Organize ideas, structure narrative

Key Questions

- What is the hypothesis/problem/question?

- Why is it interesting?

- What answers are provided by current literature? How did they do it? Implications?

- Which particular studies are particularly interesting and why?

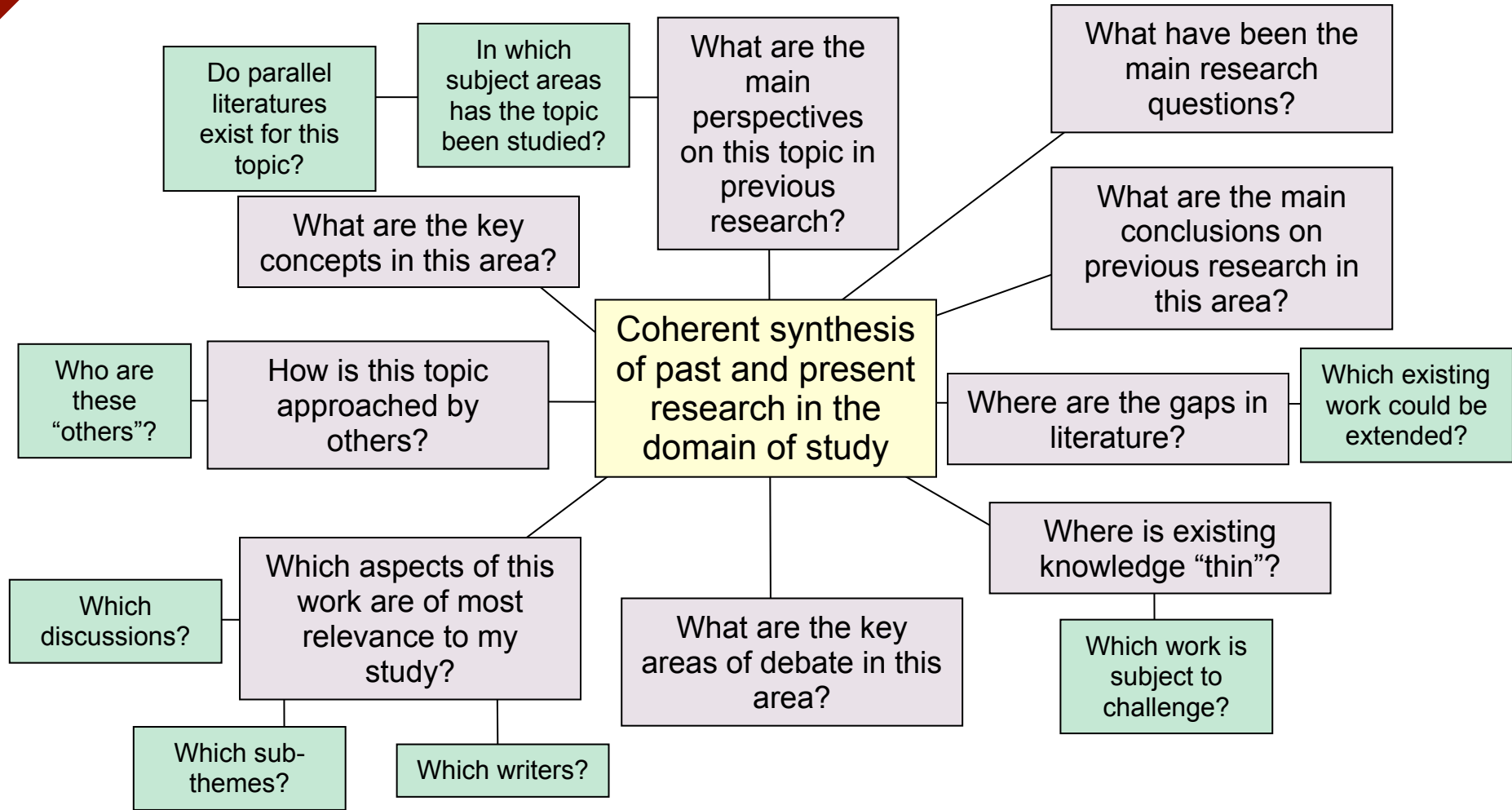- What is unsatisfactory about current literature? What remains unanswered?

Distill the answers into your synthesis

In other words:

What is your point?

More Questions

Do parallel literatures exist for this topic?

In which subject areas has the topic been studied?

