Research methods 1

SIT – Iceland and Greenland: Climate Change and the Arctic

Monday, 6 March 2017

Dan Govoni

Return paper analysis 1

Don’t freak out

Don’t freak out

- Statistics

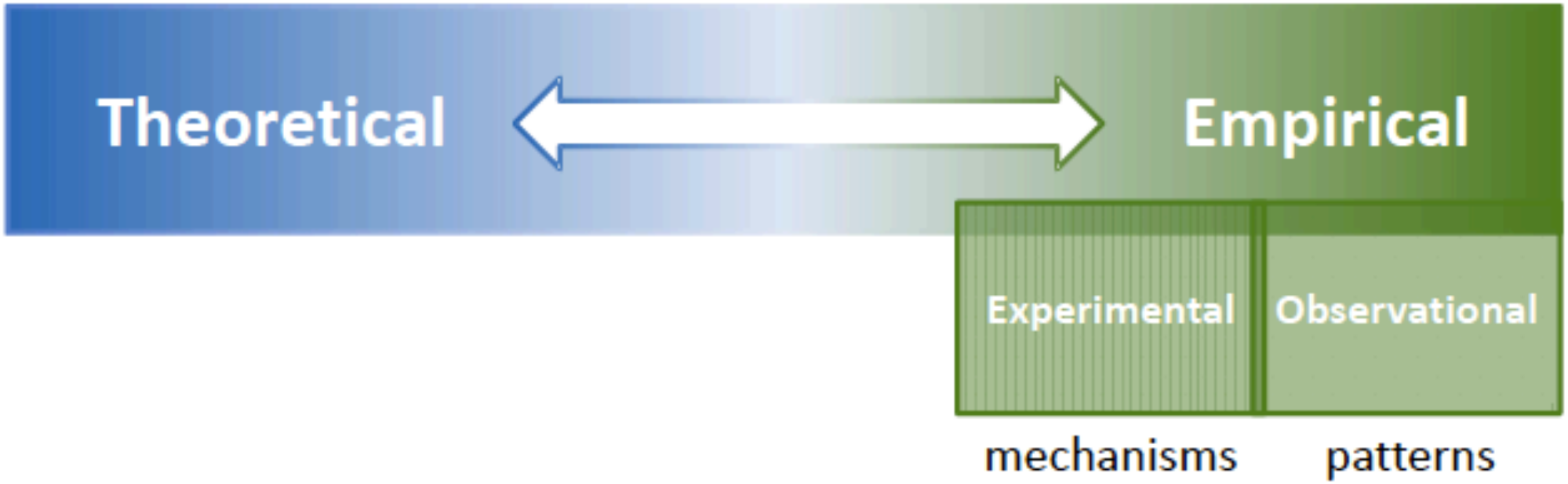
Science

- What is it?
- What kinds are there?
- How do we do it?

