

# Creating a structure for your literature review

Cassily Charles - for Digital Health CRC - May 2020

## Outline of the sessions - Part 1 + Part 2

- Introductions
- Purposes of the literature review
- How the purposes create a design problem for your structure
- Thinking about structure as writing *product*
- Real examples + one design solution
- Finding the gap
- Thinking about structure as writing *process*
- Stages towards a literature review structure
  1. Techniques for capturing richness of ideas and information
  2. Techniques for analysing, sorting and categorising
  3. Techniques for refining the lit review structure

# Introductions

- Cassily Charles  
Academic Literacy Coordinator - Research Office, CSU
- Now please introduce yourself in the text chat...  
What is your area of research/work?  
Where are you geographically located?  
Is your bunny/cat/ferret/parrot joining you for this session?

# Purposes of the literature review

- ▶ What is a literature review?      What does it do?
- ▶ How do its functions link to other parts of the thesis?

## Purposes of the literature review

- to demonstrate your understanding of the field
- to provide the context for your research
- to identify and explain key concepts or theories
- to identify patterns & trends in the research on the topic
- to evaluate other research & take a position in any debates
- to show a precedent for every part of your research aims
- to show a gap, which matches neatly to your aims

# Purposes of the literature review



The lit review builds the doorway for your research aims.

# Purposes of the literature review



- *a precedent for every part of your research aims*
- *a gap, which matches neatly to your aims*

# Purposes of the literature review



- *a precedent for every part of your aims (tight lintel stones)*
- *a gap, which matches your aims (exact-size door space)*



## Purposes of the literature review



After reading your finished literature review, the readers can accurately *predict* your research aims.

# Purposes of the literature review

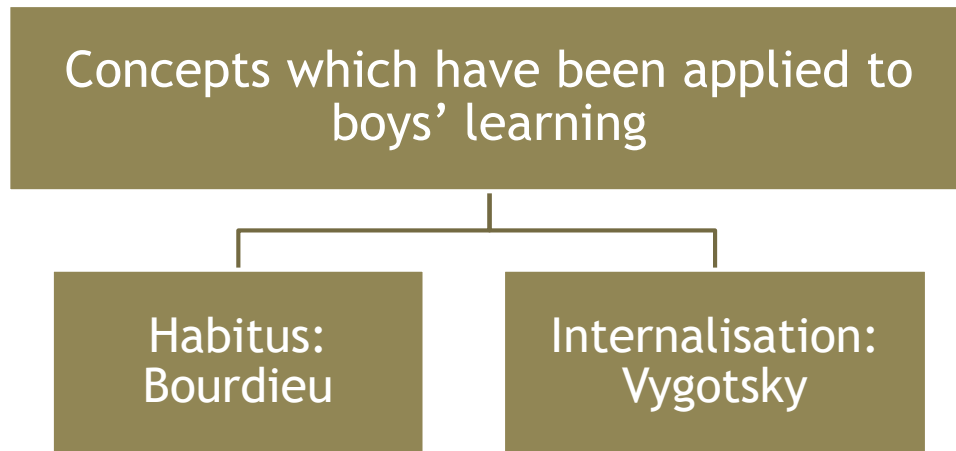
... a design problem for the structure of the chapter...

- to demonstrate your understanding of the field
- to provide the context for your research
- to establish key concepts or theories
- to identify patterns and trends in the literature
- to evaluate other research & take a position in any debate
- to show a precedent for *every part* of your research aims
- *to show a detailed gap, which matches your aims*

# Purposes of the literature review

... a design problem for the structure of the chapter...

A structure that can be both categorical and cumulative?  
Both a list/hierarchy and a story-path?



# Structure as a writing *product*

Some real examples

1.3. Outline.....	4
2. Dryland salinity and arbuscular mycorrhizal fungi.....	4
2.1. Introduction.....	4
2.2. Types of salinity.....	5
2.3. How salt affects plant growth.....	6
2.4. Managing and reversing the effects of dryland salinity.....	8
2.5. Arbuscular mycorrhizal fungi.....	10
2.5.1. Roles of arbuscular mycorrhizal fungi.....	10
2.5.2. Taxonomy and characteristics.....	11
2.6. The role of AMF in the amelioration of salt stress.....	13
2.7. AMF growth and morphology in saline environments.....	19
2.8. Investigating the diversity of AMF.....	20
2.9. Gene selection for amplification by PCR.....	23
2.10. Genetic diversity of AMF in saline environments.....	24
2.11. Conclusion.....	26

## Literature review: *Dryland Salinity and Arbuscular Mycorrhizal Fungi (AMF)*

- 2.1 Introduction
- 2.2 Types of salinity
- 2.3 How salt affects plant growth
- 2.4 Managing and reversing the effects of dryland salinity
- 2.5 Arbuscular mycorrhizal fungi
  - 2.5.1 Roles of arbuscular mycorrhizal fungi
  - 2.5.2 Taxonomy and characteristics
- 2.6 The role of AMF in the amelioration of stress
- 2.7 AMF growth and morphology in saline environments
- 2.8 Investigating the diversity of AMF
- 2.9 Gene selection for amplification by PCR
- 2.10 Genetic diversity of AMF in saline environments
- 2.11 Conclusion

## Structure as a writing *product*

Final heading of the literature review:

*Genetic diversity of AMF in saline environments*

Thesis title:

*The effect of dryland salinity on AMF in southern New South Wales*

# Chapter 3 - Literature Review - Interpretation and Design

## 3.0 Literature review Interpretation

- 3.0.1 Origins of interpretation literature
- 3.0.2 Practice-based literature
- 3.0.3 Research-based literature
- 3.0.4 Australian Literature

## 3.1 Issues in Interpretation

- 3.1.1 The rise of ecotourism environmental issues
- 3.1.2 Emotive issues and contested heritage

## 3.2 Literature review Design

- 3.2.1 Design - definitions and keywords
- 3.2.2 Shifts in design

## 3.3 Design discourse

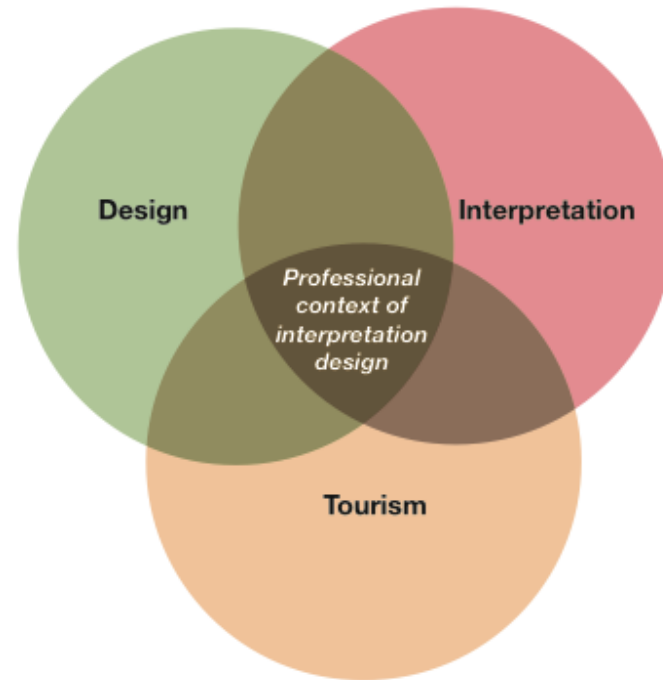
- 3.3.1 Social dimensions of graphic and communication design
- 3.3.2 Hybrid areas of design
- 3.3.3 Collaboration in design
- 3.3.4 'Wicked' and second generation problems
- 3.3.5 Australian graphic design

## 3.4 Literature on Interpretation design

## 3.5 Summary: literature review Interpretation and Design



# Finding the Gap



# Finding the Gap

*As part of my literature review, I have been reading several articles, but find it challenging to identify gaps. I am able to spot areas of further research in papers where authors indicate areas that need to be looked into further but am not able to link them [...]. How does one identify [the gap]? How does one create the originality? It seems challenging to me*



# Finding the Gap

How did you find / will you find / are you finding the gap in the literature?

