HERE BE DRAGONS
How we map our World

Arts Speakers Series 26 February 2025

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Scope

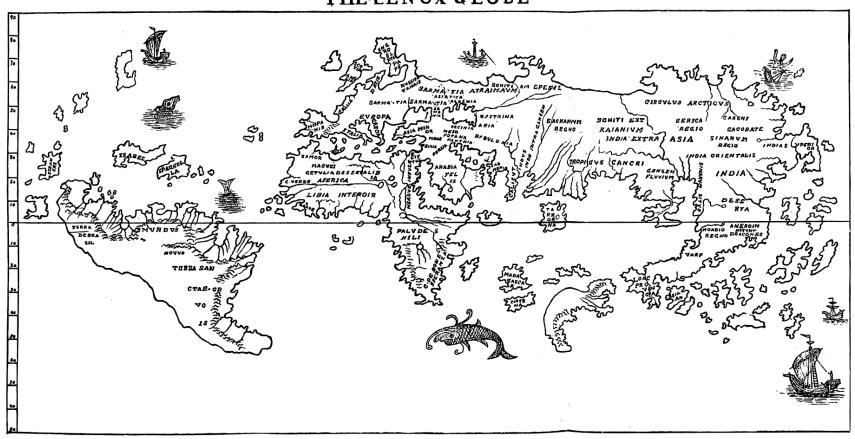


- Introduction to Maps
- + Heaven & Earth, and Propaganda Maps
- **Geographic Data**
- Mapping the World

Here be Dragons



THE·LENOX·GLOBE



Why map?



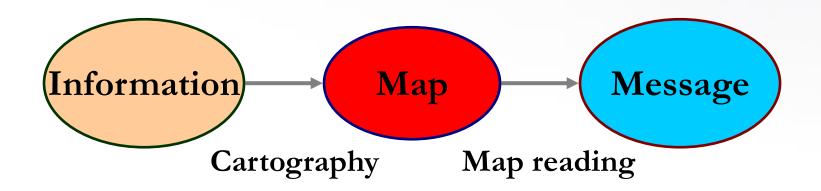
'When we want to communicate something spatially complex, like a spiral staircase, it is easier to draw it in the air or on paper than to define it in words. In the same way, ideas and experiences that are temporally or intellectually complex often can be understood more clearly from diagrams or maps than from verbal descriptions'

Susan Hiller, Dream Maps

Maps



- *Maps visual communication tools
- Messages through a medium
- *Not all maps are equal cartographic quality

