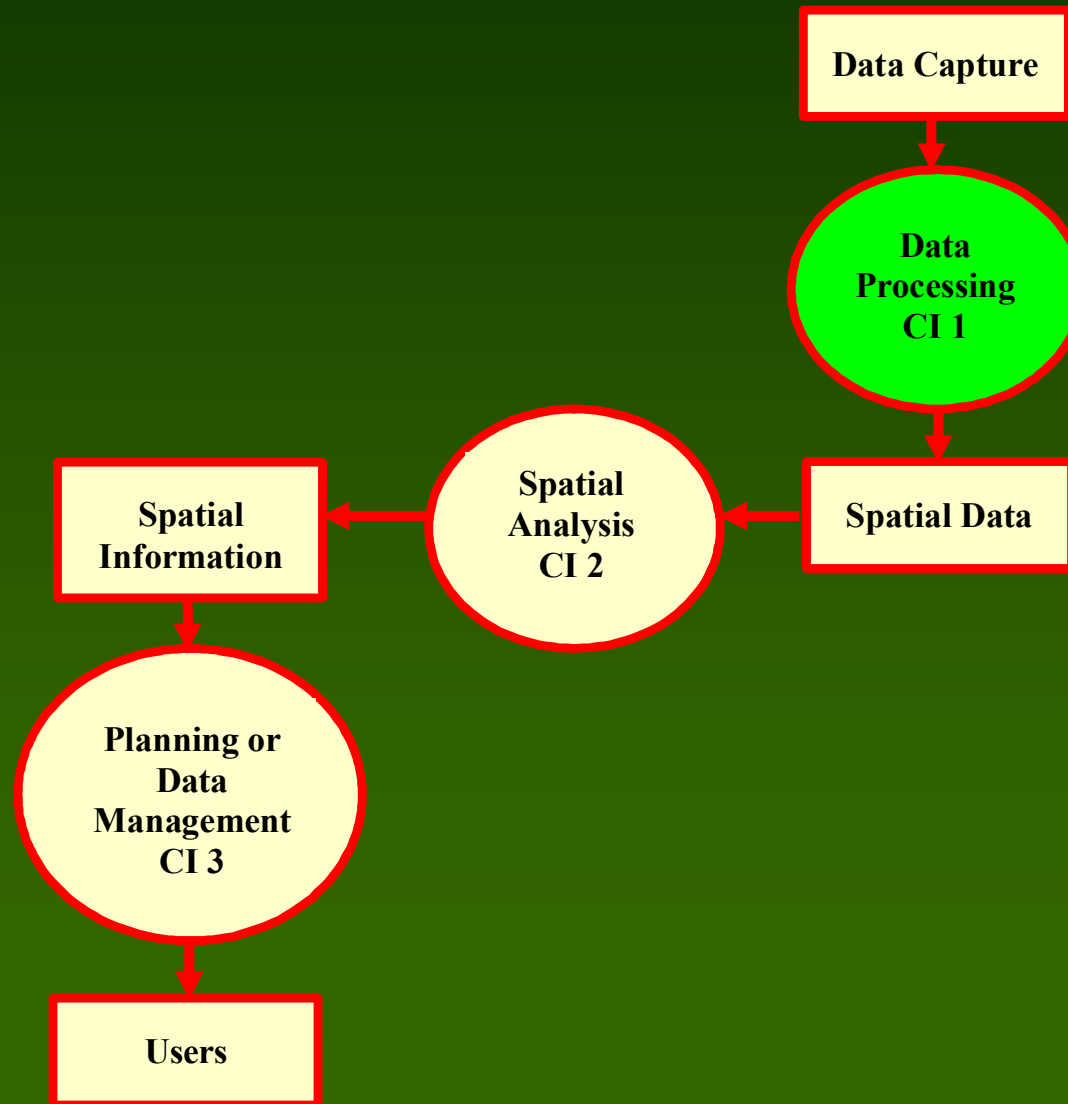
# Choroinformatics: Data Processing

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This approach, whose aim is processing spatial data, includes:

- The **Cartographic Approach**, which is concerned with manipulating exclusively cartographic data (the input, the processing and the output are all referred only to maps).
- The **Information Approach**, which emphasizes the importance of CI as **Information Systems** for managing spatial data bases.

