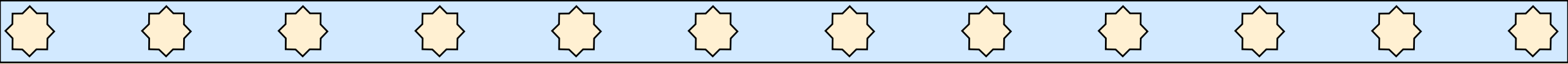# Scientific Method for Wikimedians
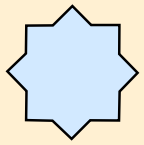
The State-of-the-art
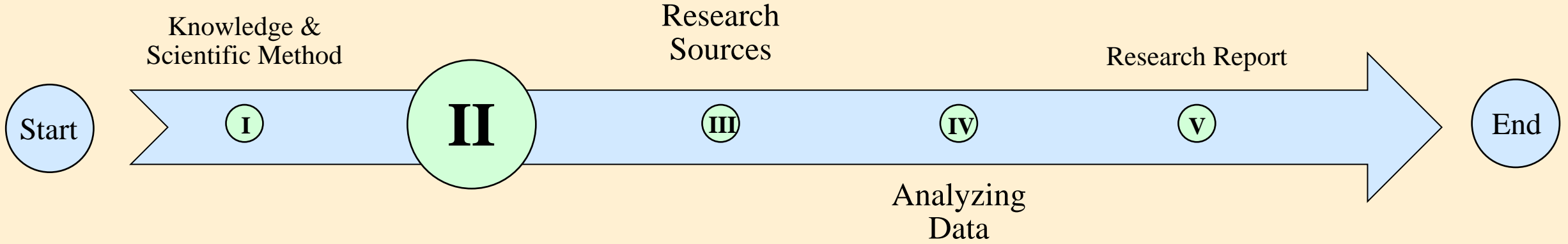
Michel BAKNI

2023

Course Structure

Knowledge & Scientific Method