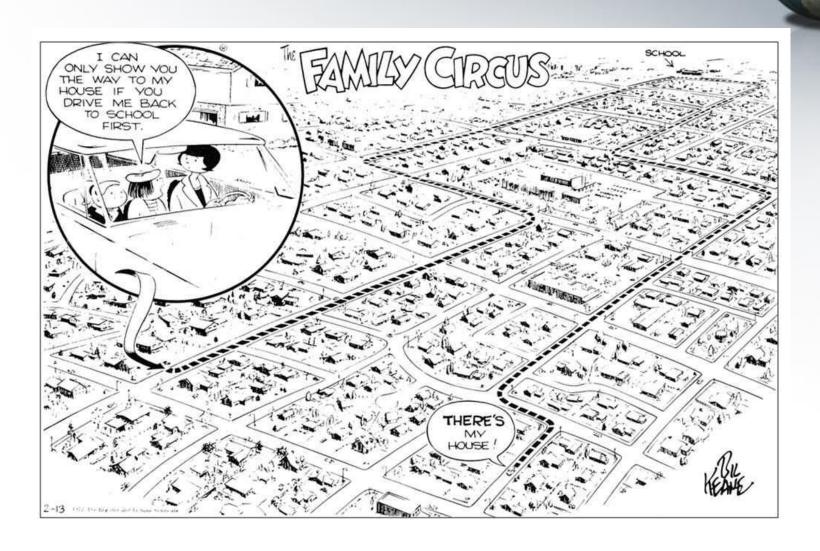


Map Uses

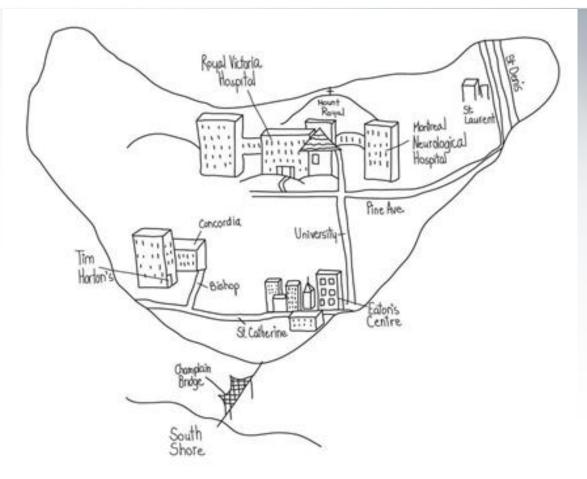


- *Recording & storing information
- Presenting & communicating
 - Demonstrate, persuade, inform/misinform
- Analyzing geographic relationships
 - Distributions & patterns
 - **Visualization**

Mental Maps



Mental Maps







Place



Objective locationwith uniqueness &interdependence

Subjective social & cultural construct

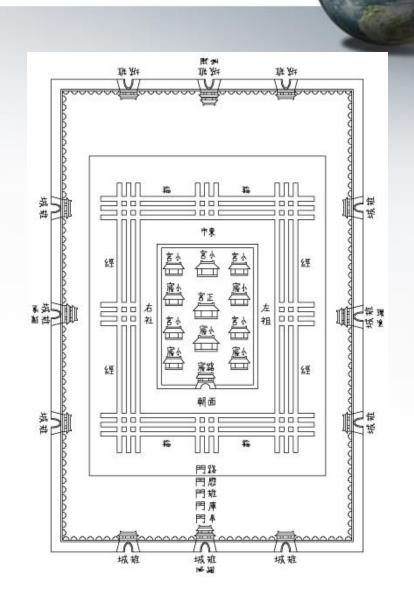




The power of place

Heaven & Earth

- *♦ Cosmomagical City*
- Forbidden City Beijing,China
- Based on auspiciousnumber of 3 tiers
- Marked the inner sanctum of Imperial city
- A model of harmony & moral order expressingHeaven's will



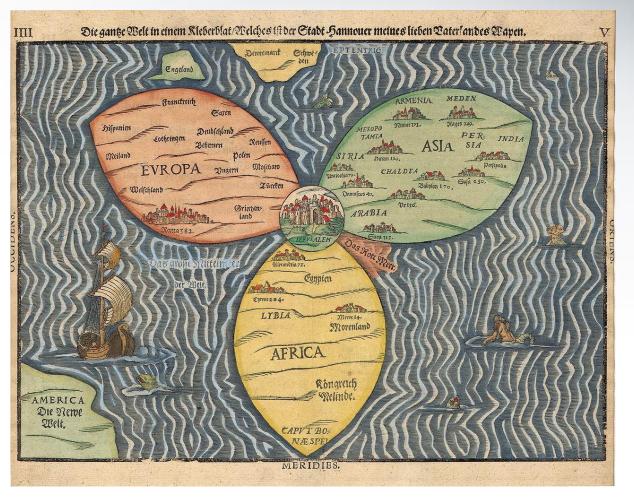
Heaven & Earth

◆T-O Map or Beatus Map (7th century)