Social science

- Cat will do this

Natural science

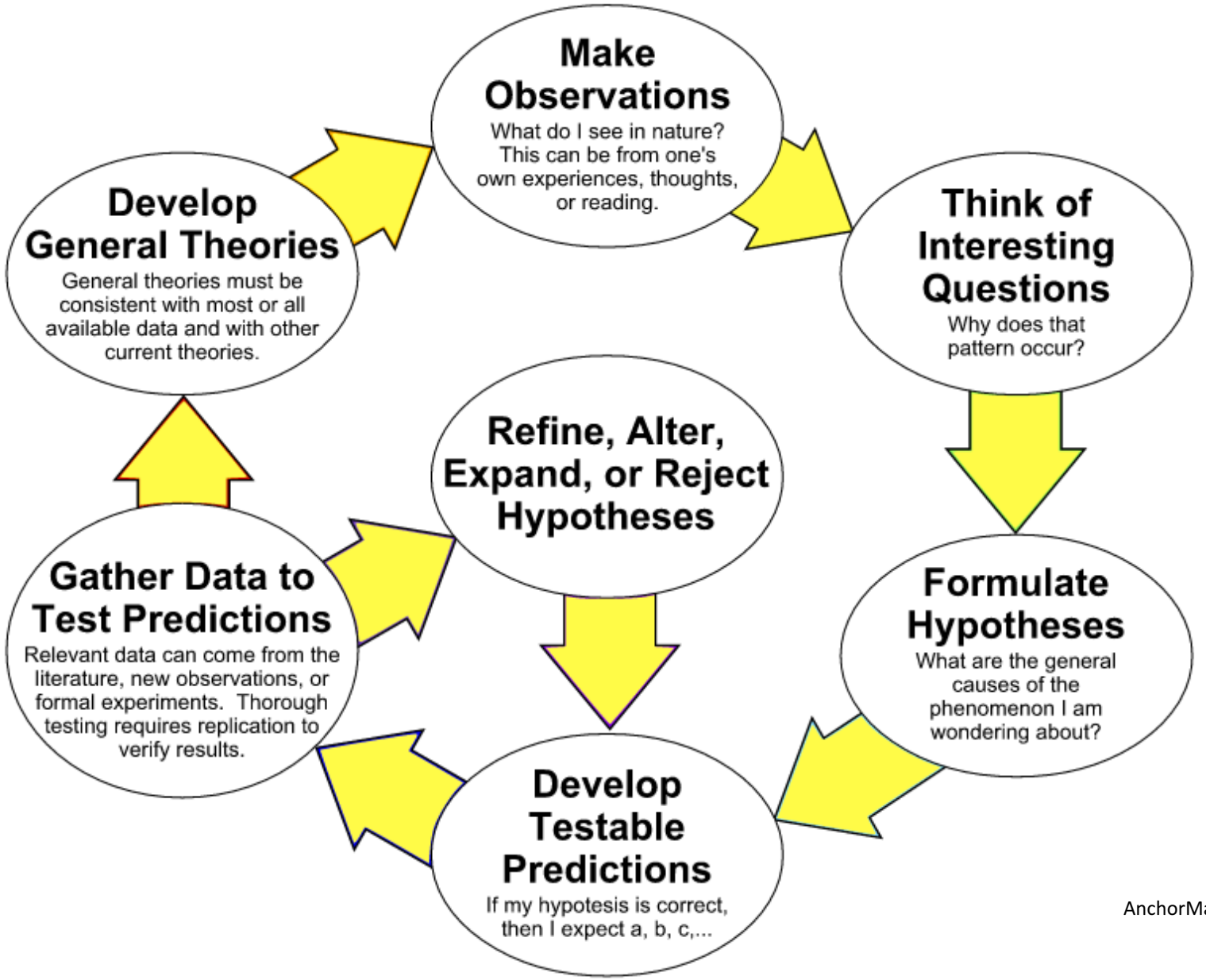


- mathematical properties of ecological systems
- scale unconstrained

- measured pattern and process
- scale constrained

Anne Beaudreau

The Scientific Method as an Ongoing Process



AnchorMagnus

ISP

- Use the rubric to your advantage

- Title/Acknowledgments/Abstract
  - It’s good to have a title for your project, but it will hopefully change by the end
    - Makes reference to specific findings
  - The Abstract should be the last thing you write

ISP:Research Questions/Objectives/Justification

- This can set you up to have a really successful project
- Should follow logically from Context and Literature Review
  - We'll come back to it