Research Sources

Research Report

Start

I

II

III

IV

V

End

Analyzing Data
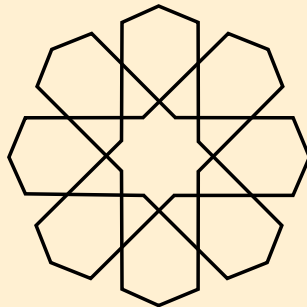
Part II: Research Plan
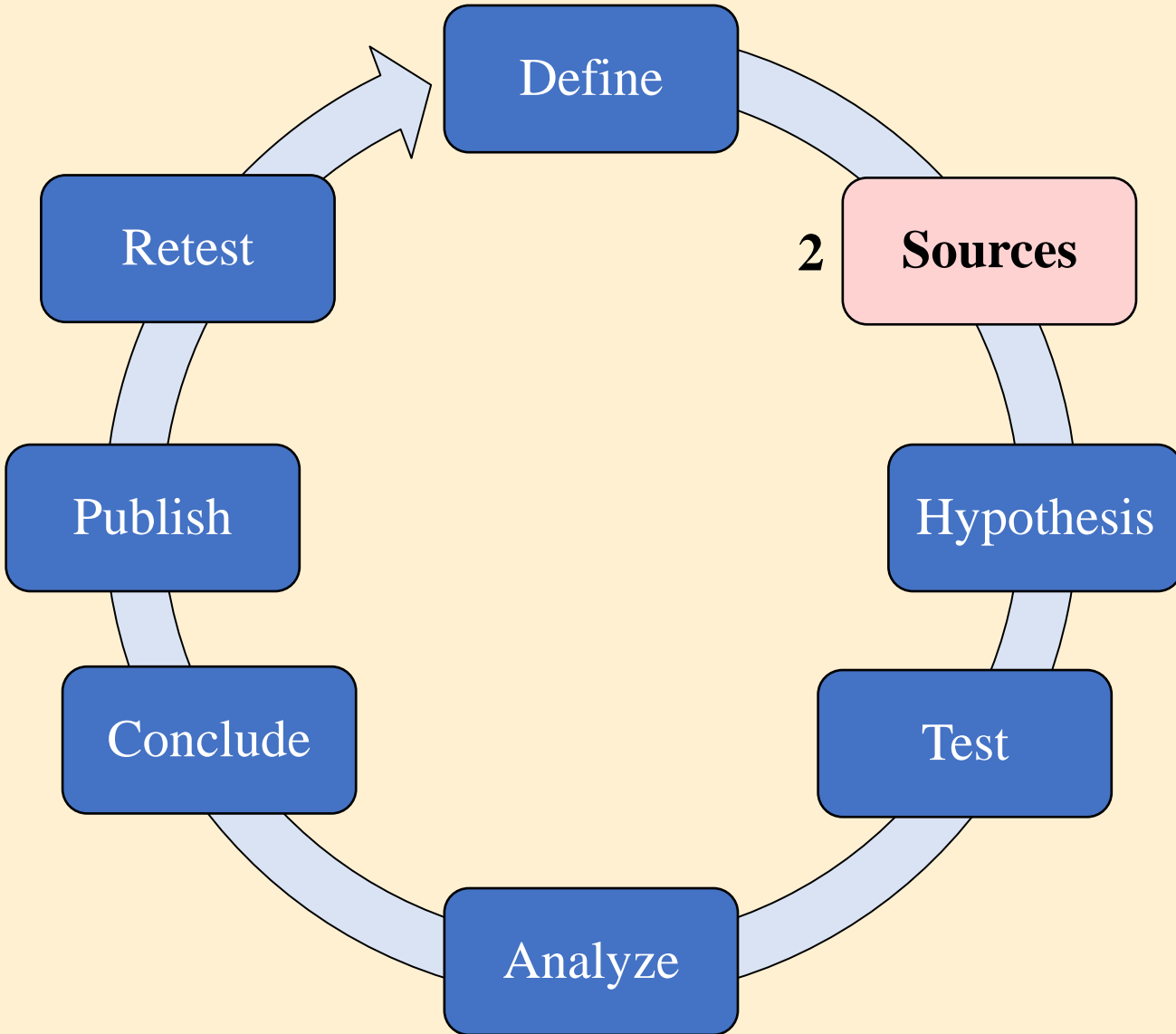
Chapter 6: Defining Research Question

