

**Hunter College - CUNY**  
**Dept. of Geography & Environmental Science**  
**GEOG 101 Lecture Presentation Summary**  
**Spring 2021**

**NOTE:** *In the absence of in-person lecturing and face-to-face explanation of the material presented in the PowerPoint lecture slides, I will summarize the content of each lecture presentation, stressing the concepts and interrelationships that are essential to an introductory geography course. In essence, it is like giving you a transcript of my classroom lectures.*

*If, after reading this summary and viewing the lecture presentation, the imbedded short videos and hot links to articles, you have any questions, or if you would like to contribute a comment or two, need clarification by other examples or have additional information on the topic, please do not hesitate to email me at [agrande@hunter.cuny.edu](mailto:agrande@hunter.cuny.edu).*

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### **LECTURE 04: Introduction to Mapping**

- The purpose of this lecture is to begin our study of Geographers' Tools. The map is the geographer's special tool. The representation of data and other forms of information with the use of maps gives the field of geography a unique perspective. In this and the following lectures, we will look at how mapped data are compiled, analyzed and presented. We will define many terms. We will look at the collection, presentation and reading of mapped data as a tool for looking at the spatial distribution of the world's physical and human environments.
- **Slide 2: Outline of Topics.** For the remaining portion of Part I of this course we will focus on Geographers' Tools starting with cartography. Then comes location systems and the types of maps and their parts. We will end with geographic information technology: remote sensing, automated cartography and GIS. The first exam completes this section.
- **Slide 3: Geographers' Needs.** Three things are needed to study the earth and its parts: the collection of data, being able to locate this data and to portray this data spatially using cartographic techniques.
- **Slide 4: The Map.** The map is the geographer's special tool by giving a wealth of information at a glance (imagine trying to verbalize all the material contained on any map as I will attempt throughout the course), quickly shows the relationship between locations (directly and subliminally), but also can be used to influence people by the selection of the map's visual components.
- **Slides 5-7: Cartographic Terms.** Know these 9 definitions.
  - **Map.** In the definition of "map" there is both the essence of this tool and the problems that arise in its construction and use. A map represents a portion of the curved surface of the earth but because the earth is huge, a map has to be reduced (drawn to scale) and placed on a horizontal surface (distorting the curved surface), unless the latter is a globe.
  - **Cartography.** Cartography and geography are two different but related fields. Many cartographers are artists, not geographers.
  - **Atlas.** This just a collection of maps that can be random or themed.
  - **Globe.** A 3-D map – a sphere.
  - **Thematic map.** A special-purpose map that is focused on a topic and excludes non-topic-related information.
  - **Cartogram.** A unique type of map that uses data other than land area to represent an area's size.
  - **Mental map.** A map drawn from the perception of one's surroundings. What do we think is there? Or what is the distance between two places? Or how large is that place?

