



# **Cartography M.Sc.**

## **Development of the international schools of cartographic thought**

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# Outline

- Introduction and Motivation
- Research Objective
- Background
- Survey
- In-depth Interview
- Education
- Synthesis
- Reflections
- Conclusion

- Reason: The interactions between the different schools have not been studied.
- Aim: Discover how schools were developing by **interviewing** prominent cartographers and observing the changes in **educational programs** around the world.

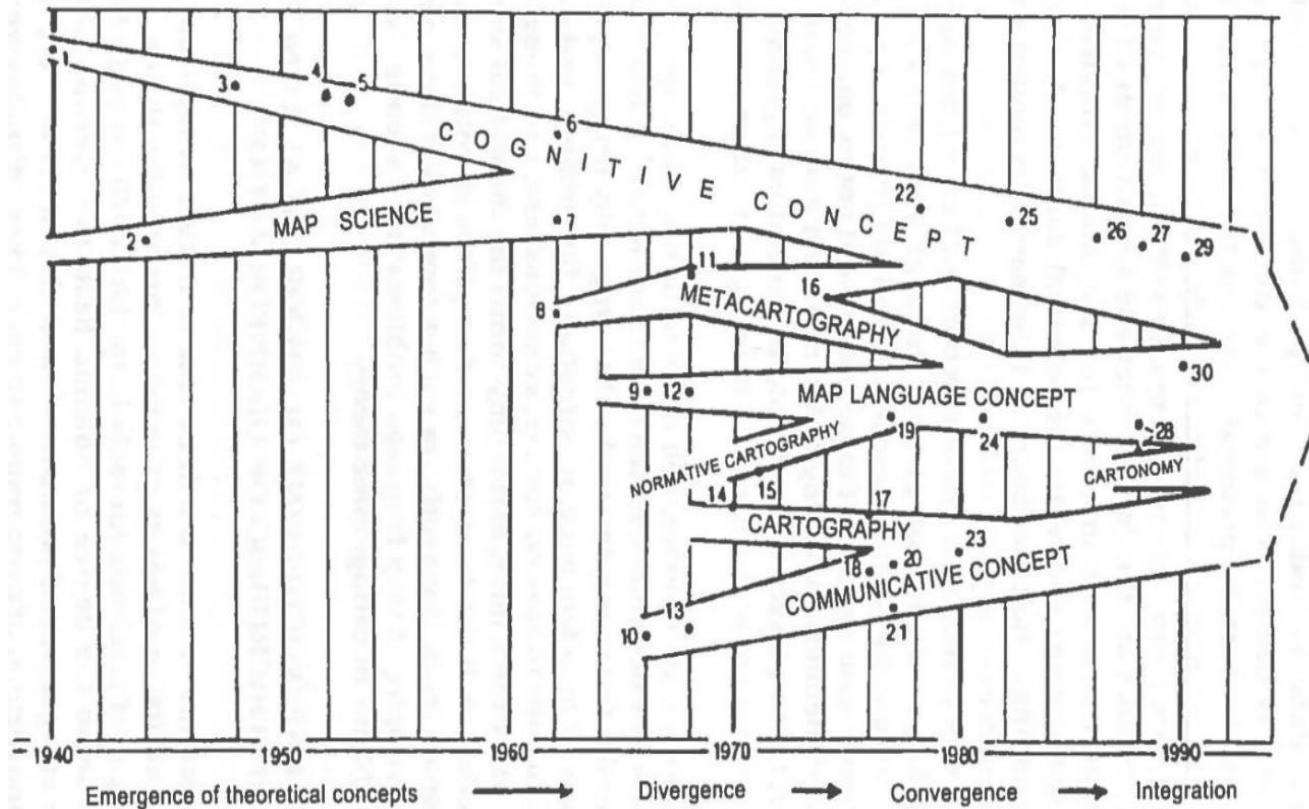
# Research objective

- To study the development of the international schools of cartographic thought to see if, how, and when they influenced each other.

# Background – Related definition and studies

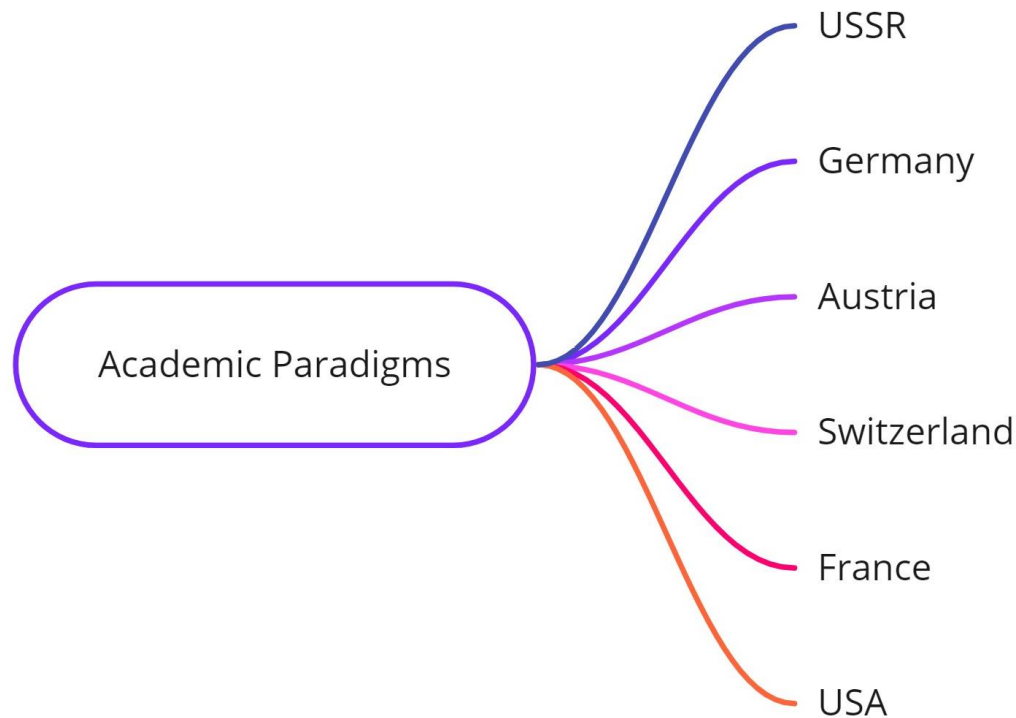
- **School of thought** – “a set of ideas or opinions that a group of people shares about a matter” (Cambridge Dictionary)
- **School** – “a group of persons who hold a common doctrine or follow the same teacher (as in philosophy, theology, or medicine)” (Marriam-Webster)
- **Tendencies or schools of thought** – “...thoughts, trends, perspectives, and approaches which have been developed within a science or discipline, i.e. geography and cartography” (Azócar & Buchroithner, 2014)