# Choroinformatics: Data Processing

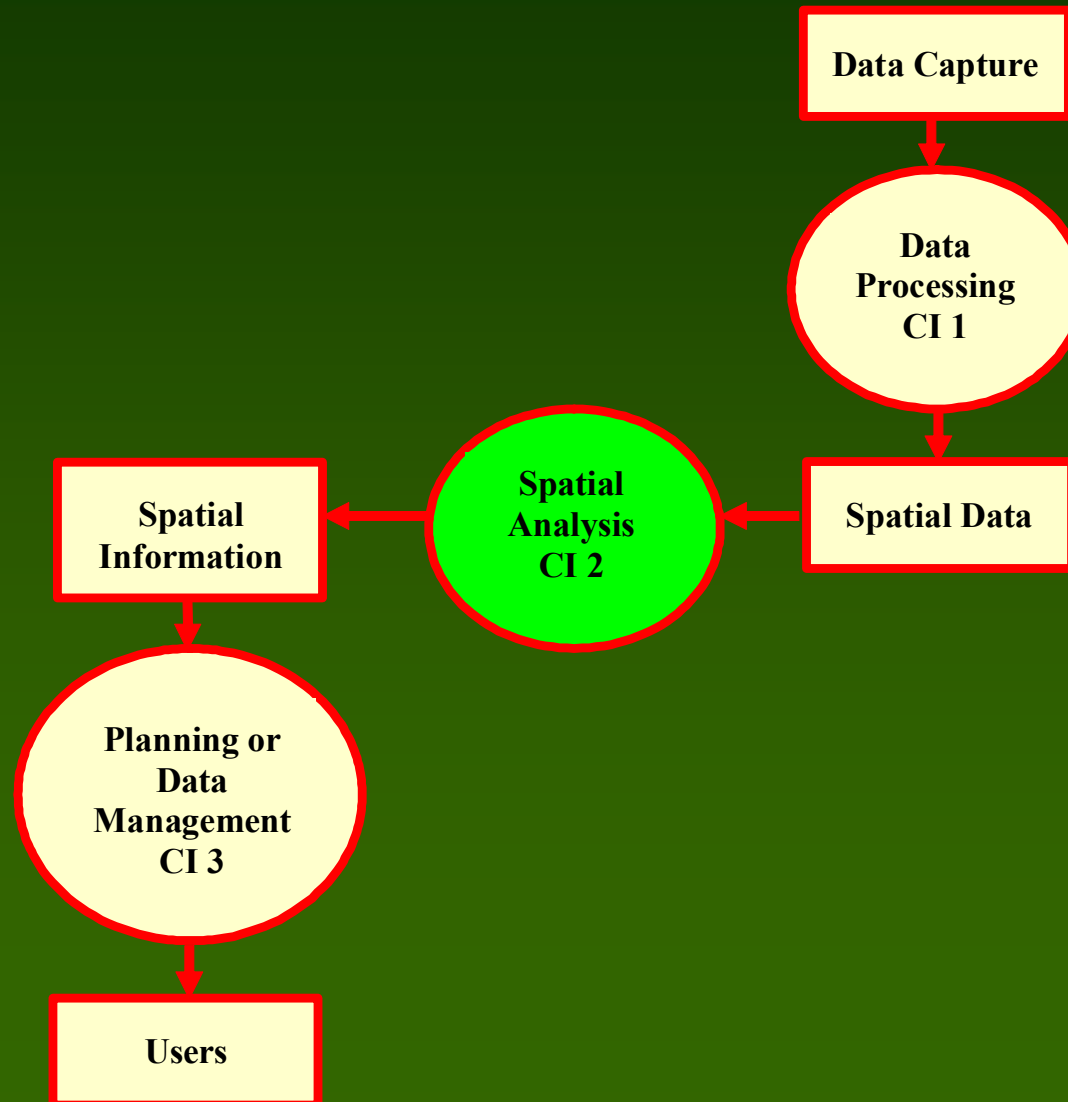


# Choroinformatics: Analysis

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This approach projects the importance of Spatial Analysis. According to this approach, CI represent part of the science of Geography and not simply a new technological gadget.