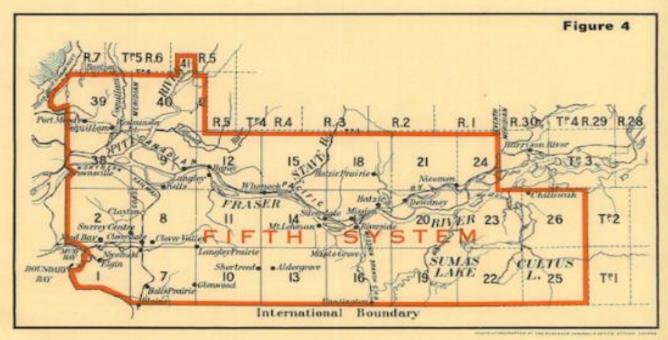
Heaven & Earth

Bunting Clover Leaf Map (1581)



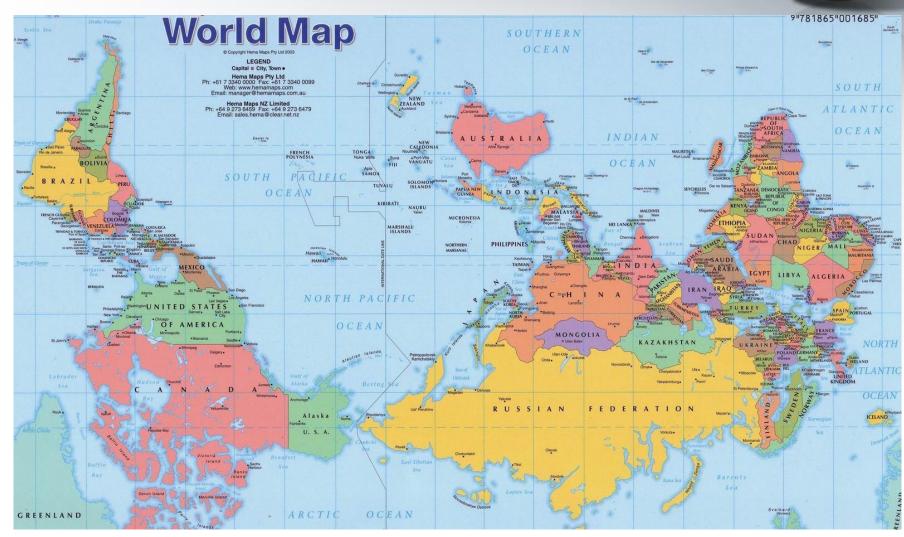
Map and Culture





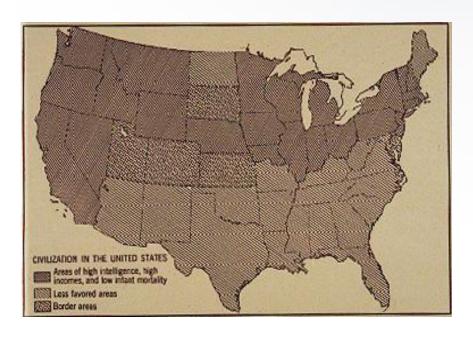
Map and Culture





Propaganda Map





USA circa 1920

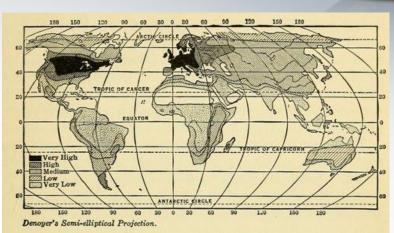
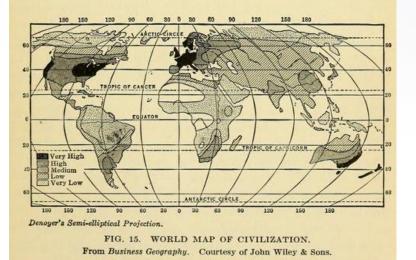


FIG. 14. WORLD MAP OF CLIMATIC ENERGY.