# Background – Related definition and studies



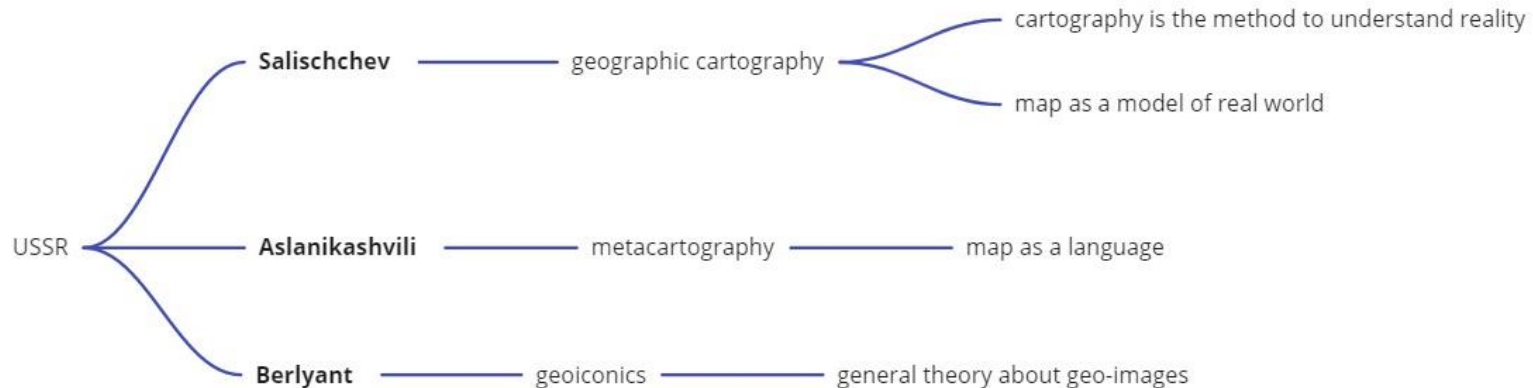
The course of  
theoretical thought in  
cartography over 50  
years  
(Berlyant, 1994)