- Many paths to the destination
- Quite contingent on context and how you have come to this research topic
- Some people begin from the top-down (Aims-driven)
- Some people begin from the bottom-up (Literature-driven)
- Ultimately, these must be aligned, but it takes *time*
- You can see this in different structure of the research proposal lit review/synopsis, compared to the structure of the final lit review chapter...

# Synopsis of literature from a research proposal (Environmental Sciences)

Introduction

Social justice

- Definition of social justice

- Different models for distributive and procedural justice

  - Distributive justice model 1

  - Distributive justice model 2

  - Procedural justice - social psychology

  - Procedural justice - power & participation

  - Interactive justice

Social justice in water governance institutions

Water governance in Australia

- National Water Initiative 2004

- National Plan for Water Security 2007

- Water for the Future 2008

# Synopsis of literature from a research proposal (Social Work)

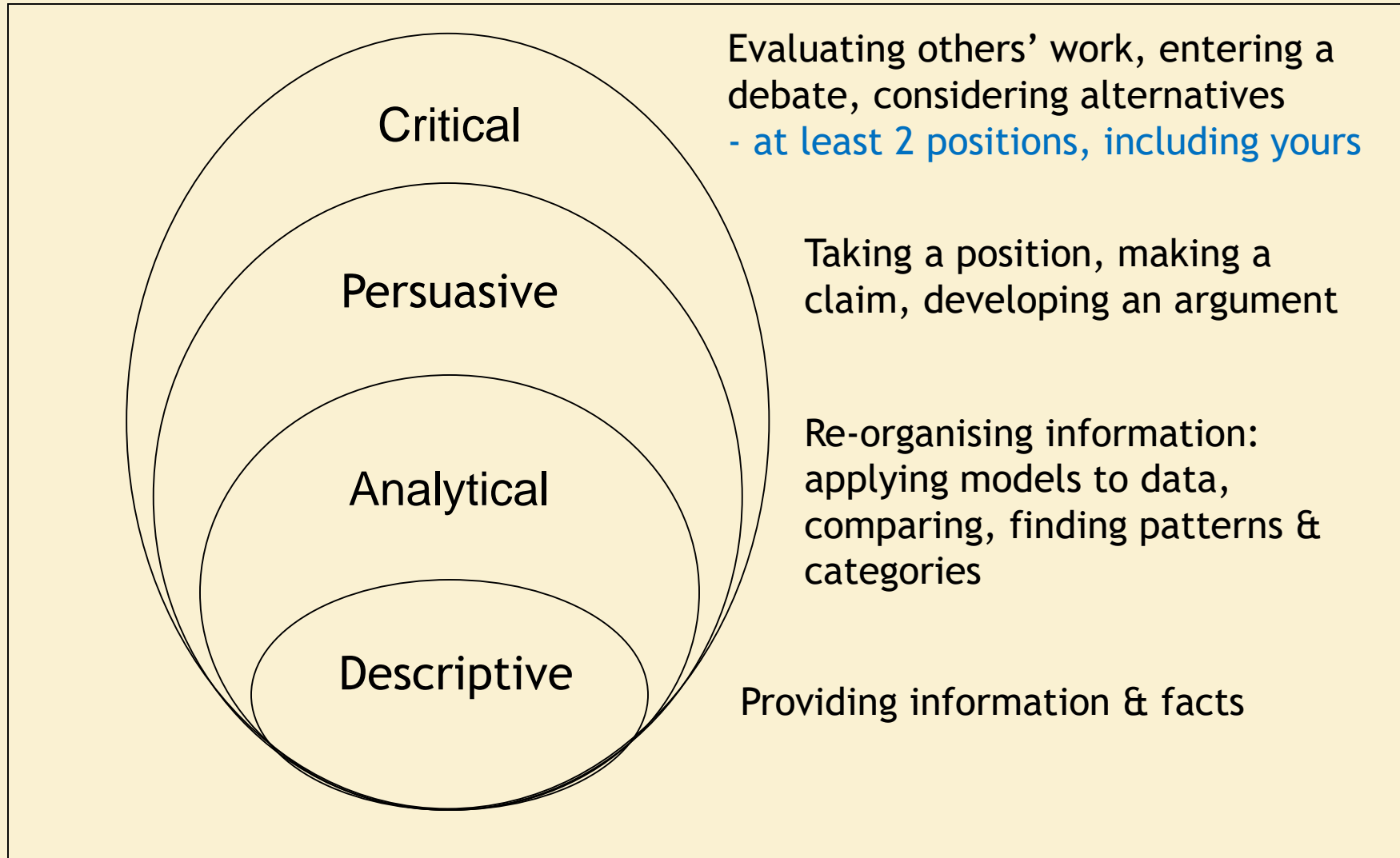
- The retention and continued professional development of social workers is a challenge
- Factors that contribute to the retention of social workers
- Importance of ongoing commitment to professional development
- Difficulties of implementing ongoing professional development of social workers in practice
- Research in other professions has focussed on the first year after graduation
- First year after graduation is important for professional development
- Various aspects of new social work graduates' experience are covered in the international literature
- Lack of recent Australian literature on the experiences of social workers in the first year after graduation
- Need to know more about what new social workers need for professional development in their first year

# Finding the Gap

How did you find / will you find / are you finding the gap in the literature?

- Many paths to the destination
- Some people begin from the top-down (Aims-driven)
- Some people begin from the bottom-up (Literature-driven)
- Ultimately, these must be aligned, but it takes *time*
- You can see this in different structure of the research proposal lit review/synopsis, compared to the structure of the final lit review chapter...
- It is time-consuming and often uncomfortable: *The fog journey*