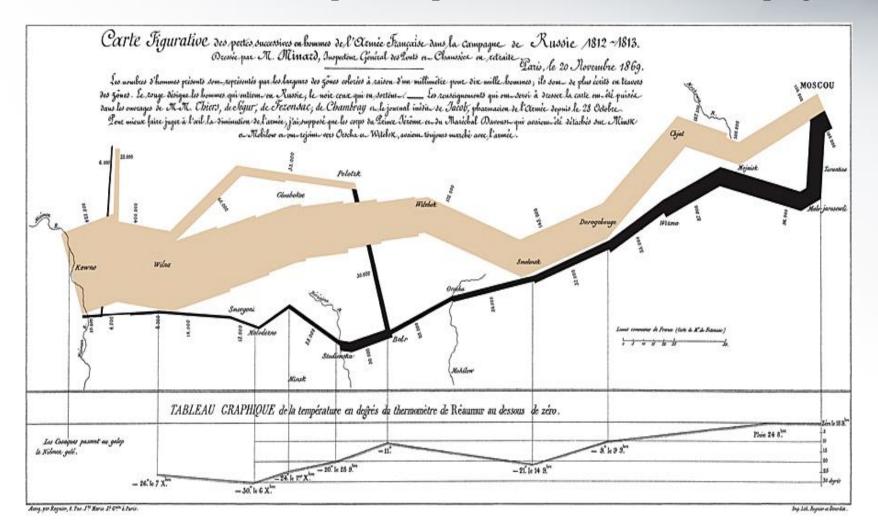
Propaganda Map



Flow map

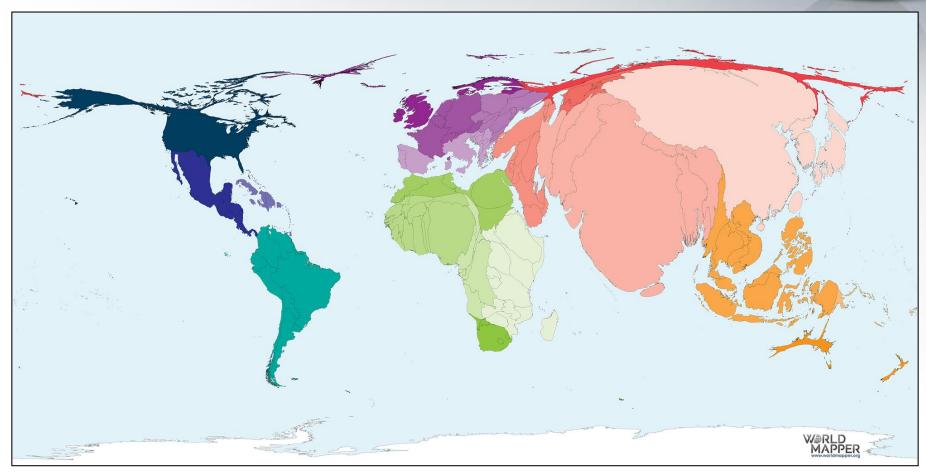


Minard's 1869 flow map of Napoleon's 1812 Russian campaign



Cartogram





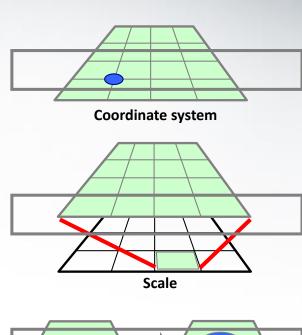
Geographic Data

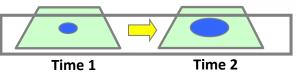


Spatially related

⊕ Has scale

Dynamic in space & time

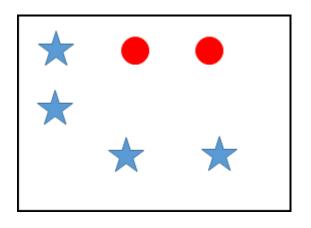


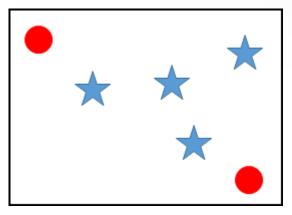


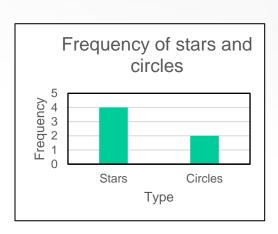
Geographic Data - Location



- # Geographic phenomena may or not vary smoothly in space
- Deals with both features' locations & their attribute values
- Locations of features different spatial patterns, yet similar frequency distribution