# Background – Scholars and concepts



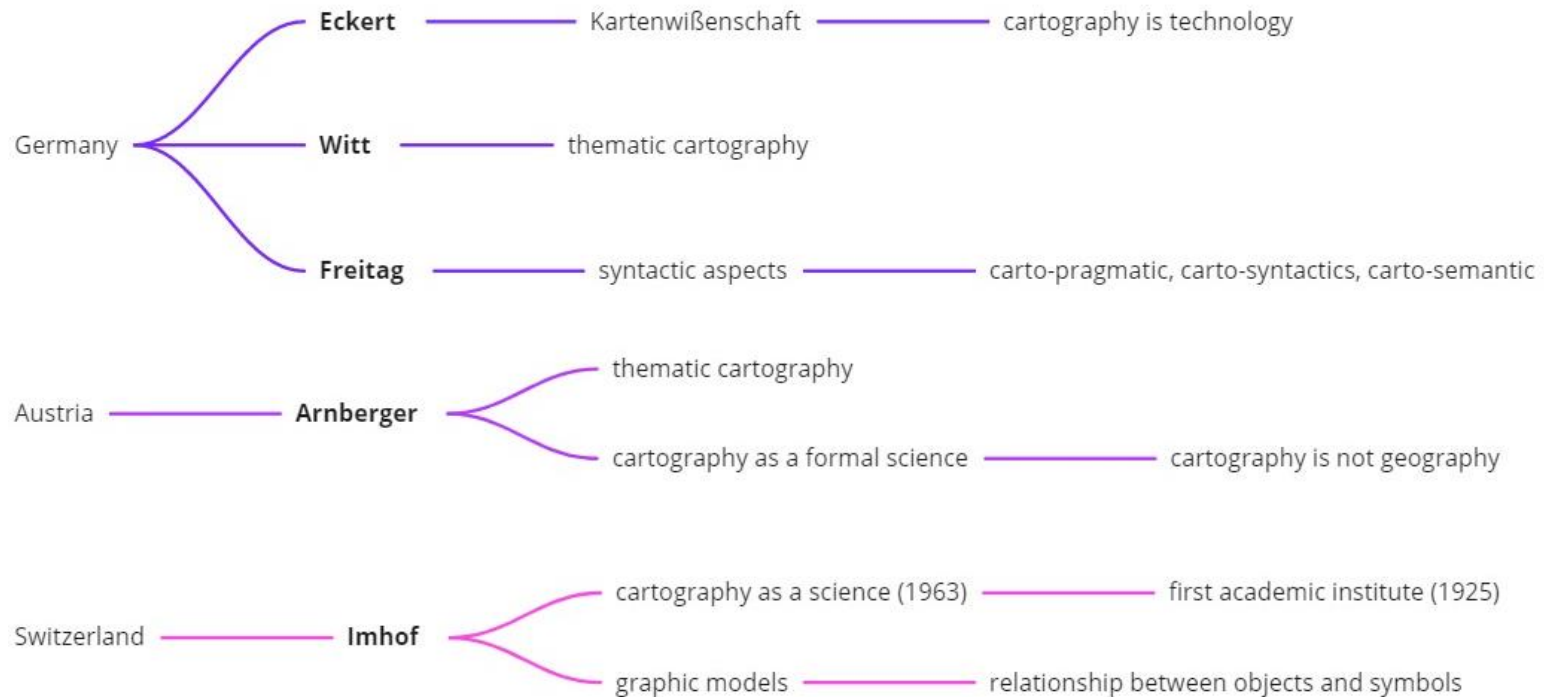
miro

# Background – The Russian School

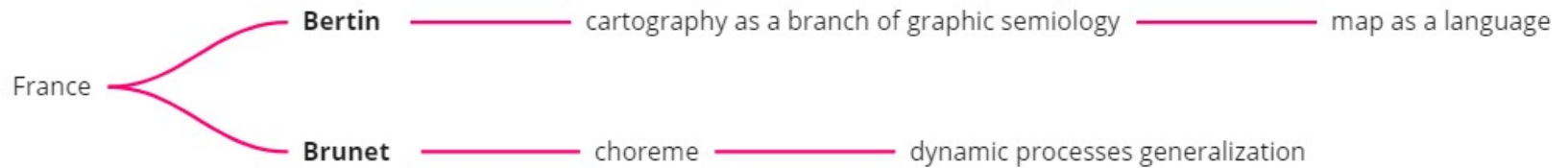




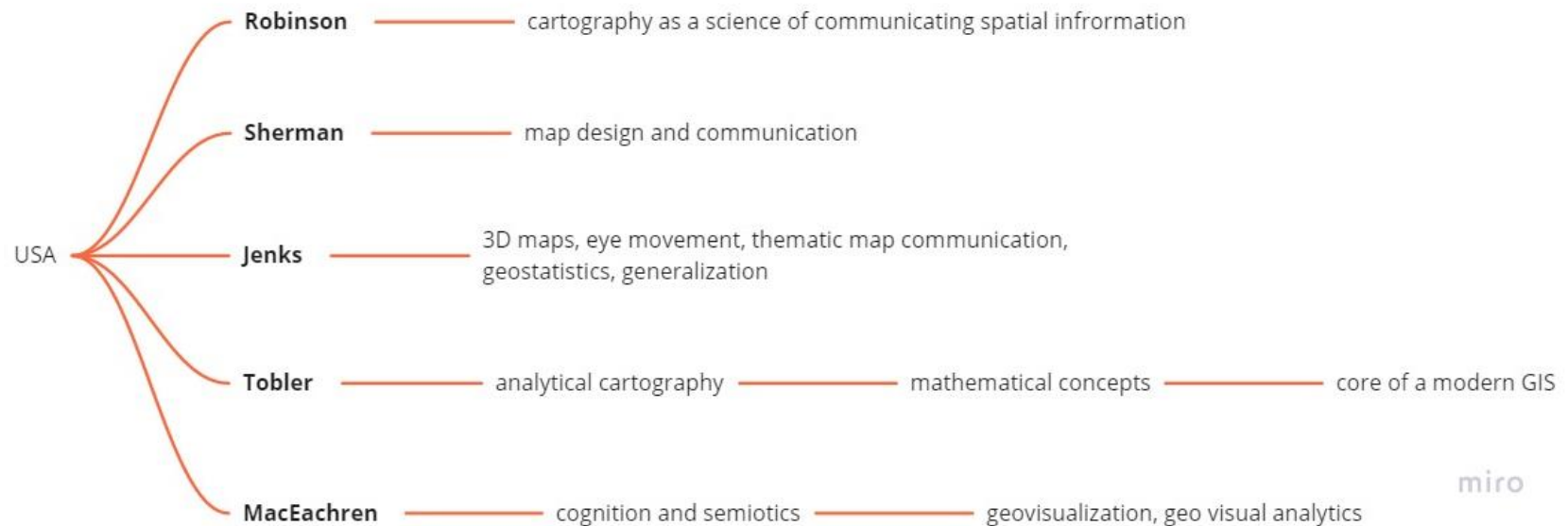
# Background – The German School



# Background – The French School



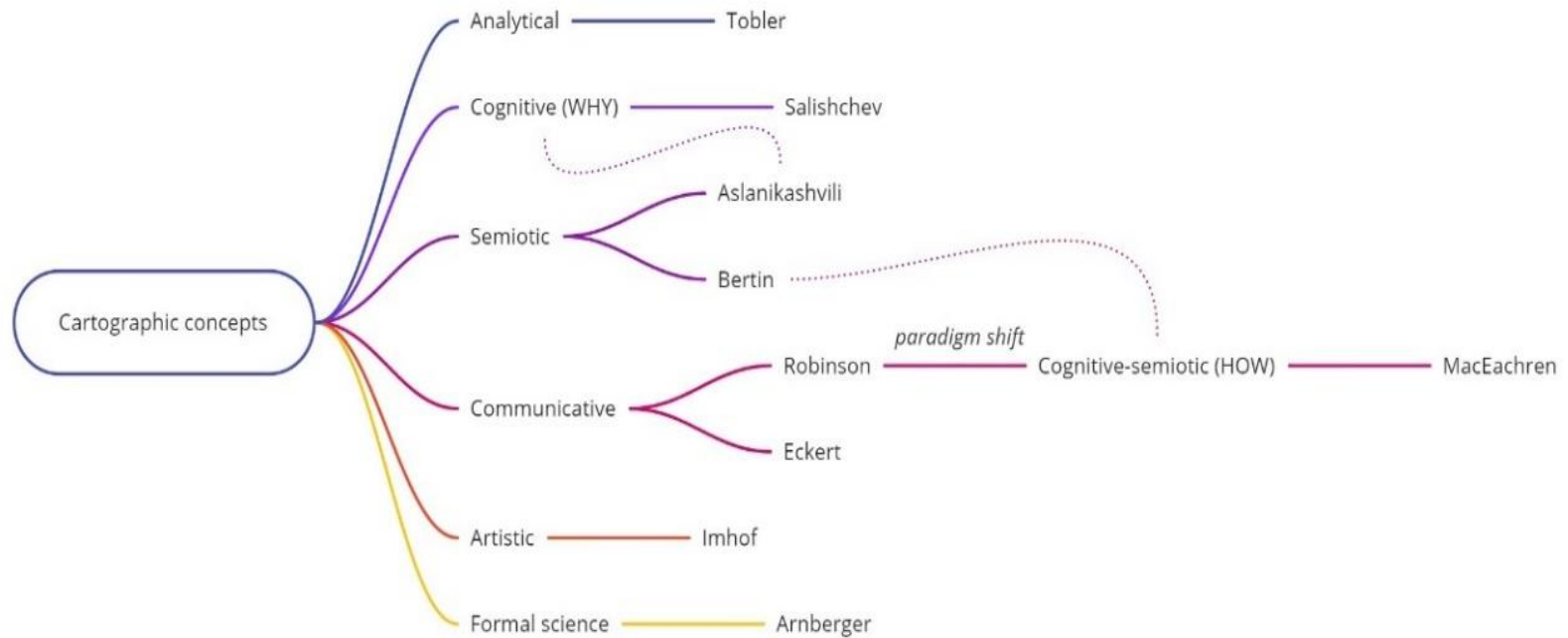
# Background – The American school



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# Background – Major concepts



