THE UNIVERSITY OF MELBOURNE

Bridging claims, hidden assumptions and team exercise

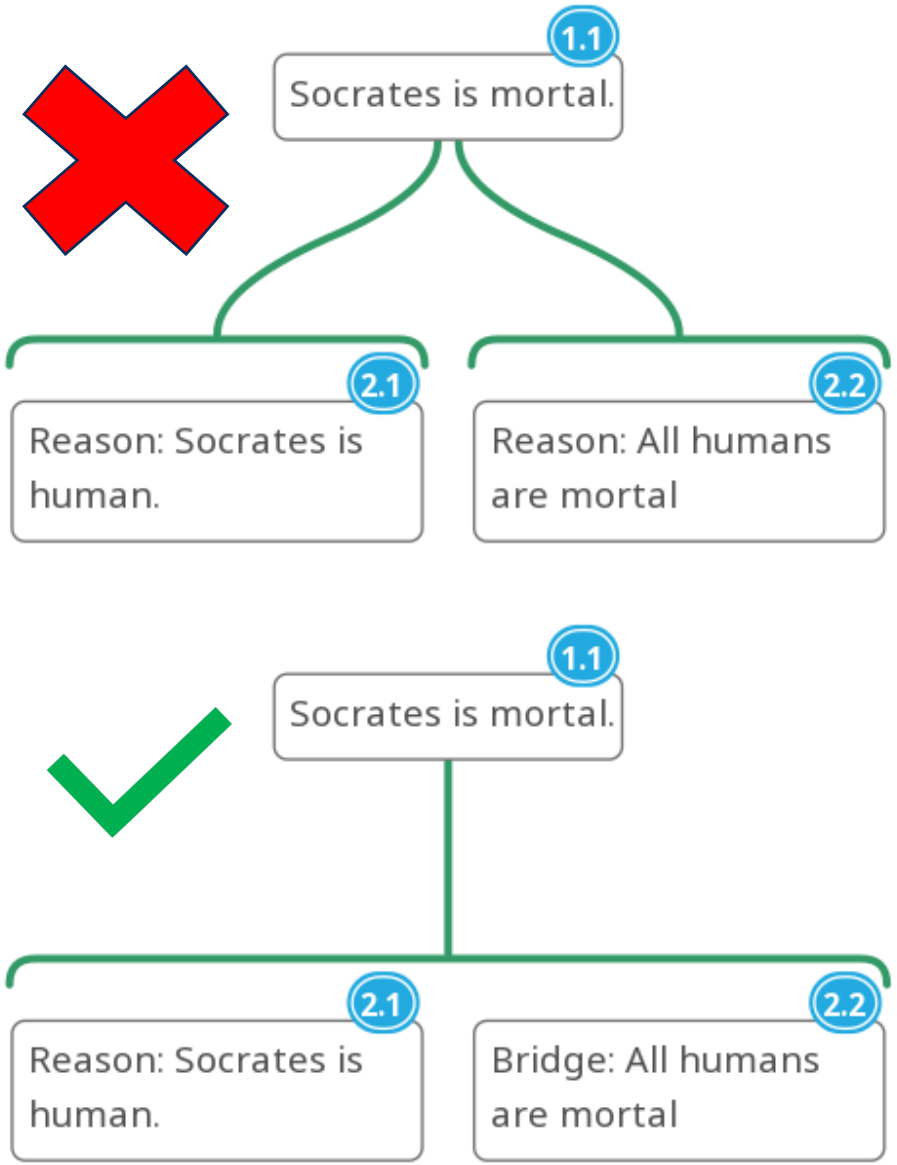
Session 3

The story so far…

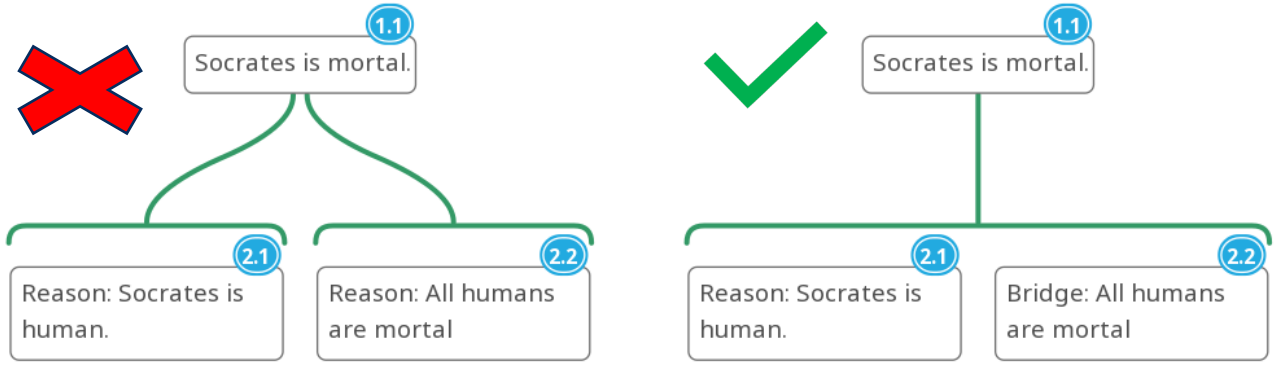
- CASE (**C**ontention, **A**rgument, **E**vidence, **S**ource) – Argument mapping ‘scheme’.
  - Box and arrow diagrams
  - Green for ‘reasons’, red for ‘objections’