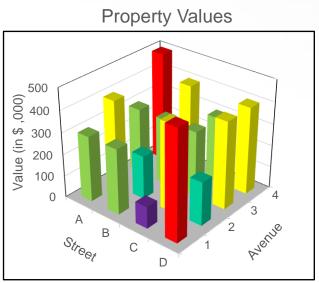




Geographic Data - Attributes



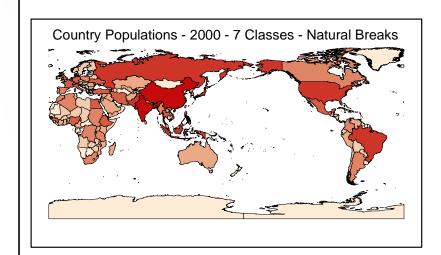
*Attributes of features - different spatial patterns, yet similar frequency distribution

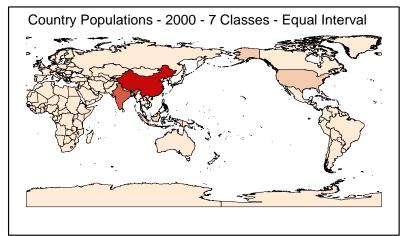


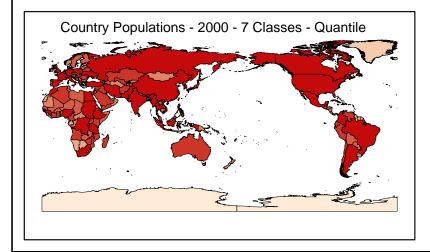


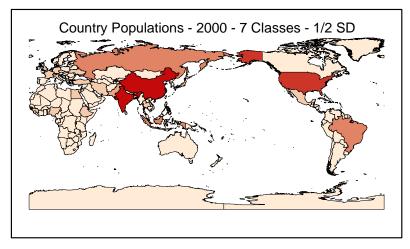
Geographic Data - Classification





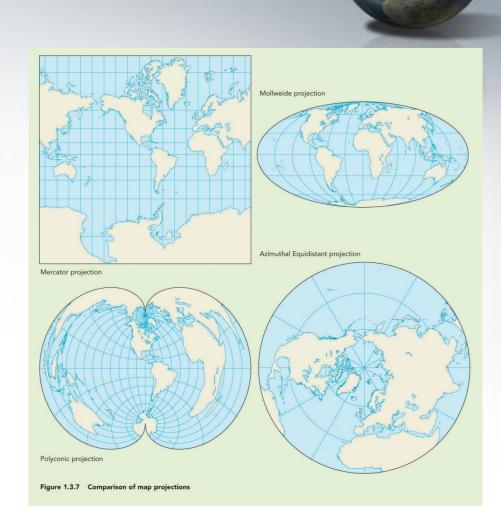






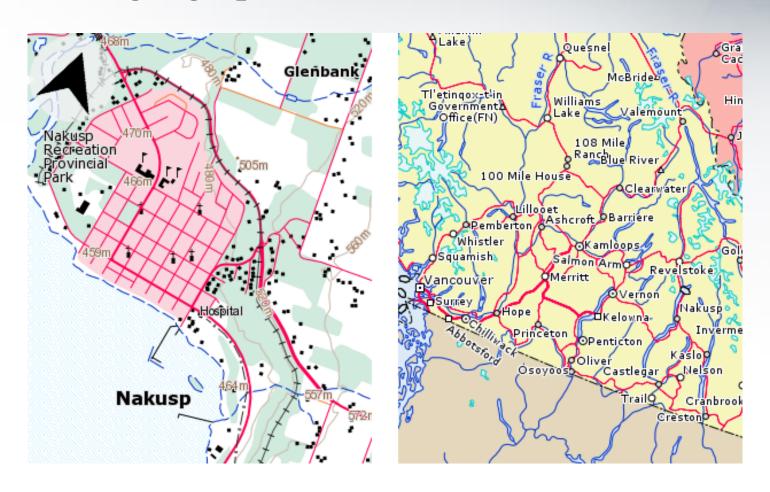
Geographic Data - Projections

- Requires a 2D mapprojection of 3D reality
- **Mathematical** models
- Distort sizes & shapes of land masses in different ways



Geographic Data – Scale

Provides geographic context for analysis



The True Size of Africa

AREA COUNTRY China 9,597 USA 9.629 India 3.287 Mexico 1.964 Peru 1.285 633 506 Spain Papua New Guinea 441 378 Japan Germany 357 Norway 324 Italy 301 270 New Zealand United Kingdom 147 Bangladesh 144 132 Greece TOTAL 30.102

AFRICA

30.221

Sources: Britannica, Wikipedia, Almanac 2010 Graphic layout for visualization only (some countries are cut and rotated) **NETHERLANDS** But the conclusions are very accurate: refer to table below for exact data BELGIUM SWITZERLAND **EASTERN UNITED STATES**

In addition to the well known social issues of illiteracy and innumeracy, there also should be such a concept as "immappancy", meaning insufficient geographical knowledge.

A survey with random American schoolkids let them guess the population and land area of their country. Not entirely unexpected, but still rather unsettling, the majority chose "1-2 billion" and "largest in the world", respectively.

Even with Asian and European college students, geographical estimates were often off by factors of 2-3. This is partly due to the highly distorted nature of the predominantly used mapping projections (such as Mercator).

A particularly extreme example is the worldwide misjudgement of the true size of Africa. This single image tries to embody the massive scale, which is larger than the USA, China, India, Japan and all of Europe...... combined!