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# Background – Academic Cartography locations

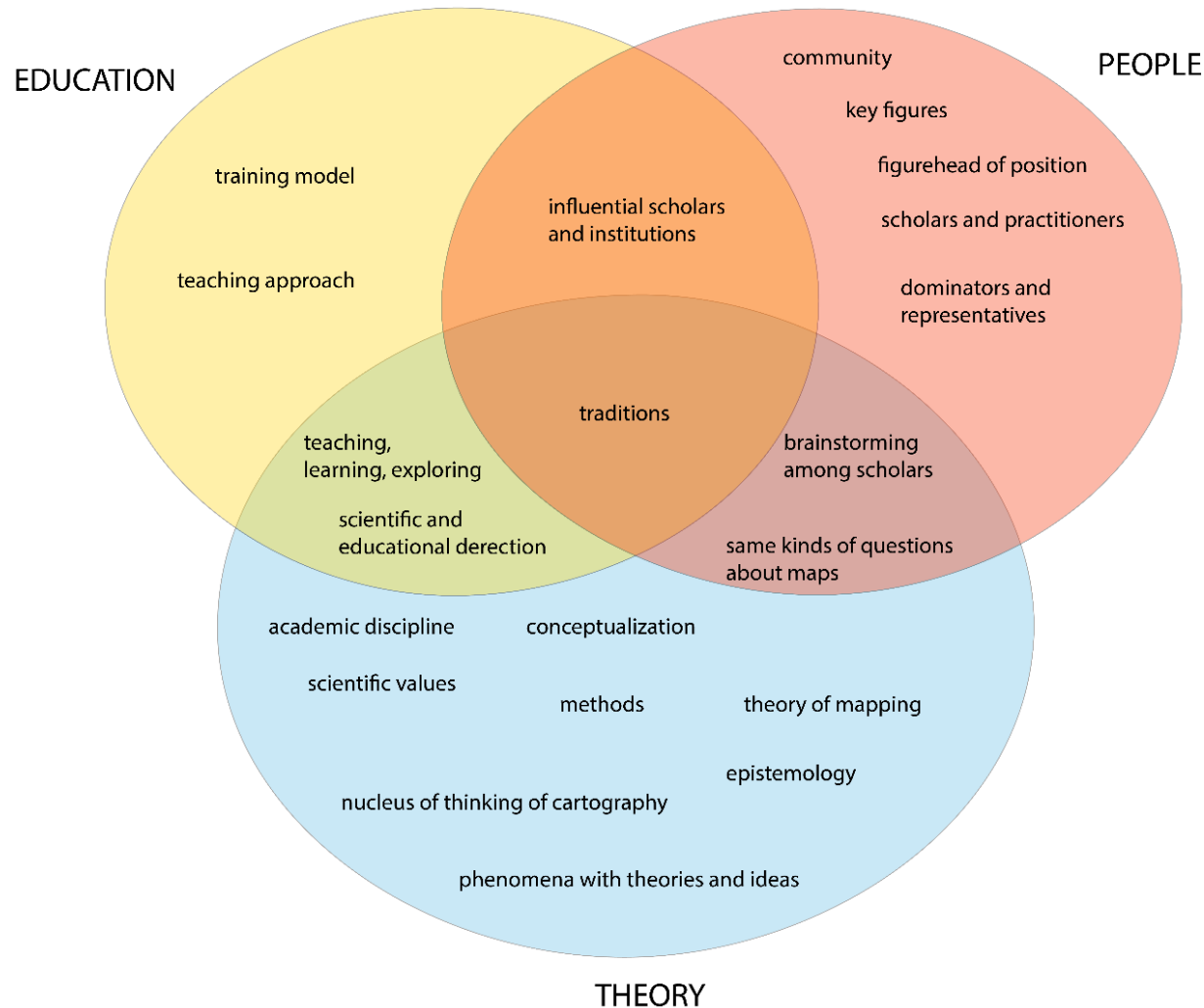


# Survey – Methodology and execution

- 57 scholars were asked four questions via email:
  - What do you consider a cartographic school thought, and what characterizes it?
  - Do you consider yourself a part of a cartographic school, and if yes, which school?
  - Is there a single cartographic school in your country or there are more, and if more can you describe them?
  - Do you witness a convergence of cartographic schools, and if so, what do you see as the main reason?

- A cartographic school of thought is a group of scholars who share the same ideas about the core of cartographic knowledge, education, and practice.

# Survey – Results

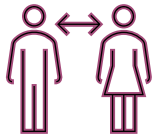


Criteria of a school of cartographic thought



- The processes, influencing cartographic schools:
  - globalization impact (internet, international exchange, global trends),
  - cooperation of different schools,
  - integration with GI Science,
  - influence of other domains,
  - English as the language of science.

# In-depth Interview – Methodology and Execution



Responsive interviewing approach  
(Rubin & Rubin, 2005)



16 interviewees



30-60 minutes interview



Zoom video-calls and  
transcribing software Otter



Anonymization  
of names

- Cartography:
  - In Russia, it is a part of the **compound discipline together with GIS and remote sensing**, and strongly related to geography.
  - In Germany, it has never been an independent domain, it was more an **engineering field** than a science.
  - In France, it is seen as **geography specialization**, which is well distinguishable from GIS and remote sensing.
  - In the USA, it is the **part of Geography and GIS domain**.

- Cartography:
  - In Russia, it is not concentrated on the map design or communication of spatial information, but on **acquiring knowledge about spatial phenomena** with the help of making and reading maps
  - In Germany, France, and the USA, it is seen as a **design, visualization discipline with an emphasis on cognition.**

- In the 2<sup>nd</sup> half of the 20th c. – “scientific orthodoxies” and the worse conditions to interact.
- Nowadays cartographic schools **interact and mixed better**, because of:
  - globalization;
  - the authoritative scholars and the language barriers influence less nowadays.