- **Cartographer.** The map-maker and the person who decides what information is to be included (can't include everything) and how it will appear to the reader (selects style).
  - **Reader.** The person, who after viewing the map, interprets the information contained. This person should be aware of all the options the cartographer has when drawing the map.
- **Slides 8-11 provide some examples for the definitions.**
  - **Slide 8.** A **thematic map** focuses on one topic and omits unrelated information. The *Language Regions of Africa* map uses colors to denote areas where certain language groups predominate. Political boundaries provide a reference, but here the countries are not named. Ten cities are shown, but I don't know why they were selected. Do you?
  - **Slide 9.** A **cartogram** is a map that uses data other than land surface to portray an area's size. It **does not** represent true size or true shape of the area. This population cartogram compares the size of the population of Latin American political units. The inset map shows the size comparisons using land area (not population). *Compare Ecuador with Peru and Nicaragua with Puerto Rico.*
  - **Slide 10.** Thematic map and cartogram formats are used to present the same topic: "World's Billionaires". Notice the differences.
  - **Slide 11.** This is a classic mental map found in many textbooks. It was compiled using a composite of visitors' responses at an interactive pavilion during the 1939 World's Fair in Flushing, Queens. Compare it with the standard US map at lower right. Note the distortions in highlighted areas. Places familiar to New Yorkers are larger and more accurate while other areas are not. On the East Coast, note the placement and size of Cape Cod, Long Island, New York (Manhattan) and Florida. On the West Coast, note the placement and size of San Francisco, California, Hollywood and Reno. *Can you explain them?*
- **Slide 12: Map Design.** Since map-makers cannot fit everything into a map, they must employ cartographic generalization. If information is selected for inclusion, what is omitted? Since the map-maker is working with a very small surface area, usually page size, a stylistic decision has to be made as to how that information going to be presented and not clutter the map.
- **Slide 13** shows four variations of the same topic: "oil reserves." *Note how different they look.*
- **Slide 14: Cartographic Variables.** Here are 5 major factors in portraying information on maps.
  1. **Scale:** ability to show detail.
  2. **Technology and skill:** ability to present detail.
  3. **Data:** is it accurate and reliable?
  4. **Purpose:** why is it being drawn?
  5. **Psychology:** use of colors, patterns, symbols and categories to influence the reader.
- **Slide 15: Cartographic Generalization.** Here are 4 more definitions we need to know to make us better map readers. *Slides 17-22 are examples.*
  - a. **Simplification:** omitting details because no map can show everything
  - b. **Classification:** grouping information into categories
  - c. **Symbolization:** use of graphics instead of words to portray information
  - d. **Induction:** since we don't have data for every square inch of the earth, we need to take the liberty and guess what is there when no real information exists. Therefore, we generalize in the data-void areas based on appropriate points of reliable and accurate information.

- **Slide 16: Cartographic Authorship.** We need to know who providing the data or information and who is publishing it and distributing it. *Slides 23-27 are examples.*
- **Slides 17-19 Cartographic Grouping.** The map key classifies the percentage of people age 65 or older into 4 groups. The assumption is that they have equal ranges: 0-25%, 26-50%, 51-75% and 76-100%. In reality, the grouping is 0-19.9%,20-24.9%, 25-29,9% and 30-100%! Slide 19's key also has an unusual grouping of percentages.
- **Slides 20-21: Cartographic Symbolization.** Here are two examples of the use of symbols to convey information and influence attitudes. **Slide 20** uses an octopus over a map to convey the “grabbing nature” of the topic. **Slide 21** uses arrows and aircraft symbols to convey the “swarming” of US military might to the war zones during WWII.
- **Slide 22: Cartographic Symbolization 3-D shapes:** 3-D shapes are used to convey the number of noise complaints to community boards. The taller the symbol, the greater the number of complaints about noise. However, by using 3-D symbols rising from an outline map, taller symbols in the foreground block shorter symbols in the background and we cannot see and compare all the community boards. *This is not a good choice.*
- **Slide 23: Cartographic Induction.** Weather maps are good examples of cartographic induction. Since there are a limited number of recording stations around the country, the data is only accurate for the station site. We then guesstimate the weather conditions in the areas between the weather stations because there aren't any recording instruments in those areas.
- **Slide 24-29: Authorship.** Here are three maps used in commercial advertisements and one used in a political advertisement. Each uses symbolization to try to make their point but underlining their premises is a stretch of imagination
  - **Slide 24: Selling airline seats on Finnair:** Helsinki is not centrally located and in fact, is out of the way for travel to Europe.
  - **Slide 25: Selling theme park destinations for Six Flags:** There is not a Six Flags park near you “no matter where you travel or live” as stated in the ad. The big dots, flags and cartoon hide the areas of the US without a Six Flags theme park. Even the modern ad covers most of Western US where no Six Flags parks are located.
  - **Slide 26: Comparing nationwide wireless service:** Warring maps! Verizon may cover more square miles but AT&T said it was located where the people live.
  - **Slide 27: Map to influence a Congressional vote:** This is example is a wonderful, simple, highly subliminal newspaper ad map that B'nai B'rith paid to publish in 1978 to influence Congress not to sell US F-15 fighter jets to Saudi Arabia. **Slide 29** is a normal outline map of the Middle East with countries tagged for comparison. **Email what you see to me: [agrande@hunter.cuny.edu](mailto:agrande@hunter.cuny.edu).**
- **Slide 30: Next lecture topic: Location Systems**