What are the main perspectives on this topic in previous research?

What have been the main research questions?

What are the key concepts in this area?

What are the main conclusions on previous research in this area?

Coherent synthesis of past and present research in the domain of study

Who are these "others"?

How is this topic approached by others?

Where are the gaps in literature?

Which existing work could be extended?

Which discussions?

Which aspects of this work are of most relevance to my study?

What are the key areas of debate in this area?

Where is existing knowledge "thin"?

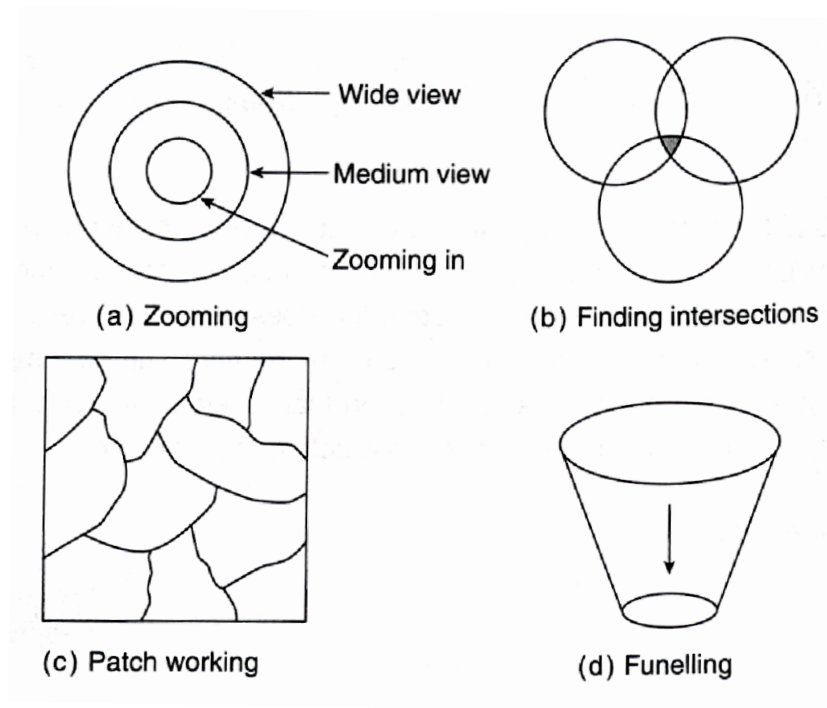Which sub-themes?

Which writers?

Which work is subject to challenge?

Typical structures

- Chronological

- Conceptual (e.g. pro/contra)

- Experimental/ Methodological

- Centered on Implications

But: remember your point!

(a) Zooming — Wide view, Medium view, Zooming in

(b) Finding intersections

(c) Patch working

(d) Funelling

Ridley, "The Literature Review", 2008

Examples

Write first draft

Know your reader

- **What can the reader be assumed to know?**

  - Read the journal editorial policy
  - Read similar articles published there
  - Err on side of caution, but avoid condescending or educational tone

- **For this course, assume that your reader is a colleague** (e.g. comp. biology master)

  - But keep a formal tone

The Title

- Signals the field and scope

- Includes your main point

- Arouses interest of the readers

The Abstract

- **Introduces field in 1-2 sentence(s)**

- **Motivates your review**

- **Announces important points** (reformulates subheadings and main point)

- **Includes relevant keywords** (for indexing)

The Introduction

- **Set the context from general to specific**
  - Show that the research area is important/interesting/relevant.
- **Establish a niche**
  - Show need for your work (the review)
- **Occupy the niche**
  - Announce your main point
  - Indicate structure of article

The Main Body

- **Use subheadings for each section**
  - One sentence summary/conclusion
  - Helps non-linear reading
- **If appropriate, use a figures and/or tables**
  - Review figs are often schema/cartoons
  - Use caption to make them self-descriptive

The Conclusion

- **Specific � general**
  - Mini summary
  - Broader implications, future directions

Drafting: outline

Introduction

Identity of research:

    This report will discuss using solid particles as the heat transfer medium in a solar central receiver. Requirements for such a heat transfer medium include

(1) Heat transfer medium must withstand temperatures up to 800°C
(2) Convective losses from medium must not be too high (define "too high")
(3) What else?