# Education – Methodology and Execution

N	Degree(s)	Program	University	Year(s)
1	Spec.	Cartography	MSU	2009
2	BSc, MSc	Cartography and Geoinformatics	MSU	2016, 2018, 2021
3	MSc	SIG-DESS	Paris 1, ENGS	2000
4	MSc	Carthageo	Paris 1, Paris 7, ENGS	2009, 2021
5	Dipl.	Cartography	TUD	2000
6	BSc	Cartography and Geomedia techniques	TUD	2009
7	MSc	Geoinformation Technologies	TUD	2011, 2015
8	BSc	Geodesy and Geoinformation	TUD	2020
9	Dipl.	Surveying and Geoinformation	TUW	2000
10	BSc, MSc	Geodesy and Geoinformation	TUW	2009, 2021
11	MSc	Geoinformation and Cartography	TUW	2009
12	MSc	Cartography	TUM, TUD, TUW	2011, 2021
13	BSc, MSc	Cartography and GIS	UW–Madison	2000, 2004, 2009, 2020

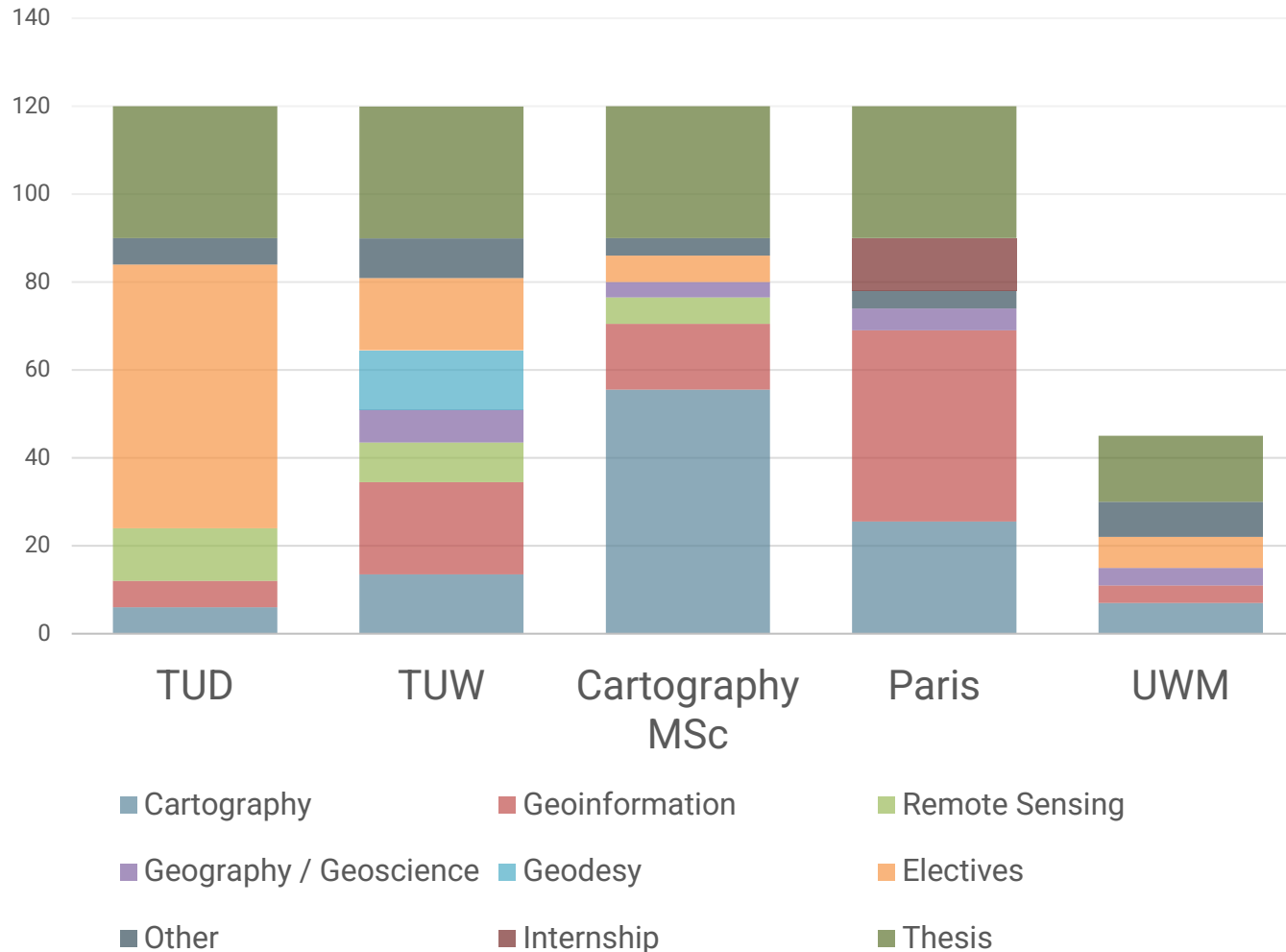
26 curricula total

# Education – Methodology and Execution

- Pitfalls:
  - Different credit measurements
  - Different level of detail
  - Language
- Solution:
  - No comparison between different schools and standardization
  - Grouping subjects into six modules
  - Research on meanings