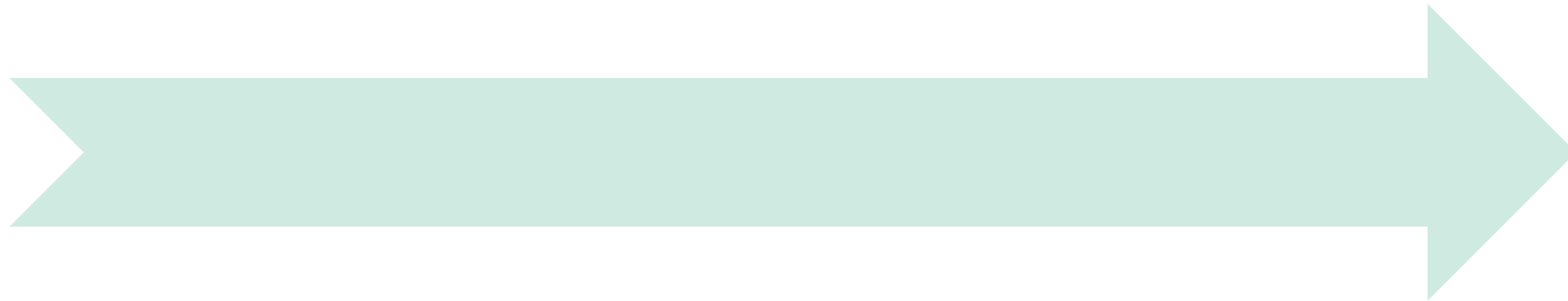
## The Onion model of academic writing





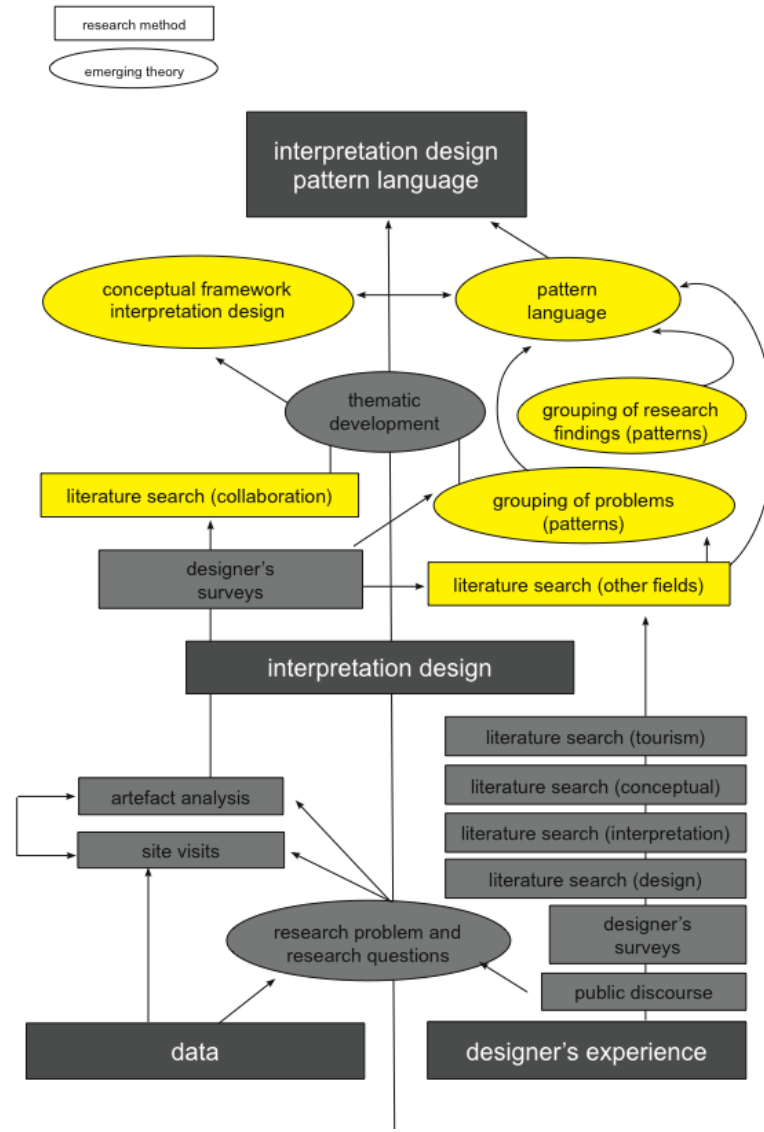
# Structure as a writing *process*

## Stages in conducting the literature review



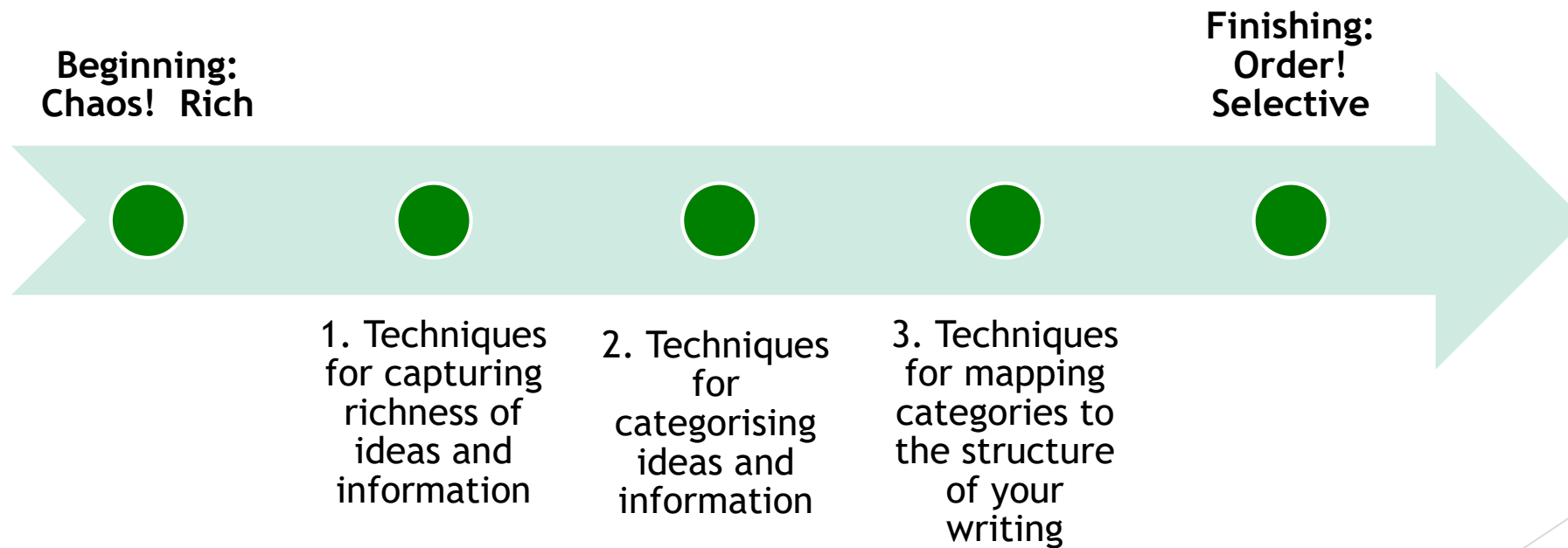
Just an aside, to acknowledge that...

The process of searching and analysing literature is complex, and will be interlinked with other research processes...



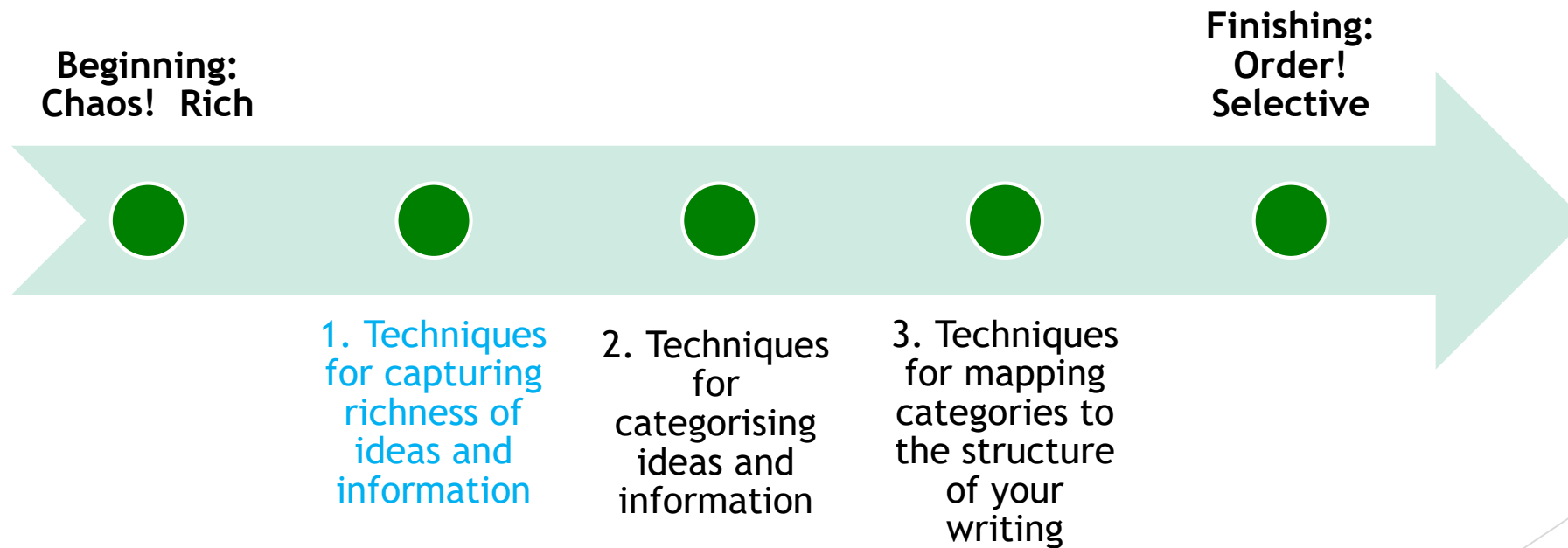
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# Structure as a writing *process*