# Choroinformatics: Analysis

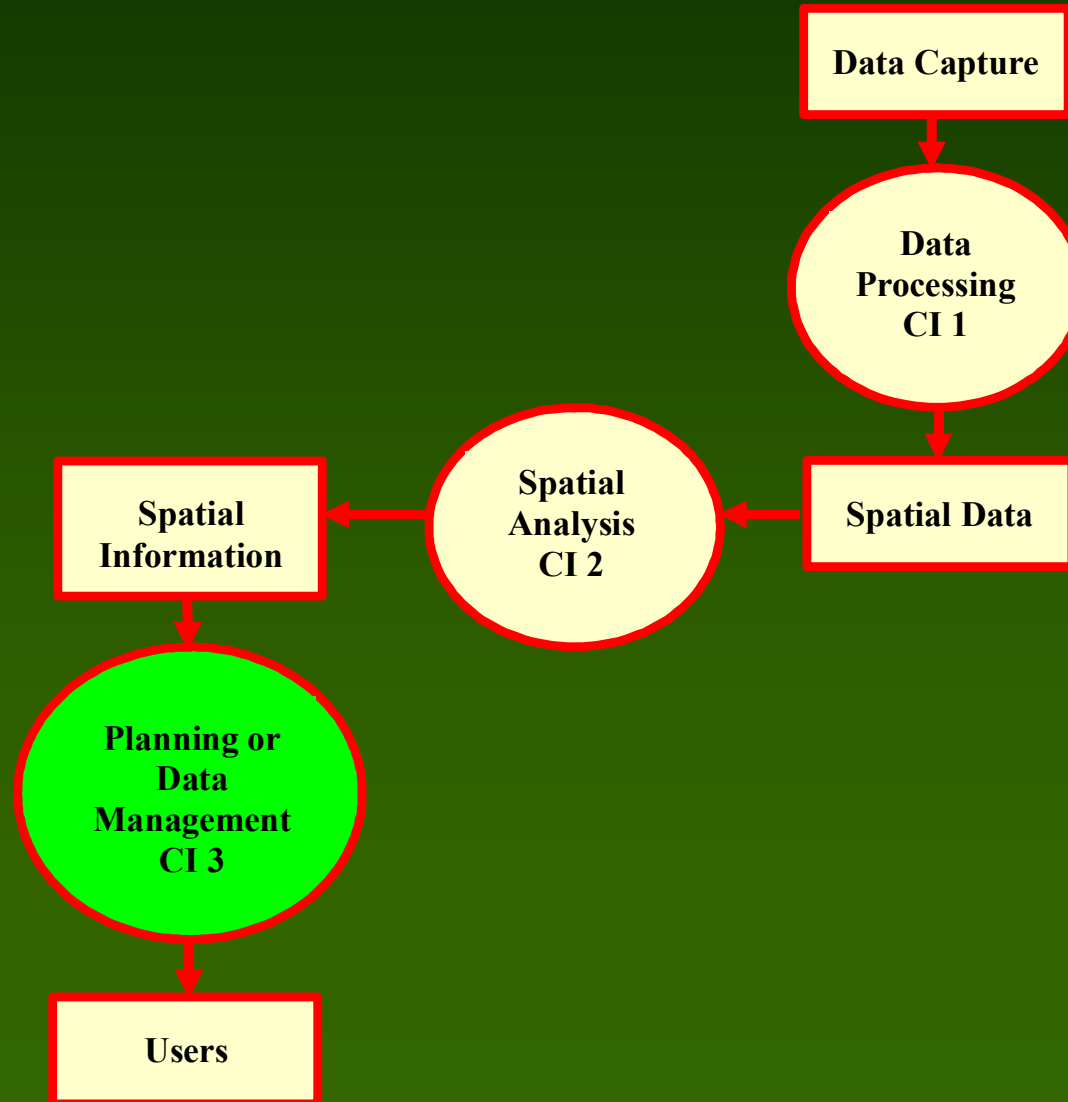


# Choroinformatics: Planning

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This approach is focused on the ability of the CI to help solve spatial problems. That is, to actively participate in spatial planning (Urban and Regional).