# Education – Master programs

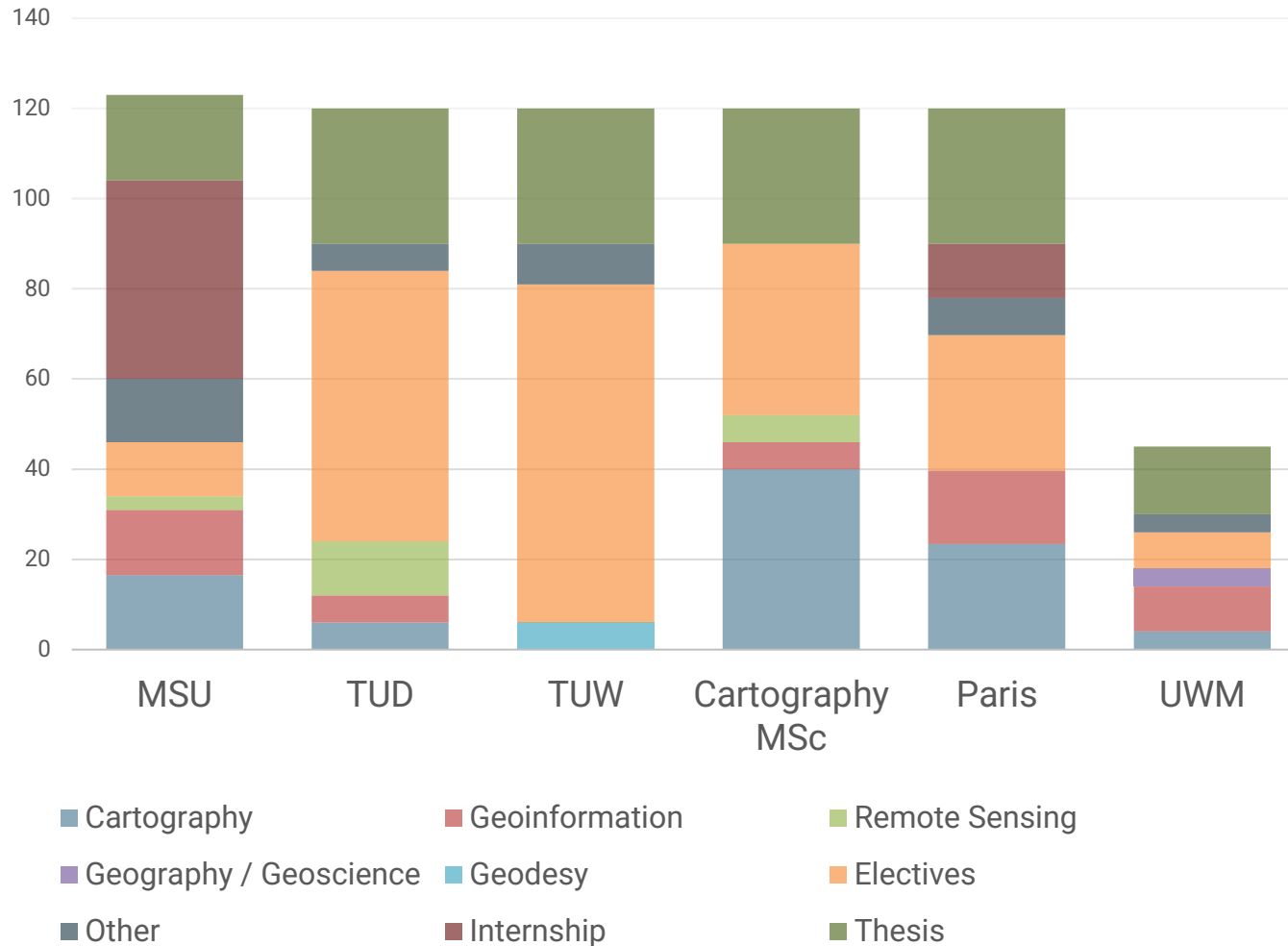
2009-2011



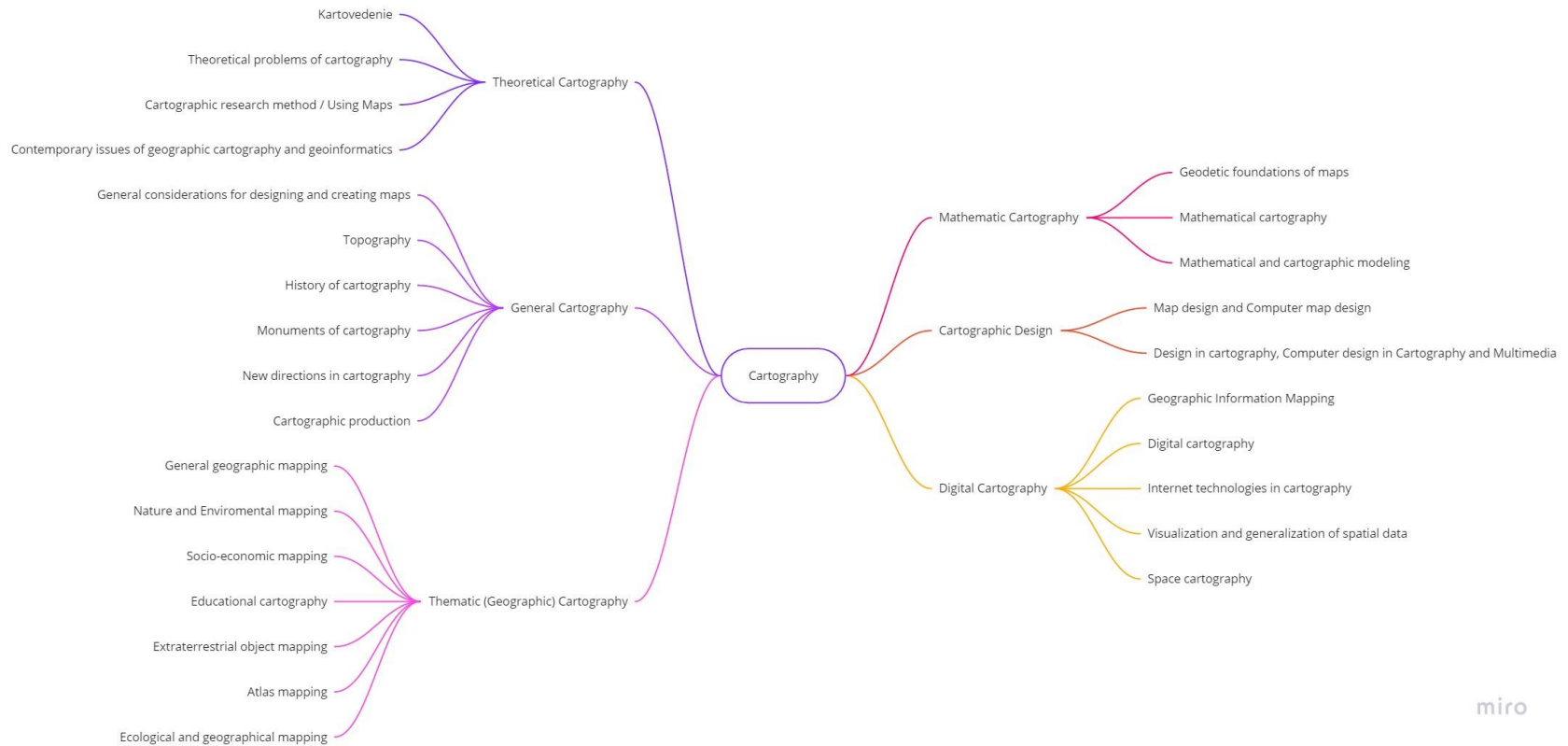


# Education – Master programs

2021