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# Structure as a writing *process*

## Stages in conducting the literature review

### 1. Strategies for capturing rich ideas and information

- Mind-mapping

[http://en.wikipedia.org/wiki/List\\_of\\_concept-\\_and\\_mind-mapping\\_software](http://en.wikipedia.org/wiki/List_of_concept-_and_mind-mapping_software)

- Search plans / search tracking

<https://utas.libguides.com/SystematicReviews/Documenting>

- Written notes (formal/loose) or audio notes
- Free writing / Diarising
- Drawing or collecting images
- Tools such as Scrivener, OneNote, Nvivo, others ...?

# Structure as a writing *process*

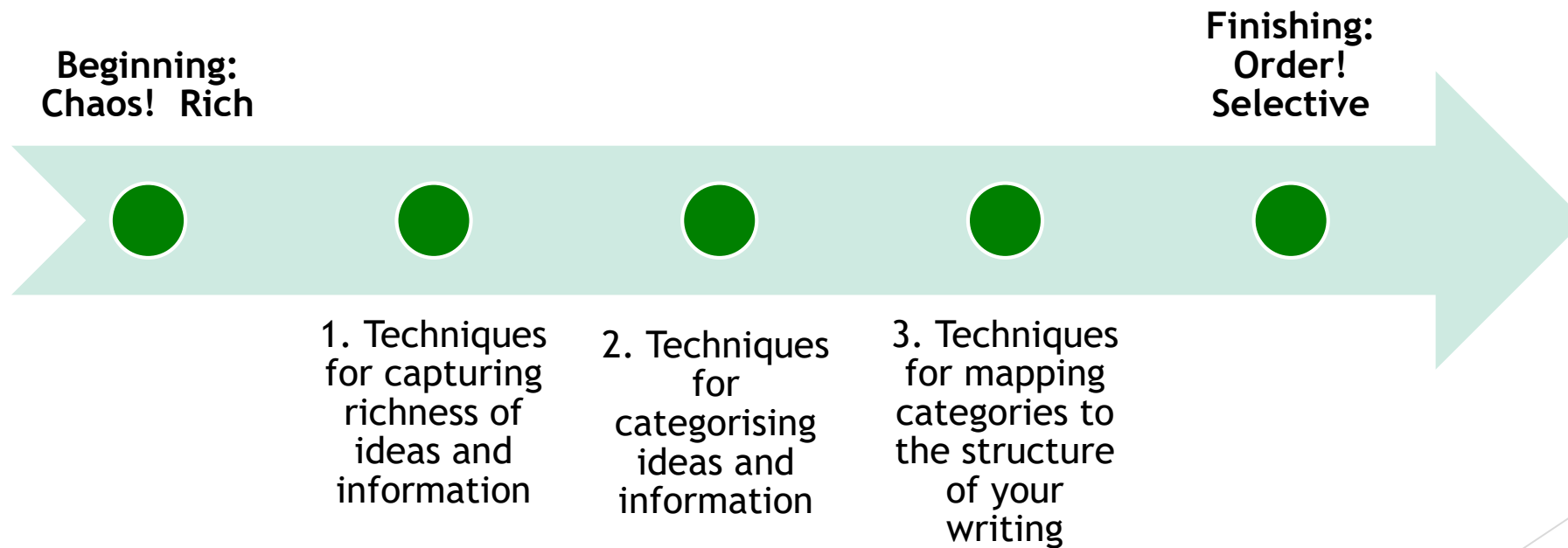
## Stages in conducting the literature review

### 1. Strategies for capturing rich ideas and information

- ▶ What other strategies or tools do you use?
- ▶ Are there new strategies or tools you plan to try?