# Choroinformatics: Planning



# Processing - Analysis - Planning

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- These approaches are considered as independent and conflicting.
- It has been shown that having a common background -the Spatial Dimension- they are:
  - *Closely interrelated*
  - *Complementary*
  - *Separate components of an integrated spatial approach*

# The Dimensions of Choroinformatics

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Europeanization of Geography is not “solving” the various pressures put upon our field by accepting that something has to “give”, but finding the unifying force that will permit Europeans to apply the paradigm’s manifestations in any desired mixture that fits individual “geographical senses”. And, of course, this force is none other than **Choroinformatics.**

# Proposal for Europeanization

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The principle of unity and uniformity should be the **goal** towards Europeanization of Geography and Choroinformatics the **means** to accomplish it.

# Experience in Europe: Geography

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Madrid (Spain) : *Geographic Engineering*

Aalborg (Denmark) : *Problem-Solving-Oriented*


UK : *Planning*

Greece : *Spatial Analysis*


*In Europeanization all flowers can bloom as long as they can find the appropriate Choroinformatics mixture to grow upon.*

# The Road to Europeanization

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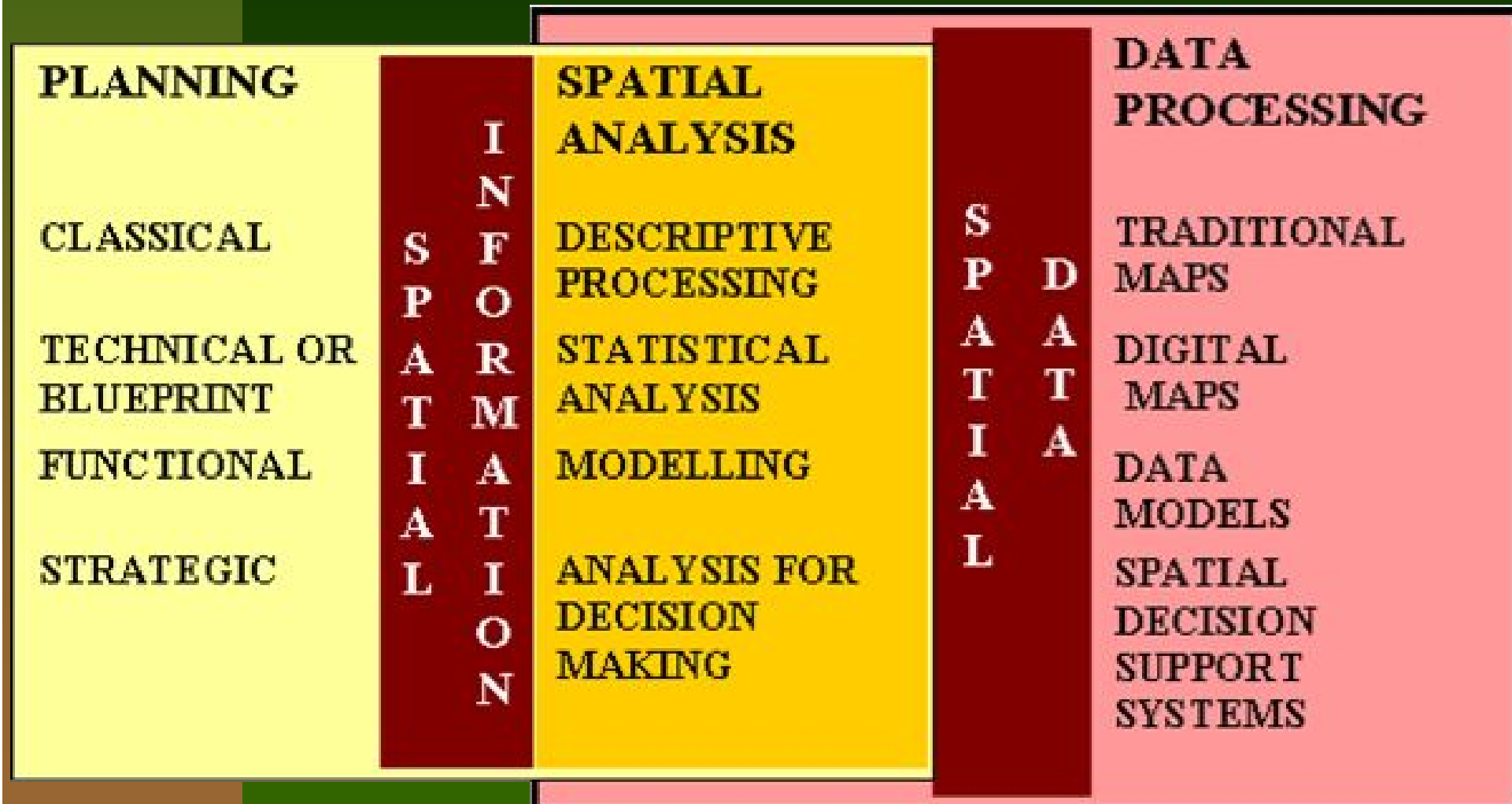
Europeanization passes through the understanding of the way in which CI can become the driving force of Geography.