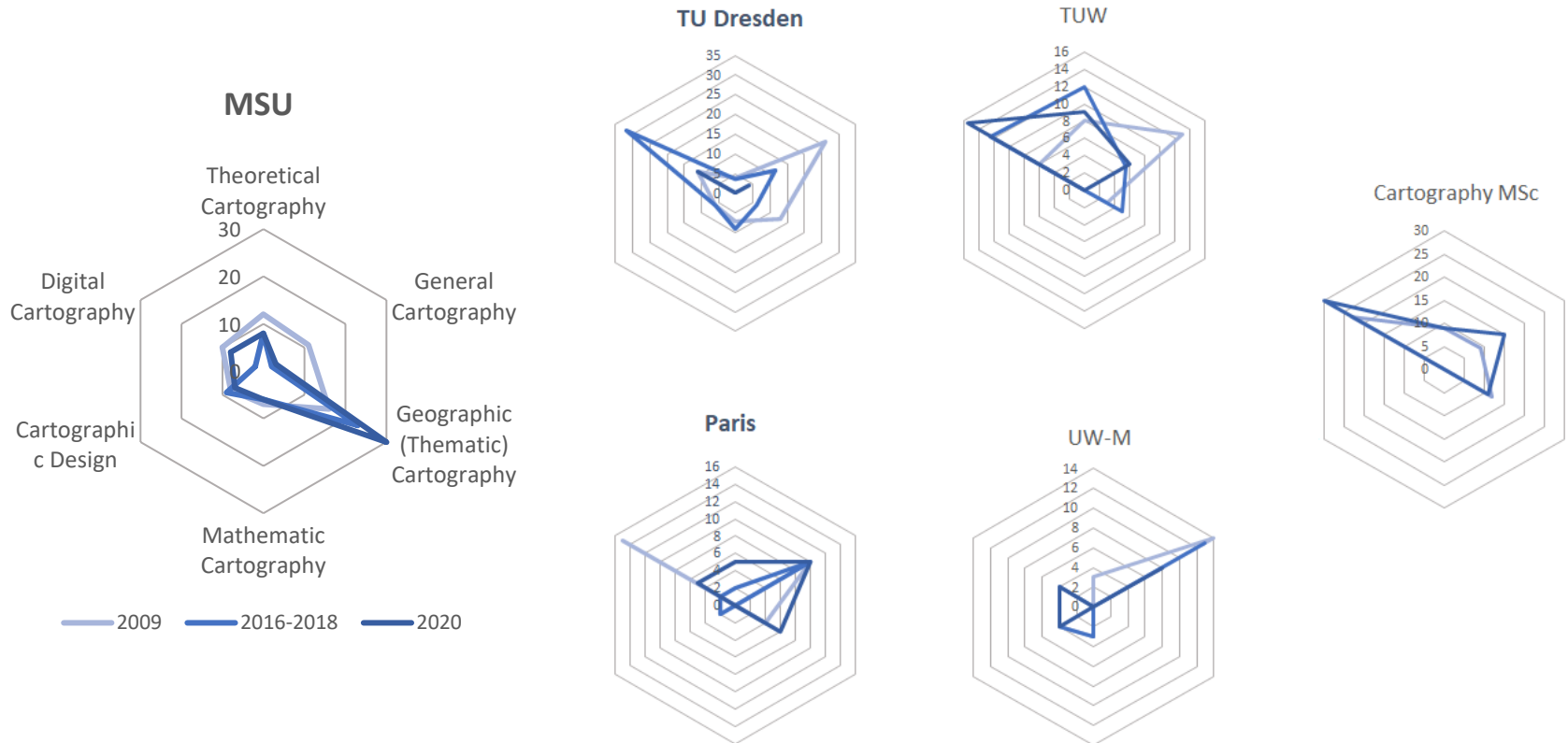


# Education – The Russian school

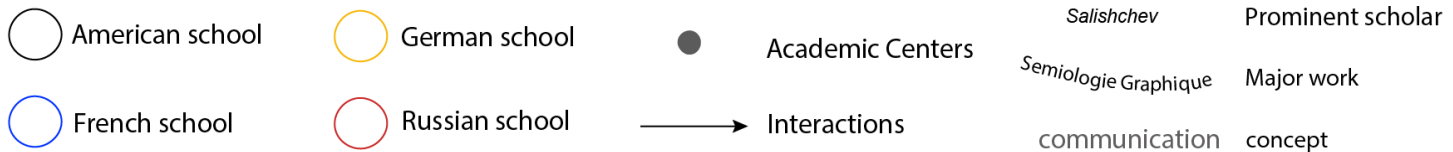
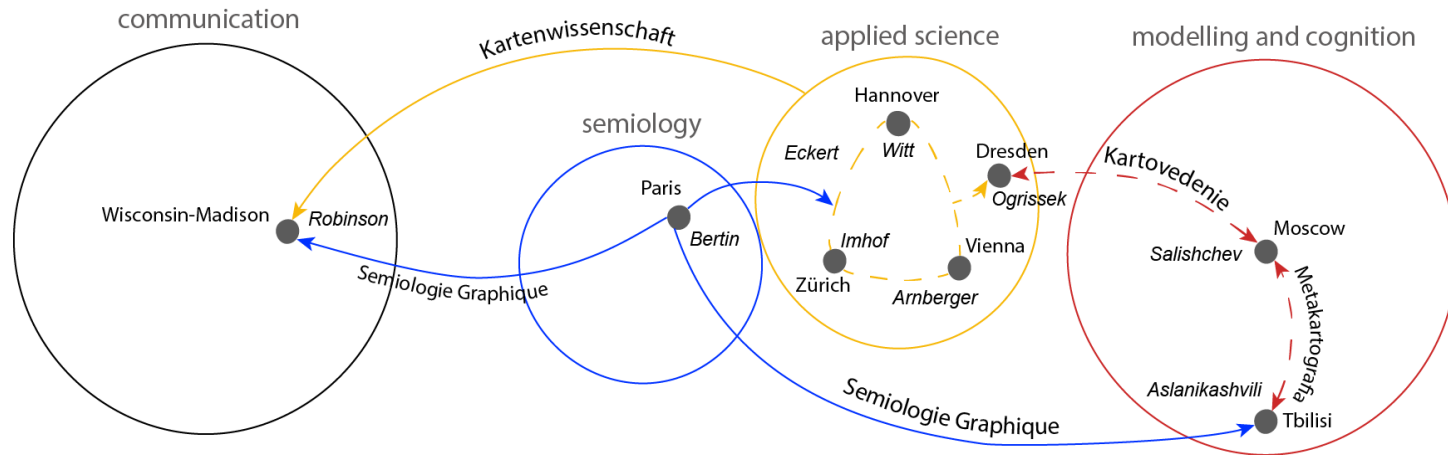