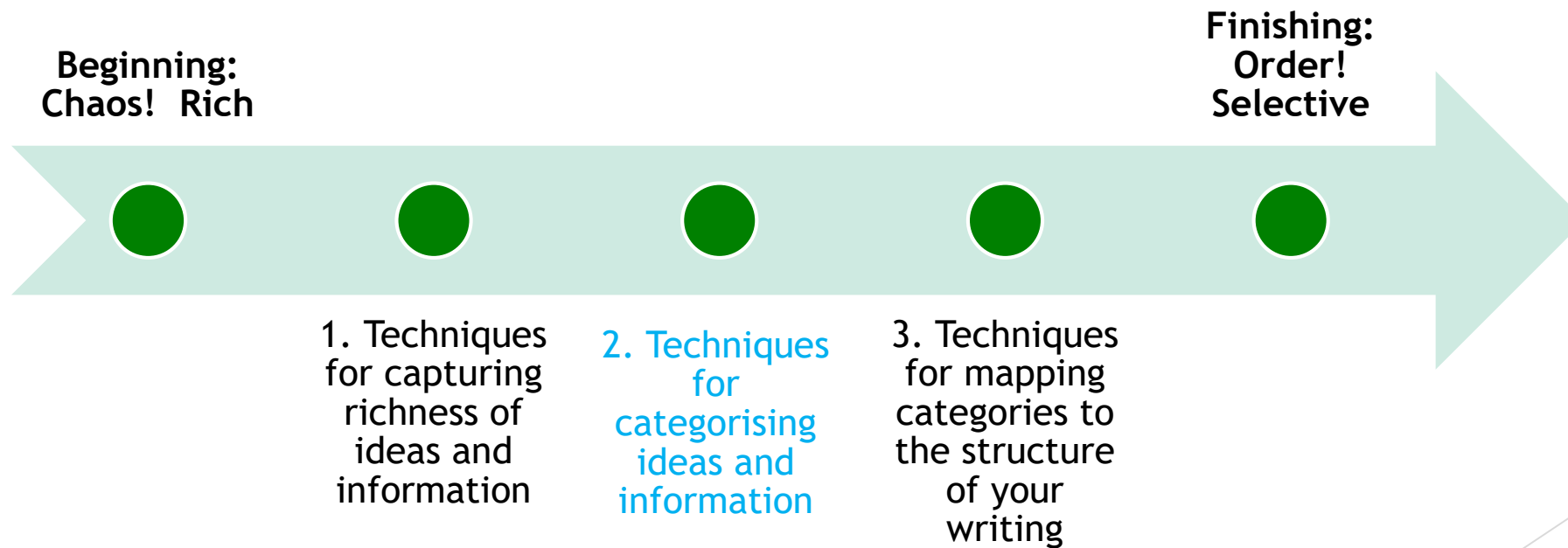
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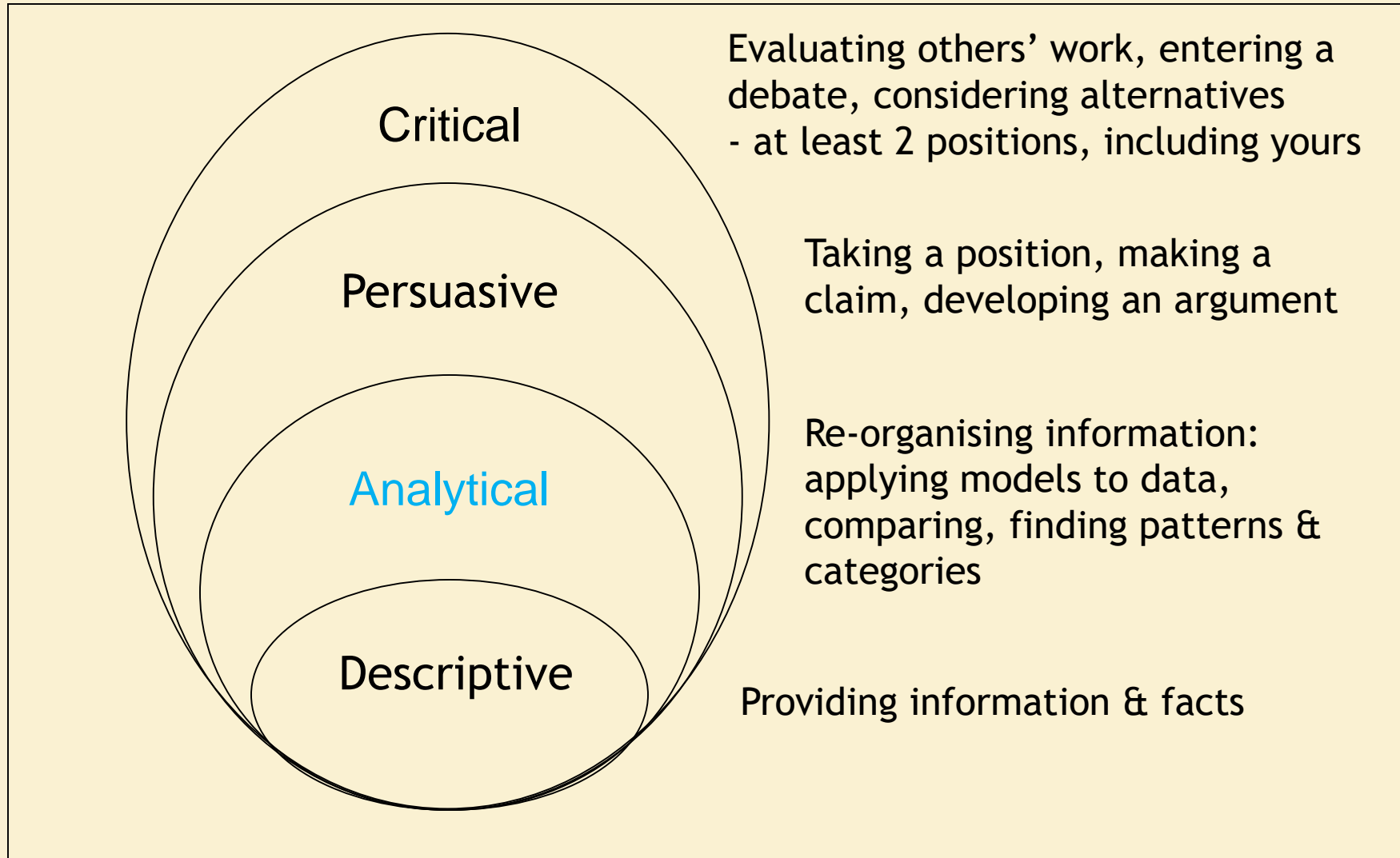
# Structure as a writing *process*

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## The Onion model of academic writing



# Structure as a writing *process*

## Stages in conducting the literature review

### 2. Strategies for categorising ideas and information

- Selecting and ‘pruning’ your mind-maps
- Paragraph labelling
- Physical sorting - e.g. piles or sticky notes
- Colour coding key themes in notes
- Tables - e.g. synthesis grid or thematic groups

# Margaret's tables

<b>Pattern: 2 Comfort</b> <b>Research findings and conclusion</b>	<b>Authors/ Study</b>
<ul style="list-style-type: none"><li>• Visual access increases confidence.</li><li>• Familiarity helps people feel more comfortable.</li><li>• Human sign is often reassuring.</li><li>• A small number of coherent areas makes a setting easier to understand.</li><li>• Successful museum learning requires visitor's sense of competence.</li><li>• Comfort includes orientation, providing amenities, making the museum's agenda clear, and always maximising the possibility that the intended interactions between the content of the museum and the visitor be as positive as possible.</li><li>• Visibility of exhibit: barriers to visibility reduce viewing times</li><li>• Object satiation and fatigue: Repetition of content of exhibit style is related to decreased attention.</li><li>• Proximity of exhibit: The closer visitors can get to exhibits, the longer they stay.</li><li>• Visitors should be in an environmentally comfortable setting, one which matches the human factor needs for sensory stimulation without aggressive affront to these senses, in the presence of design that works for them.</li><li>• Visitors need to feel free to move in the space of the museum and the exhibitions, to have their needs met, and to know where they are.</li><li>• Visitors want to feel safe.</li></ul>	Kaplan et al (1998)  Perry (1992)  Hein (2000)  Patterson and Bitgood (1998)  Olds (1990)

# Margaret's tables

<b>Pattern: 6 Variety/multi-sensory</b> <b>Research Findings</b>	<b>Authors/ Study</b>
<ul style="list-style-type: none"><li>• Sensory factors – Multi-sensory exhibits produce longer viewing times.</li><li>• Sensory competition – Exhibit stimuli compete for visitor attention.</li> <li>• A successful museum experience leading to learning includes play, whereby the visitor experiences sensory enjoyment and playfulness.</li> <li>• Access is increased by additional resources such as audio label, live interpretation, reference books, CD-ROM computer resources, or demonstrations.</li></ul>	Bitgood and Patterson (1998)  Perry (1992)  Hein (2000)