Chapter 7: The State-of-the-art

Chapter 8: Designing a Research Method

Outlines

* **Reminder: Scientific method & card system**

* **What to include**

* **Objectives of the state-of-the-art**

* **Types of the state-of-the-art**

* **Special case: No previous studies**

* **What to avoid!**

* **How to do the state-of-the-art**

I Reminder: The scientific method

✹ **State-of-the-art**

- ✦ = Cutting edge or leading edge

- ✦ Latest achievement in domain

- ✦ Based on reliable sources

- ✦ Organizing & analyzing

- ✦ Cover always 1ˢᵗ part or chapter

- ✦ End with research question

I **Reminder: Card system**

✸ **Huge number of works**

✸ **Avoid repeated searches**

✸ **Today: completely automated**

✸ **Old way: post-it cards**

" **Science, to put ... and principles.** "

p. 53
Consilience : the unity of knowledge
Wilson, Edward O
ISBN: 978-0-679-76867-8

Reference Card

R15

Title: Consilience : the unity of know…
Author: Wilson, Edward O
Year: 1999
ISBN: 978-0-679-76867-8

Quotation Card

Q3

Science, to put ………………. …………………… and principles.
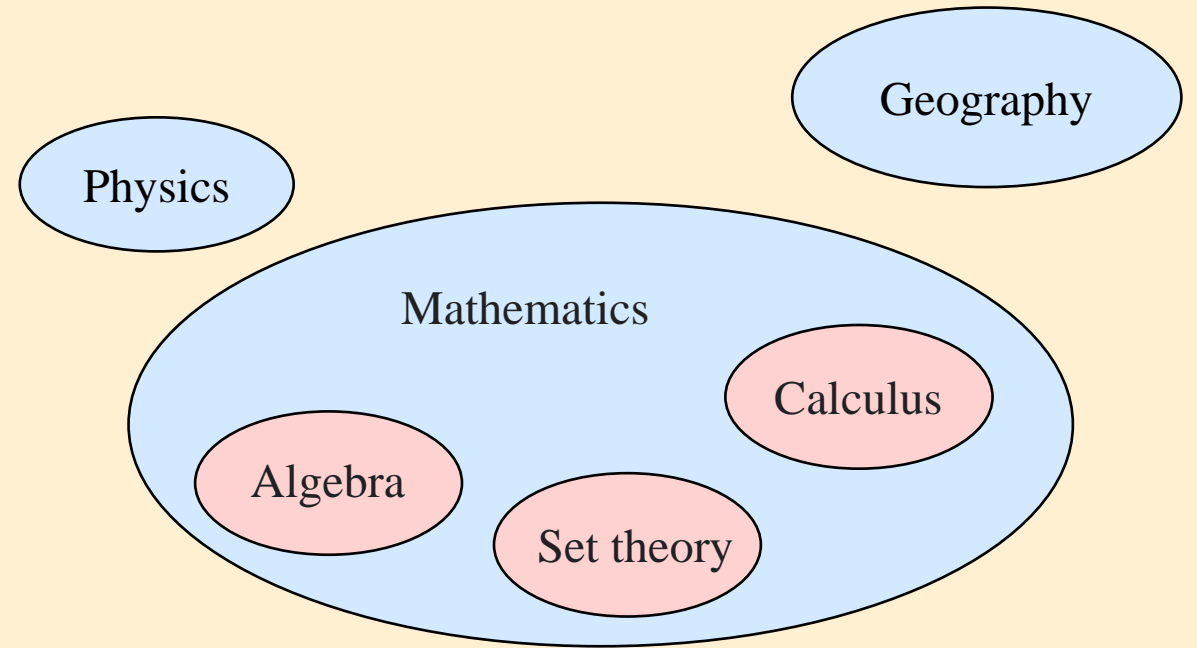
Page : 53
Reference ID: R15

II What to include

✴ **Human knowledge: vast**

  ✦ Detect domain

  ✦ Detect field(s) of interest

  ✦ Detect Categories

✴ **Example:**

  ✦ 1: outside domain

  ✦ 2: inside domain & outside filed(s) of interest

  ✦ 3: inside filed(s) of interest = closely related

II What to include

✸ **Example: Gender gap in English Wikipedia**

- ✦ Studies related to English Wikipedia only (1)
- ✦ Studies related to gender gab only (2)
- ✦ Studies related to gender gap in English Wikipedia (3)
- ✦ Studies related to knowledge gap only (1)
- ✦ Studies related to free content gap only (1)

⋮

✸ **Narrow to focuses on close & closely related only!**

✸ **Card system: Consider author extension**

Objectives of the state-of-the-art

✷ **Current status of the problem**

✷ **Current position: Human knowledge**

✷ **Discover general Context of the problem**

✷ **Discover Possible research methods**

✷ **Discover related sources & bibliography**

✷ **Establish problem timeline**

IV Types of the state-of-the-art

✷ **Two types of state-of-the-art**

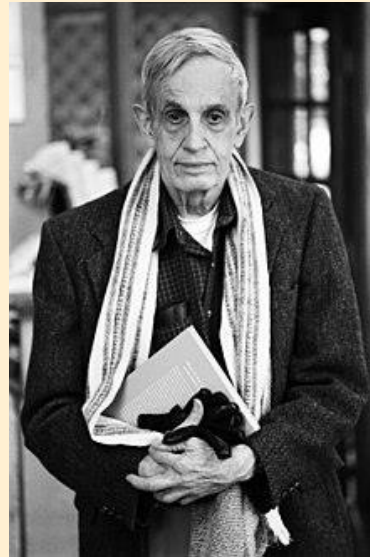|	Standalone	Integrated
Output	Standalone document	Part of scientific work
Contribution	Limited (mostly analysis)	Original (To be added later)
Data type	Bibliography	Natural, laboratorial, or answers to form questions
Publication	Survey article	Introduction & problem definition of scientific work