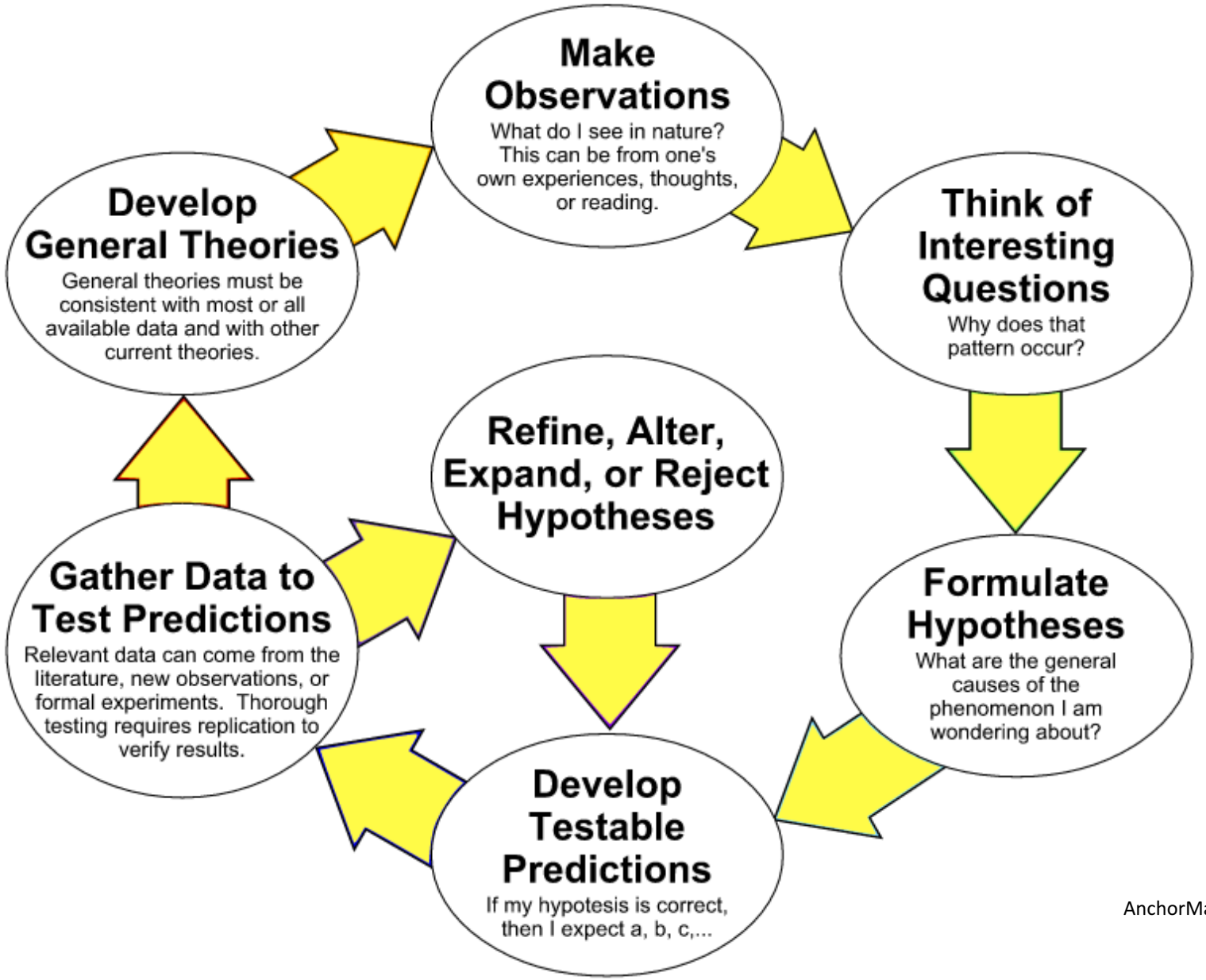
ISP: Context and Literature Review

- Context: content is relevant and puts the research question in its place in field and theory
- Literature review: appropriate, quality sources
- Funnel
- Plagiarism

ISP:Research Questions/Objectives/Justification

- Follows logically from Context and Literature review
- Developing a research question
  - Pick a topic with sufficient focus
    - Is “Glaciers of Iceland” a good topic?
  - Pick a question that’s not too broad or too narrow
    - What was the melting rate of Vatnajökull in 2015?
    - How does melting rate influence sediment load in glacial streams?
    - How do Icelandic glaciers respond to climate change?

The Scientific Method as an Ongoing Process



AnchorMagnus

Hypotheses

- What is a hypothesis?

Hypotheses

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  - An explanation for an observation or a set of observations

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- What is a hypothesis?
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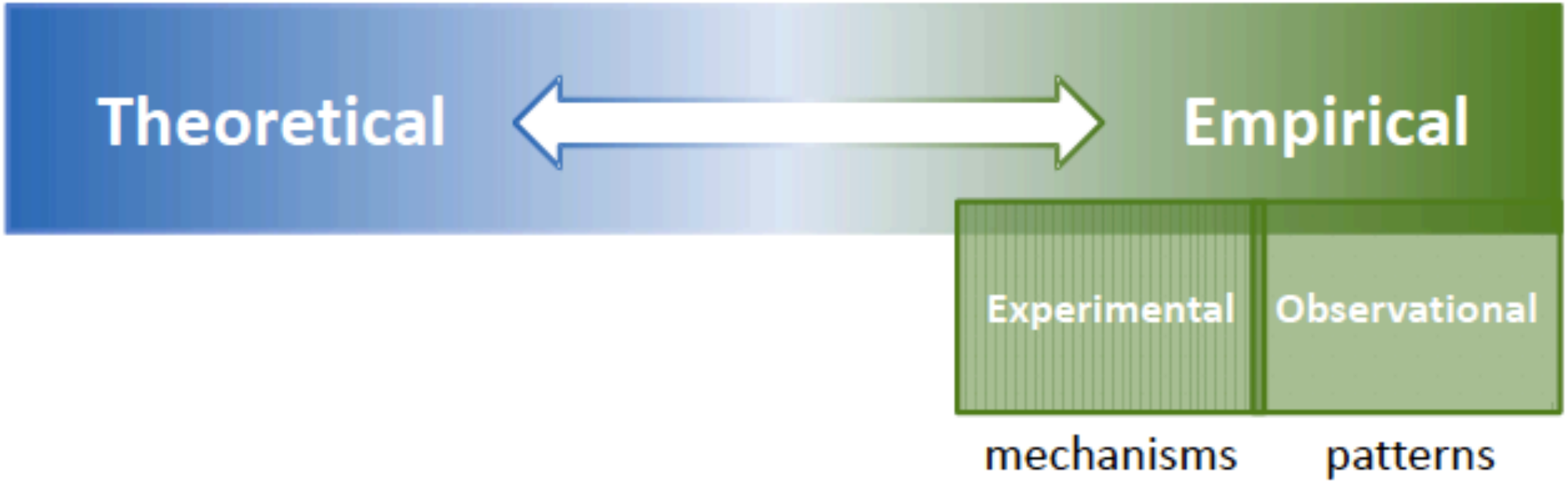
- Different from predictions; predictions are what we use to test hypotheses

Hypothesis exercise

- Tómas Gunnarsson
- Black-tailed godwits
- Migratory from UK, nest in wetlands

Pedro Lourenco

- Found pattern with some metric of success and volcanic deposition



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Methods

- Tomorrow

Ethics

- Someone else

ISP: Presentation of results/findings

- Nothing in the rubric about stats
- Patterns and observations can be reported
  - Important for testing hypotheses in the future

ISP: Depth of Analysis

- This section seems like it's basically the discussion and it links to conclusions

- Critically evaluate your objectives, questions, and/or hypotheses with reference to specific results

- What is the significance of this finding?
  - Does it support your hypothesis?
  - Does it answer your question?
  - Does it change the status of existing knowledge in the field?