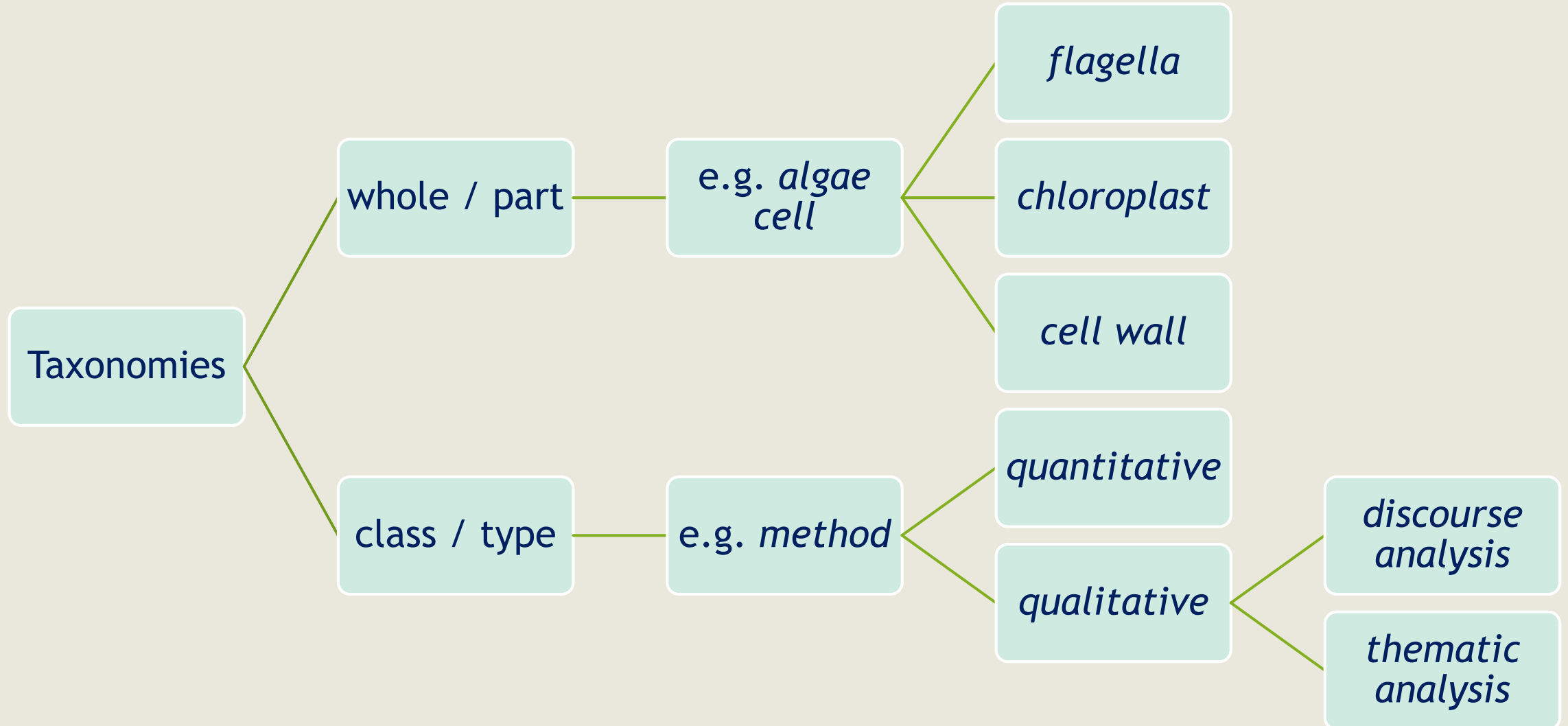
# Structure as a writing *process*

## Stages in conducting the literature review

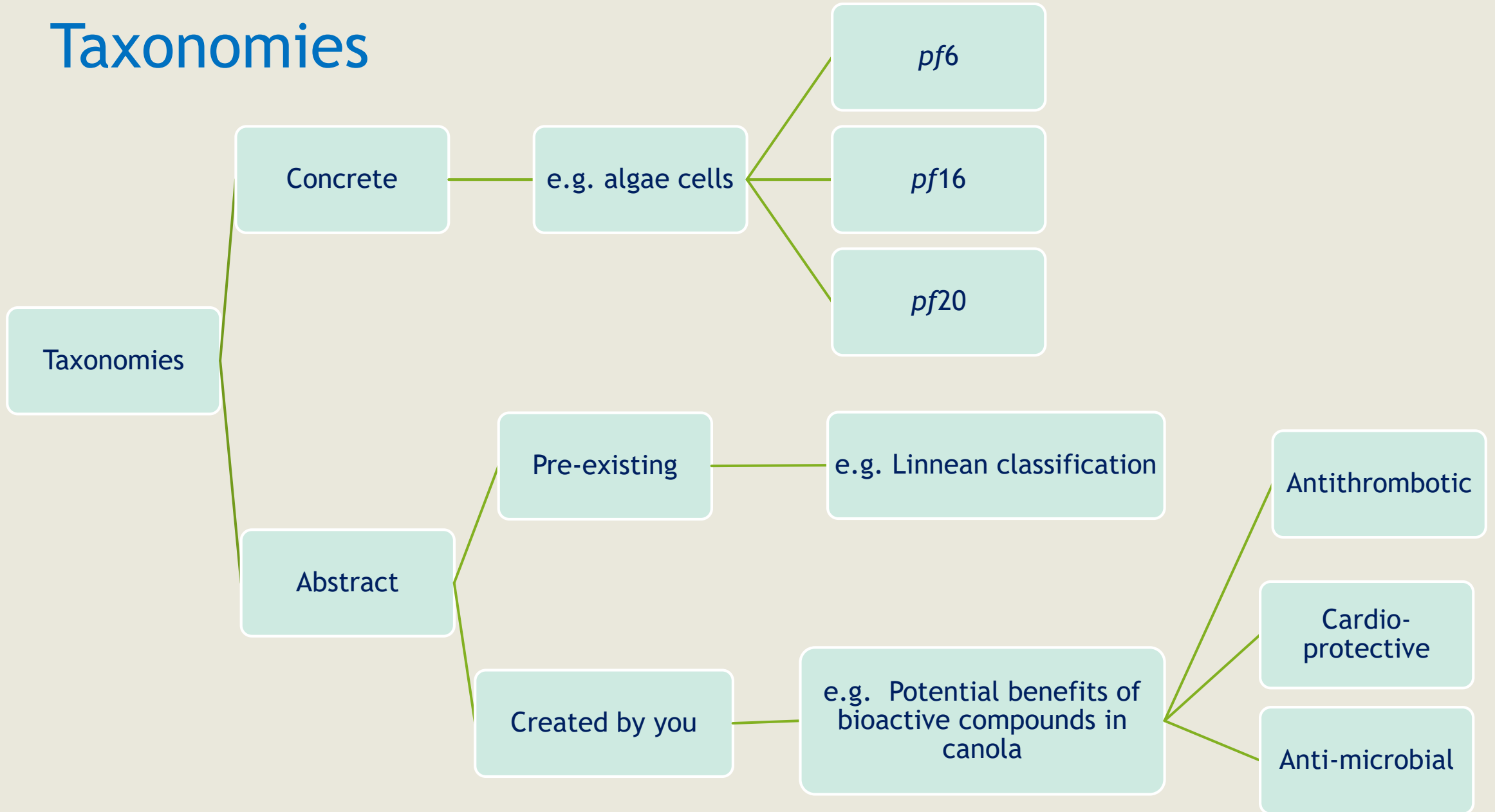
### 2. Strategies for categorising ideas and information