Reasons that research is important:

(1) Diversifies solar energy applications by obtaining higher temperatures than those obtainable from current designs
(2) Allows for high-temperature experiments and modeling

Background material (heat transfer media):

(1) *Water/steam*. Advantages: utilities familiar with; test data available. Disadvantages: not efficient enough; difficult to control in two-phase flow.
(2) *Molten Salt*. Advantages: relatively high heat capacity; high storage capacity; single-phase fluid. Disadvantages: freezing in pipes; corrosive nature.

Michael Alley, "The Craft of Scientific Writing", 1996, page 240

Drafting (con't)

- **Keep in mind that every claim needs to be backed by some evidence (in reviews, typically a reference)**

  - Either report the findings only
  - or paraphrase their approach and findings
  - or use quotations (do not distort context)

- **Best way to start writing is to start writing**

Beware of Plagiarism!

- If you include exact wording, use quotation marks and reference

- If you paraphrase, use a reference only

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Plagiarism

Notice for Students

(adapted from "Notice on dealing with plagiarism" issued on 30 April 2007 by the Teaching Committee, University of Zurich)

Decreed in November 2008 by the Rector, ETH Zurich[1]

(Full text linked from course homepage)

Tages Anzeiger

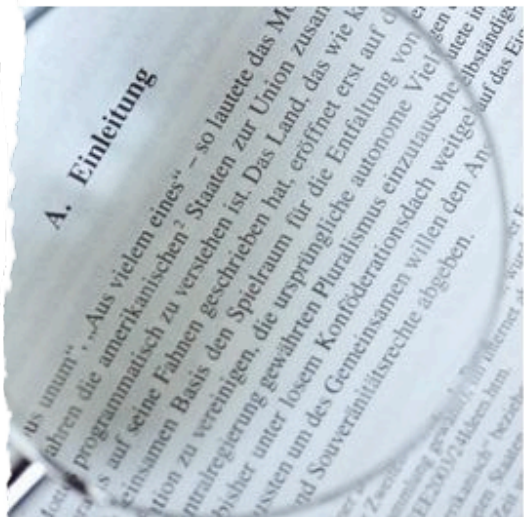**«Outdoor»:** Der Sportmarkt ignoriert Menschen ab 50. Schön blöd.

«Sweet Home on Sunday»: Ideen, Tipps, Rezepte – wir machen Frühlingslaune.

«Mamablog»: Ein Märchen von der guten Fee und den achtlosen Menschen.

Kantone starten Technologie-Offensive gegen Plagiate

Der Plagiatsvorwurf an Guttenberg bringt Schweizer Bildungsinstitutionen zum Handeln: Zehn Kantone ergreifen konkrete Massnahmen gegen Schummelschüler – mit Hilfe von modernster Technik. Mehr...

Wetter ▸   Heute in **Zürich**

🌧   🌡 3° C
🌡 6° C
🧭 5 km/h

Meistgelesen   **Mehr...**

1 «Wer nichts tut, macht mit»

2 Sportkommentator Hans Jucker ist tot

3 USA sehen Liechtenstein als Vorbild und die Schweiz als Sorgenkind

4 Ghadhafi setzt auf Zensur und Scharfschützen

5 Operation Lampedusa: Die Schweiz hilft mit

24-Stunden-Ticker

Demokratie im Vormarsch

Die arabische Revolution

Proteste und Demonstrationen überall: Alle News und Hintergründe zur Lage in Nordafrika, Arabien und Iran.

🗂 **Das Ende der Potentaten?**

Edit and revise

Improve Flow

- **Start each paragraph with a topic sentence**
  It signals paragraph content to the reader

- **Improve cohesion**
  Connect sentences through conjunctions, parallel structures, repeated keywords, pronouns, "old-new" pattern, etc.

- **Remove unneeded/redundant words**

Final checks

- **Spelling: use automated spell-checker (e.g. ispell) *and* proofread your text carefully.**

- **Verify one more time**

  - that references are accurate and complete
  - that each claim backed by citation
  - that your narrative is coherent
  - that the article meets editorial policy (in particular length requirements)

- **Ask a colleague for feedback on draft** (thank for his/her help in Acknowledgement section)

Resources

Diana Ridley, "The Literature Review", 2008

Rowena Murray "Writing for Academic Journals", 2004

Cargill and O'Connor, "Writing Scientific Research Articles: Strategy and Steps", 2009

Scott Montgomery, "The Chicago Guide to Communicating Science", 2002

Michael Alley, "The Craft of Scientific Writing", 1996

Reference shelf @ETH main library