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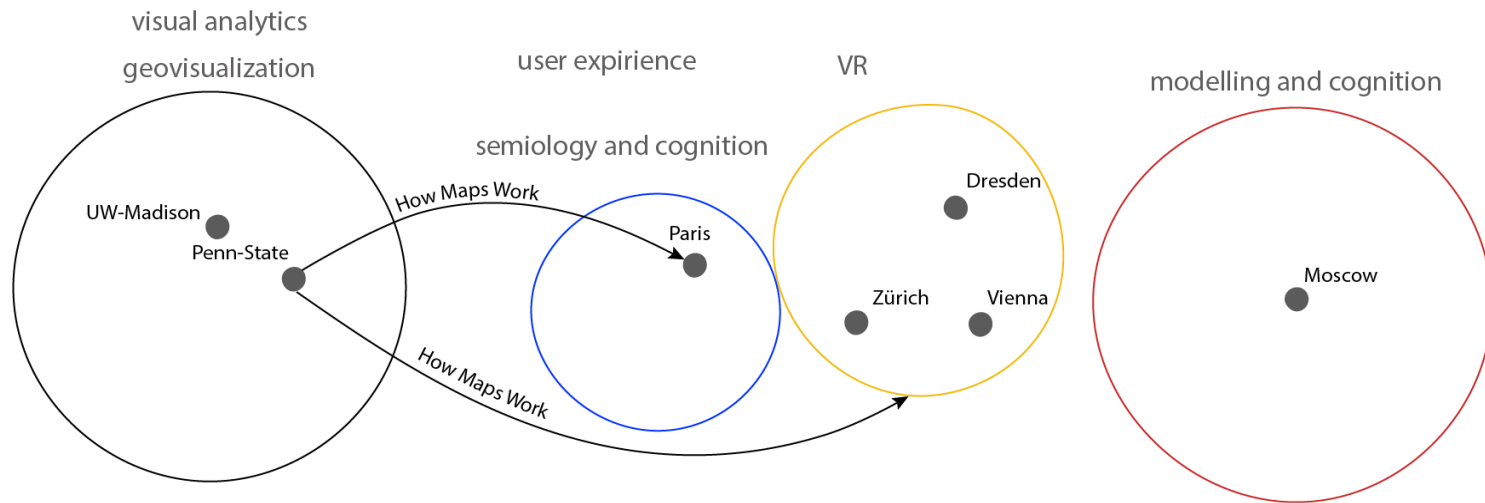
# Education – Cartography subjects in curricula



# Synthesis



# Synthesis



○ American school

○ German school

● Academic Centers

How Maps Work

Major work

○ French school

○ Russian school

→ Interactions

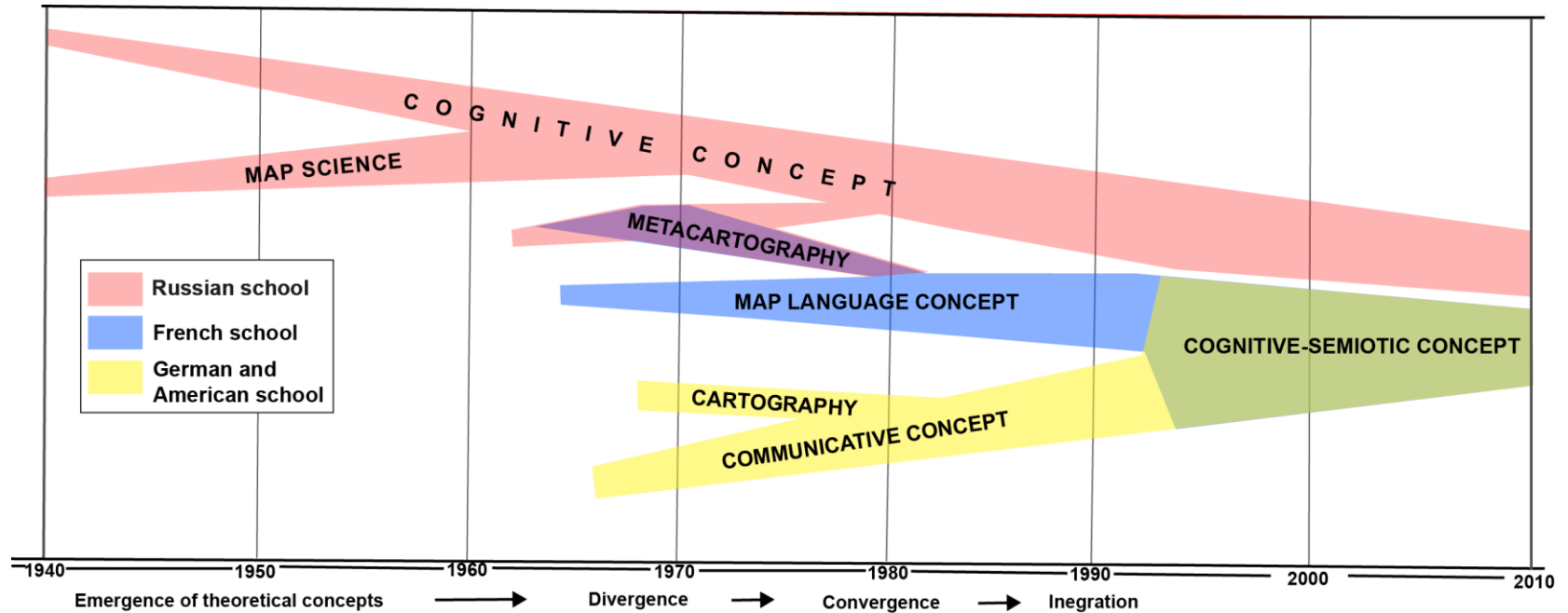
geovisualization

Concept

- The role of leaders in cartography is less significant nowadays – social and technological development.
- Technological development transforms schools of cartographic thought.
- The schools of cartographic thought nowadays are a kind of cultural lenses.
- The critical concept breaks the person-oriented view on a school of thought.

- The intended number of interviewees in an ideal case should be equal from each school.
- Interviewees still could be recognizable by their colleagues, but hardly by the general public.
- The choice of study programs for curricula analysis was depended on the old curricula availability.

# Conclusion



Adapted from Berlyant, 1994



# We hope...

...that this project facilitate the awareness of different approaches in cartography and stimulate the exchange the ideas between cartographers of the world...

...and more schools to be discovered...



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