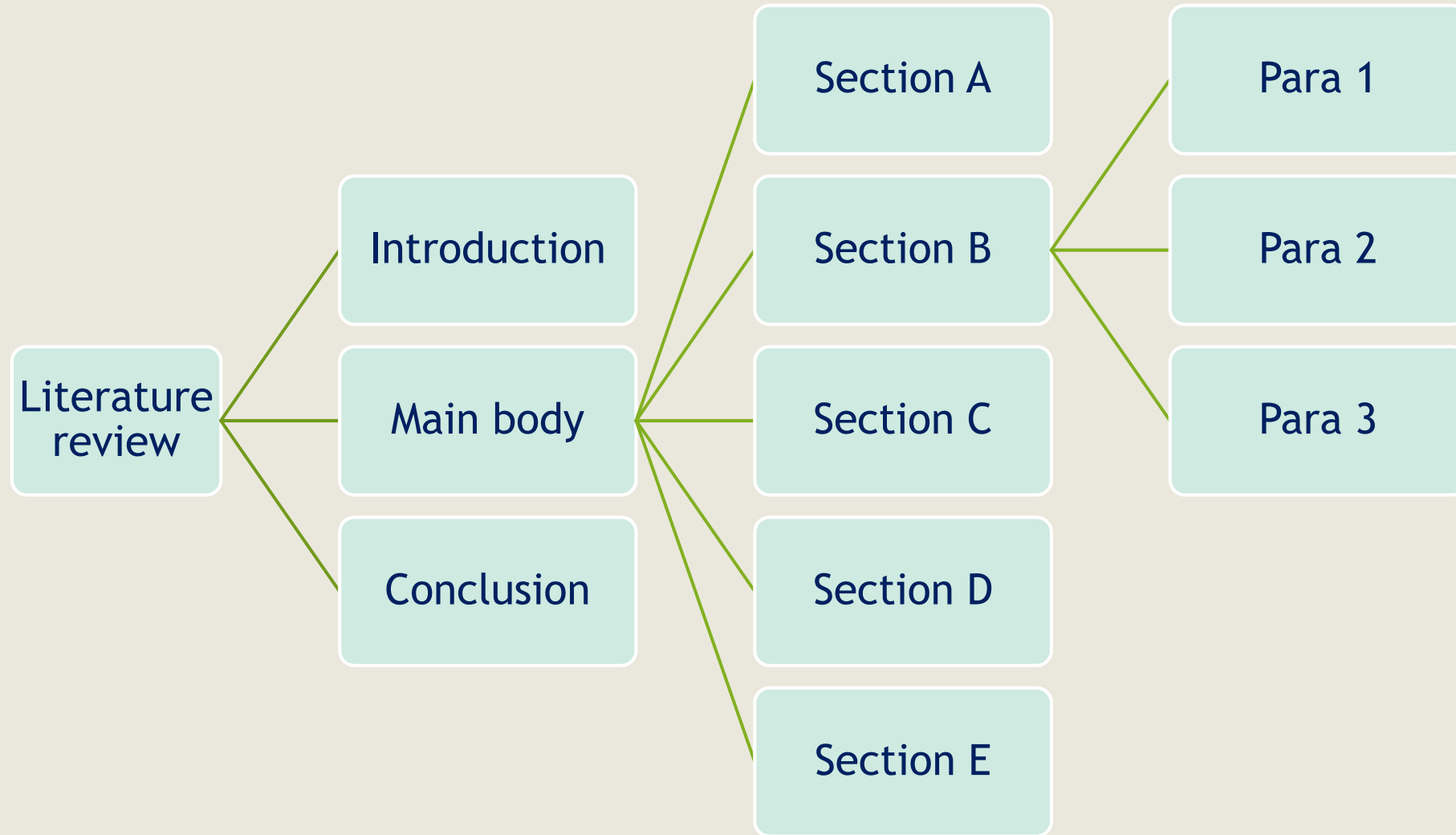
- Tweaking, combining and ‘pruning’ your mind-maps / NVivo
- Paragraph labelling
- Physical sorting - e.g. piles or sticky notes
- Colour coding key themes in notes
- Tables - e.g. synthesis grid or thematic groups
- Tagging articles in Endnote
- Taxonomies - e.g. part/whole or class/type (taxonomy = analytical framework)

# Taxonomies



# Taxonomies







# Structure as a writing *process*

## Stages in conducting the literature review

### 2. Strategies for categorising ideas and information

- Selecting and ‘pruning’ your mind-maps
- Paragraph labelling
- Physical sorting - e.g. piles or sticky notes
- Colour coding key themes in notes
- Tables - e.g. synthesis grid or thematic groups
- Tagging articles in a database / Endnote / Scrivener
- Taxonomies - e.g. part/whole or class/type (taxonomy = analytical framework)
- **Work backwards from the gap**

# Synopsis of literature from a research proposal (Social Work)

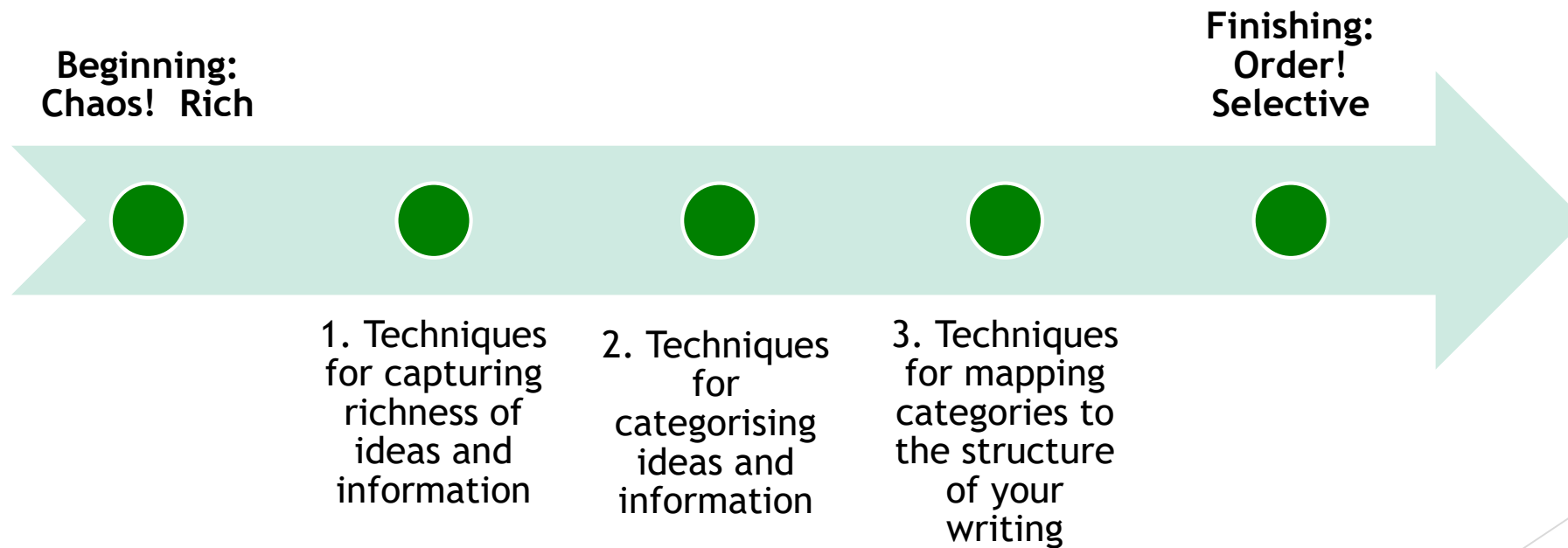
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- First year after graduation is important for professional development
- Various aspects of new social work graduates' experience are covered in the international literature
- Lack of recent Australian literature on the experiences of social workers in the first year after graduation
- *Need to know more about what new social workers need for professional development in their first year*