- Abstraction – Argument maps have multiple ‘layers’ (CASE vs CAASE vs CAAASE etc), beginning with the most abstract and terminating at the evidence layer.
  - Missing rungs – People typically don’t include enough layers of ‘abstraction’.
  - Vantage points – stepping up in abstraction reveals potential weaknesses

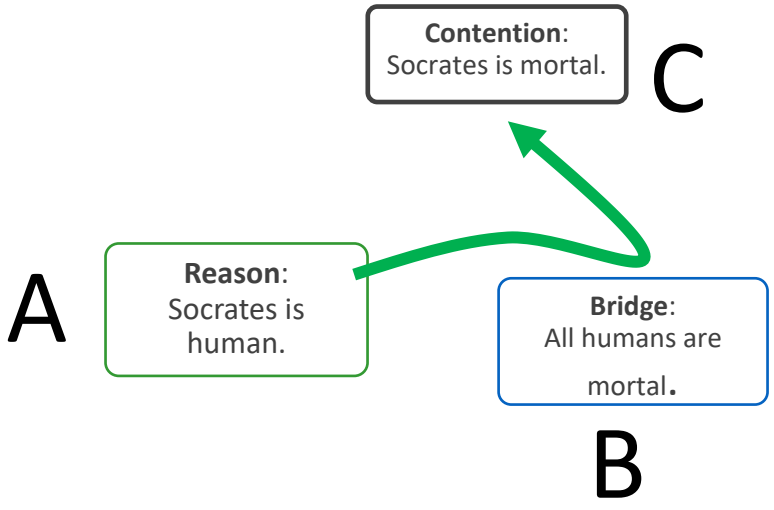
Bridging claims are needed for valid inferences

Socrates is mortal, because Socrates is human, and all humans are mortal.