That is, understanding the integrated approach to Data Processing, Analysis and Planning -the basic components of Geography- is paramount to a successful Europeanization of our science.

The road to Europeanization riding Choroinformatics is not as smooth or easy as you might have been led to believe.

# Paradigm Evolution



# Planning

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- **Classical Planning**, lasting until the beginning of the 20th century and was concerned with aesthetics and symmetry mostly in the urban areas.
- **Blueprint or Technical Planning** focusing on order and efficiency of Le Corbusier (urban) and Isard (regional).
- **Functional Planning** where the planner acts as social engineer optimizing the functions of a region.
- **Strategic Planning** which moved the focus of planning from plans to decision making.

# Spatial Analysis

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- **Descriptive Analysis**, focusing on data classification and coding and having as main tool the map.
- **Statistical Analysis** which uses mathematics and statistics to test and evaluate spatial distributions.
- **Modeling** expressed by the formulation and use of spatial models to describe and explain spatial patterns.
- **Analysis for Decision Making** creating the analytical framework to support the decision making process.

# Data Processing

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- **Traditional Maps** which for thousands of years were the only means of presenting and processing spatial data.
- **Digital Maps and other Products** focusing on spatial data bases becoming widely available as result of dramatic cost cuts in digital data capture.
- **Data Models** in which spatial relationships of geographic data are explicitly included in the data base.
- **Spatial Support Systems** where the processing of the data is aimed at the individual decision maker and at specific decision.

# Causal Relationships

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In addition to the “vertical” relationships or the temporal evolution of these areas there are horizontal or causal relationships between them:

- *Changes in the planning approach create different needs for analysis which in turn require a differentiated spatial data processing approach.*
- *Changes in the ways spatial data is processed formulate new approaches for their analysis which lead to a differentiated application of urban or regional planning.*

# Uneven Development

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Although experience and literature have repeatedly shown the existence of these explicit temporal evolutions and causal interconnections, and thus they are universally accepted, these relationships can not be considered as uniformly or evenly developed.

# Uneven Development II

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The reason is that each approach has been developed independently from the others and with no effort to follow existing links or to develop new ones, which are necessary to relate the manifestation of each area at a particular evolution stage with their counterparts.

# Towards Europeanization

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If the model upon which our field has to be based can not integrate all its components in an harmonious way, then the situation requires our immediate attention to overcome these dysfunctions, but most importantly hinders any efforts towards Europeanization.