# Working backwards from the Gap



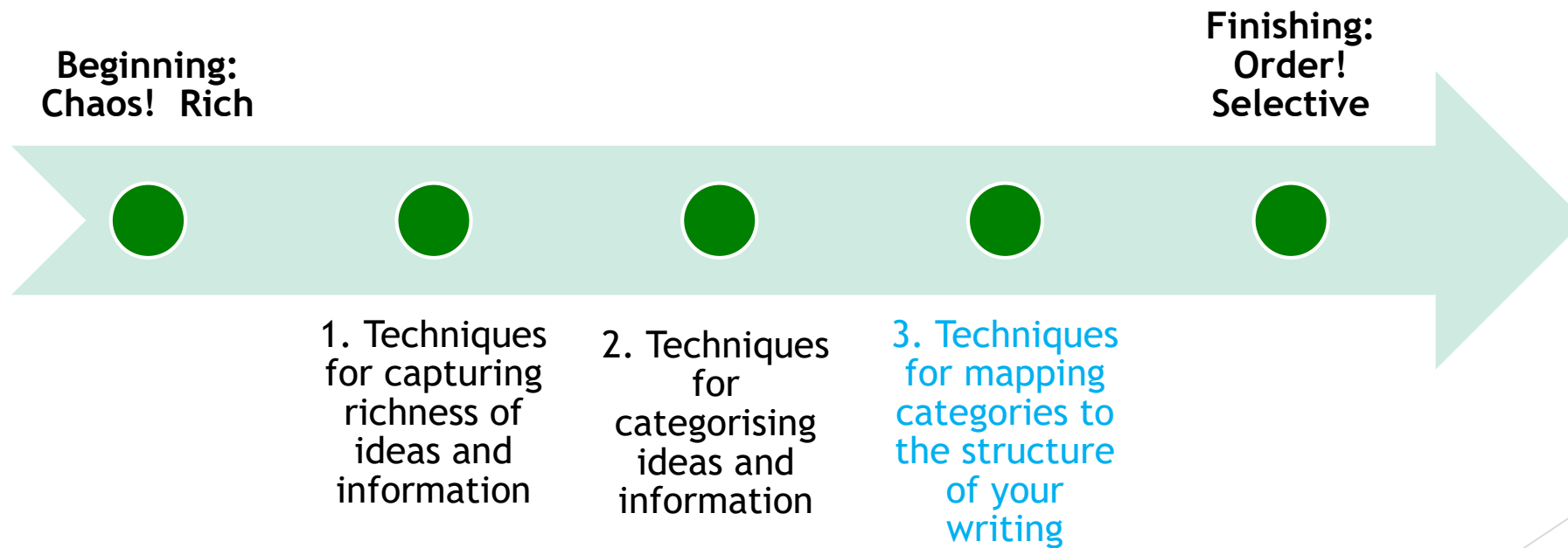
# Structure as a writing *process*

## Stages in conducting the literature review



# Structure as a writing *process*

## Stages in conducting the literature review



# Structure as a writing *process*

## Stages in conducting the literature review

### 3. Strategies for refining the literature review structure

**BUT first... Are you ready to finalise your lit review structure?**

- ▶ You have found & read (nearly) all the key literature
- ▶ You have a critical perspective on the literature
- ▶ You can verbally explain your view on the literature
- ▶ You have a clear sense of a literature gap which matches precisely to your research aims
- ▶ *Planners* have comprehensive tables, taxonomies, categories etc.
- ▶ *Drafters* have a draft covering 1) all raw material + 2) some emerging categories

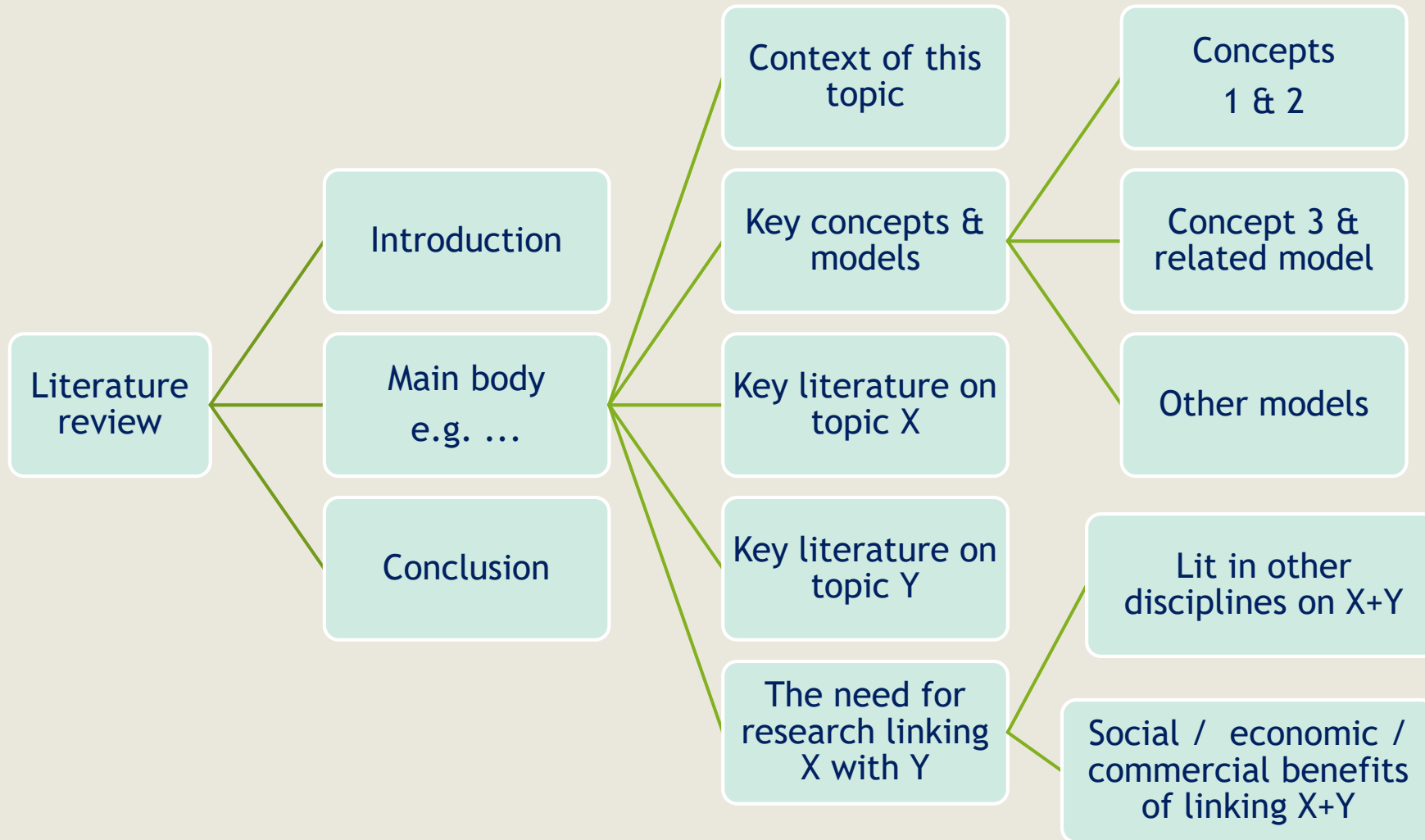
# Structure as a writing *process*

## Stages in conducting the literature review

### 3. Strategies for refining the literature review structure

Goals: purposes all achieved, analysis drives structure & culminates in gap

- Pause: Look at structures of some lit review chapters in PhDs in your field
- *Planners* - Can any of your taxonomies map straight to sections of the chapter?





# Structure as a writing *process*

## Stages in conducting the literature review

### 3. Strategies for refining the literature review structure

Goals: purposes all achieved, analysis drives structure & culminates in gap

- Pause: Look at structures of some lit review chapters in PhDs in your field
- *Planners* - Can any of your taxonomies map straight to sections of the chapter?
- Experiment with grouping your categories into some funnel-triangles
- Then try adding the ‘pointy ends’ of triangles (e.g. salt + fungus, fungus + PCR)
- Pendulum swing between the big picture (gap >> categories) and little picture (literature >> categories)

# Part of the table of contents for a completed thesis

## 2. Literature Review

Introduction

    Type 1 diabetes

    Type 2 diabetes

The complications of diabetes

    Microvascular complications

    Macrovascular complications

The importance of treating blood pressure and lipids in diabetes

Treatment guidelines for diabetes

    Do guidelines work?

The evolving diabetes epidemic

    The personal impact of diabetes

    The economic impact of diabetes

Who should look after people with diabetes?

Diabetes care in Australia

Supporting diabetes care -The shared care approach

Conclusions

# Structure as a writing *process*

## Stages in conducting the literature review

### 3. Strategies for refining the literature review structure

Goals: purposes all achieved, analysis drives structure & culminates in gap

- Pause: Look at structures of some lit review chapters in PhDs in your field
- *Planners* - Can any of your taxonomies map straight to sections of the chapter?
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- Then try adding the 'pointy ends' of triangles (e.g. salt + fungus, fungus + PCR)
- Pendulum swing between the big picture (gap >> categories) and little picture (literature >> categories)
- *Drafters* - Get a bird's eye view of emerging structure: storylines, paragraph labels / reverse outlining
- Don't stop adjusting until you can draw a clear taxonomy of your structure

# Structure as a writing *process*

## Stages in conducting the literature review

When all that is finished (congratulations), the next focus is...

Making your elegant structure *clear* - i.e. easy for the reader to follow 😊

(This is a whole other set of writing/editing techniques, at the levels of sentence and paragraph!)

# Closing



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