⬢V Special case: No previous studies
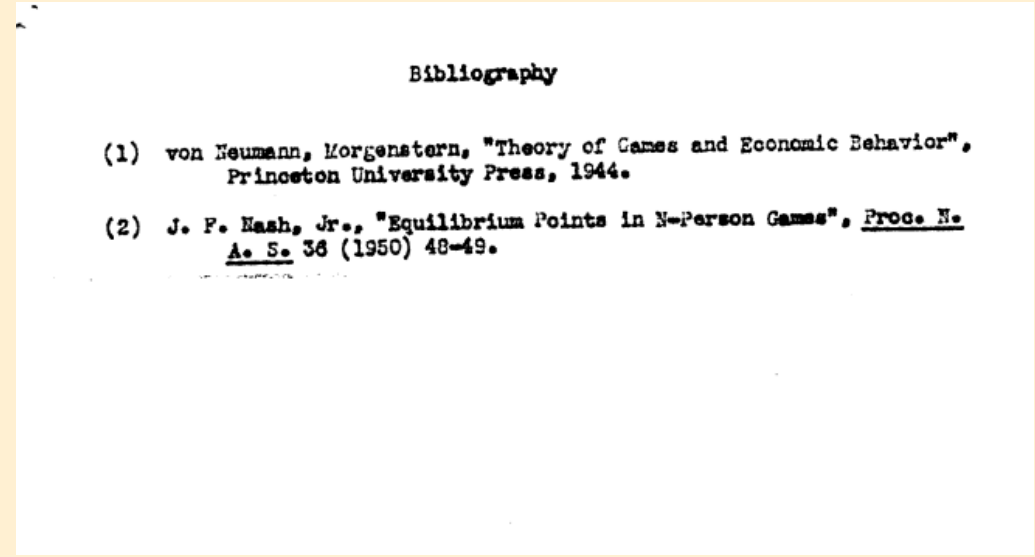
✴ **Rare but possible**

    ✦ John Nash

✴ **Language-specific**

✴ **Paid – not free**

✴ **Classified materials**

[Sandstein BY SA 3.0]   Nash Thesis (1950)

Bibliography

(1) von Neumann, Morgenstern, "Theory of Games and Economic Behavior", Princeton University Press, 1944.

(2) J. F. Nash, Jr., "Equilibrium Points in N-Person Games", Proc. N. A. S. 36 (1950) 48-49.

V **Special case: No previous studies**

✹ **If you there is no studies? What to do?**

    ✦ Chronological perspective: A timeline – **When?**

    ✦ Place/space perspective: **Where?**

    ✦ How we arrive here? **Who?**

    ✦ The problem itself – **What?**

VI What to avoid!

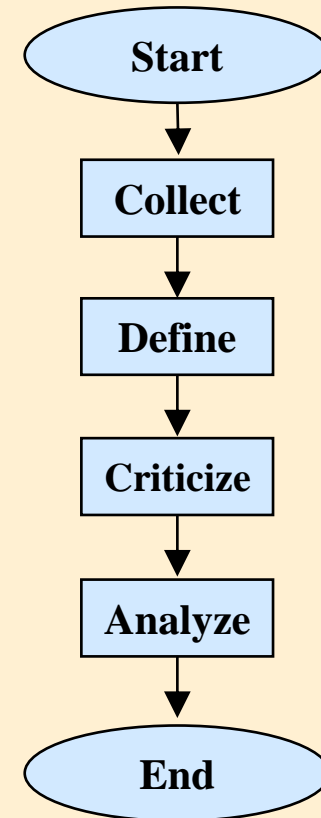✴ **Common mistakes you need to avoid:**

- ✦ State-of-the-art **is not a list** of previous studies

- ✦ State-of-the-art **is not creating abstracts** of previous studies

- ✦ State-of-the-art **is not a bibliographical section**

- ✦ Carefully **criticize the work** of others, **not others**!

VII How to do the state-of-the-art

✷ **4 steps to follow:**

❧ **Collect: related works**

❧ **Define: themes = outlines**

❧ **Criticize: critical thinking**

❧ **Analyze: explain findings**

✷ **Modify (redefine) the research question**

```
      Start
        │
        ▼
     Collect
        │
        ▼
     Define
        │
        ▼
     Criticize
        │
        ▼
     Analyze
        │
        ▼
       End
```

Course Title: Scientific Method for Wikimedians

Course Creator: Michel BAKNI

Video Title: The State-of-the-art

Film Editing :   Sandra HANBO

Date: March 2023

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