Top 100 Countries













132.632.524



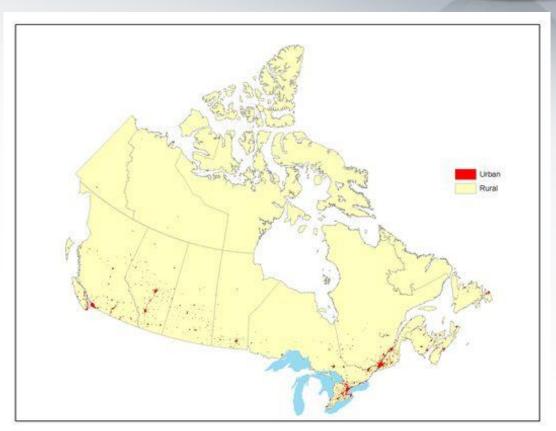




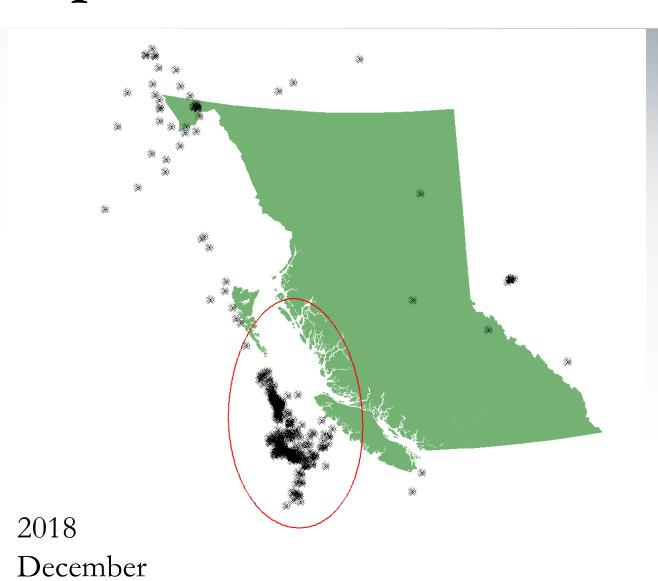




- Canada's "urban areas" coverof its land area



Example from ArcGIS



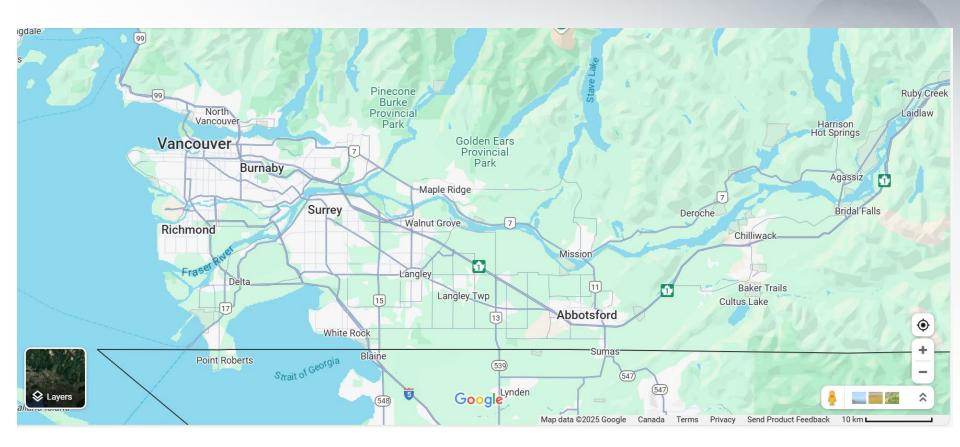


Magnitude 3 or higher earthquakes in 2018

Standard
Deviational
Ellipses

Where be dragons?





Summary & Selected References

- Maps are models of reality
- They reflect human concepts & 'dreams'
- 'Map' reading & interpretation are essential skills in today's world
- Thank You & Question?

- DeCosta, B. F. (1879) The Lenox Globe. Magazine of American History. 3.9.
- Hiller, S. (1998). Dream Maps. British Journal of Psychotherapy. 14, 4.

 http://onlinelibrary.wiley.com/doi/10.1111
- Johan, B., Balakireva, L., Bettencourt, L., Chute, R., Hagberg, A., Rodriguez, M.A. & Van de Sompel. H. (2008). A Clickstream Map of Science. Courtesy of Los Alamos National Laboratory. In Börner, K. & Hardy, E.F. (Ed.). 5th Iteration (2009): Science Maps for Science Policy-Makers, Places & Spaces: Mapping Science. Retrieved September 10, 2023, from https://scimaps.org
- Knox, P. L., Marston, S. A., & Imort, M. (2019). Human geography: Places and regions in global context (5th Canadian ed.). Pearson Canada.
- Lewis, M.W. (n.d.). Environmental Determinism, Ellsworth Huntington, and the Decline of Geography. In GeoCurrents. Retrieved September 24, 2023, from https://www.geocurrents.info/blog/2011/02/10/environmental-determinism-ellsworth-huntington-and-the-decline-of-geography/
- Maclean's. (2014, June 26). Mapped: O Canada, our home and cliché land. https://macleans.ca/society/mapped-o-canada-our-home-and-cliche-land/
- Taylor, W.A. (1975). Crown Lands: A History of Survey Systems. Registries and Titles Department. https://ltsa.ca/wp-content/uploads/2020/10/Crown-Lands-A-History-of-Survey-Systems-1.pdf
- The Library of Congress. (n.d.). Exploring the Early Americas: Heavens and Earth. The Library of Congress. Retrieved September 10, 2023, from https://www.loc.gov/exhibits/exploring-the-early-americas/interactives/heavens-and-earth/earth/artifact6-earth.html
- World Mapper. (2018, May 1). The World in 2018. https://worldmapper.org/theworld-in-2018/