A *reason* is taken *together* with the *bridge* to infer the contention



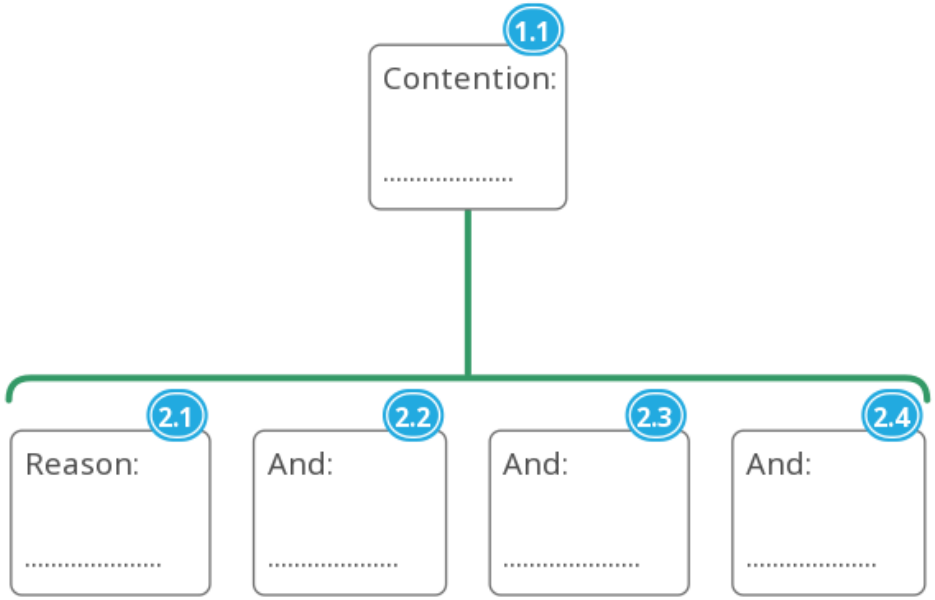


- When two or more claims are housed beneath a line, both *must* be true to infer the claim above.
- When claims are separated, it means that each, on their own can support, the claim above.
- **ALL** (yes **ALL**) arguments have an **ABC** structure – **A**rgument, **b**ridge, **c**ontention.
  - It's just that sometimes, the bridge is hidden or not made explicit.
- When it's a separate reason, we use **also**. When it's a bridging claim, we use **and**.

Exercise: Soil Carbon

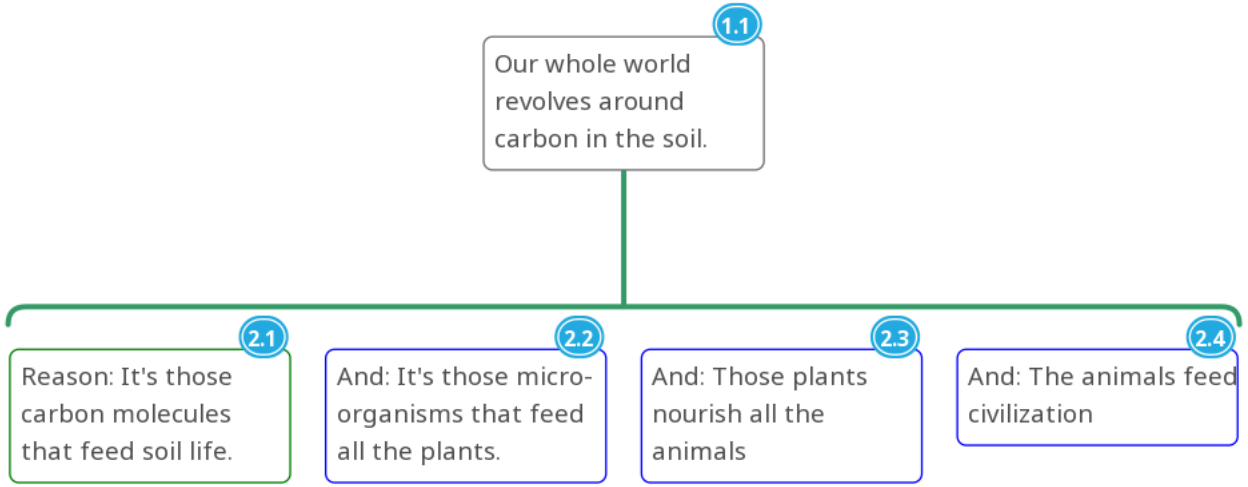
Using MindMup, map this argument:

“Our whole world revolves around the carbon in the soil, because its those carbon molecules that feed soil life. And it’s those micro-organisms that feed all the plants that nourish all the animals that feed civilization.”



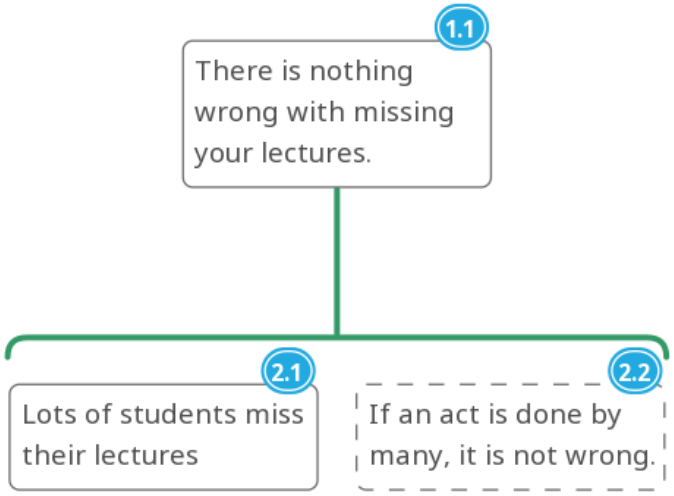
MindMup note: Use ‘add sibling’ claim for a bridge (this will group claims together under a single line)

Soil Carbon Solution



Sometimes bridging claims are hidden when they should be explicit

There is nothing wrong with missing your lectures because lots of students miss their lectures.



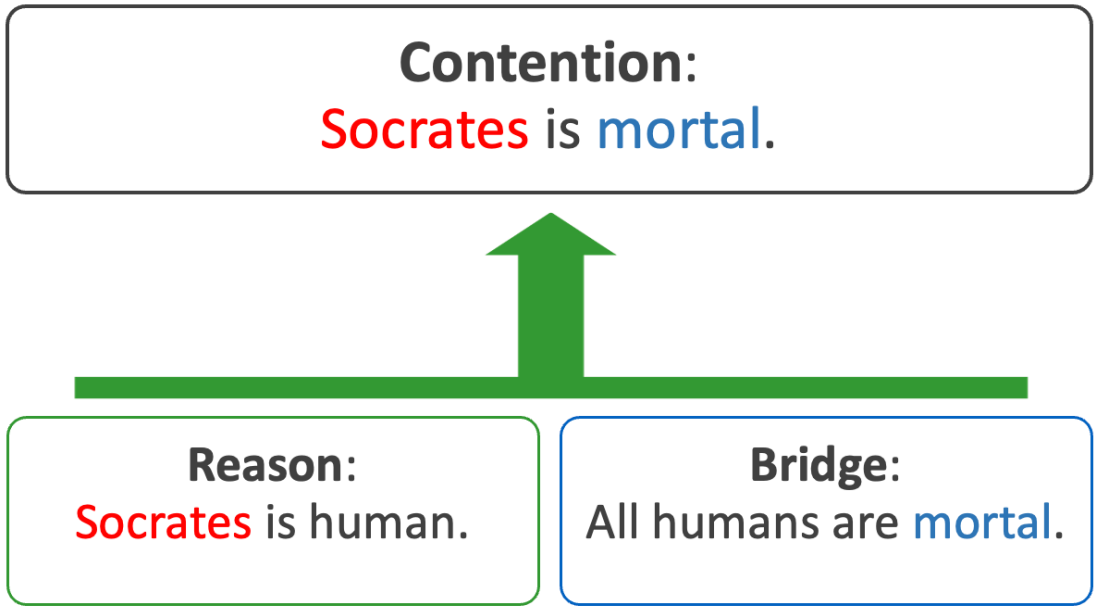
- We indicate that a claim is ‘implicit’ (not in the original argument) with dashed lines.
- When made explicit, we can check to see if it is dubious or requires more support.
- In this case, it is a very dubious claim and would need justification.

The Rabbit Rule – Technique for exposing hidden bridging claims

The rule: There should be no ‘magic rabbits’ in an argument map.

Magic rabbit: A claim that seemingly comes from nowhere (like a magic rabbit). It appears above, but not below.

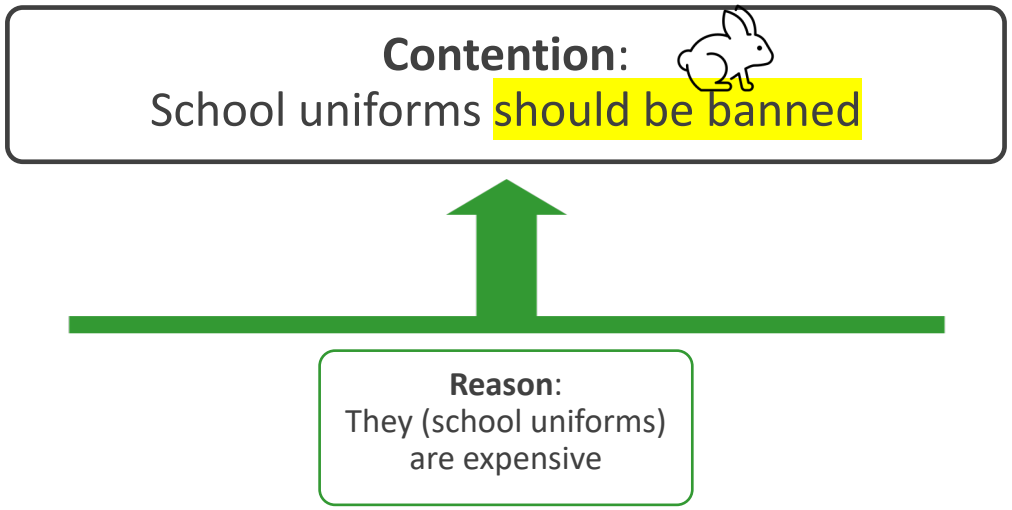
The technique: A mechanical check that significant terms appearing above, are also somewhere below.



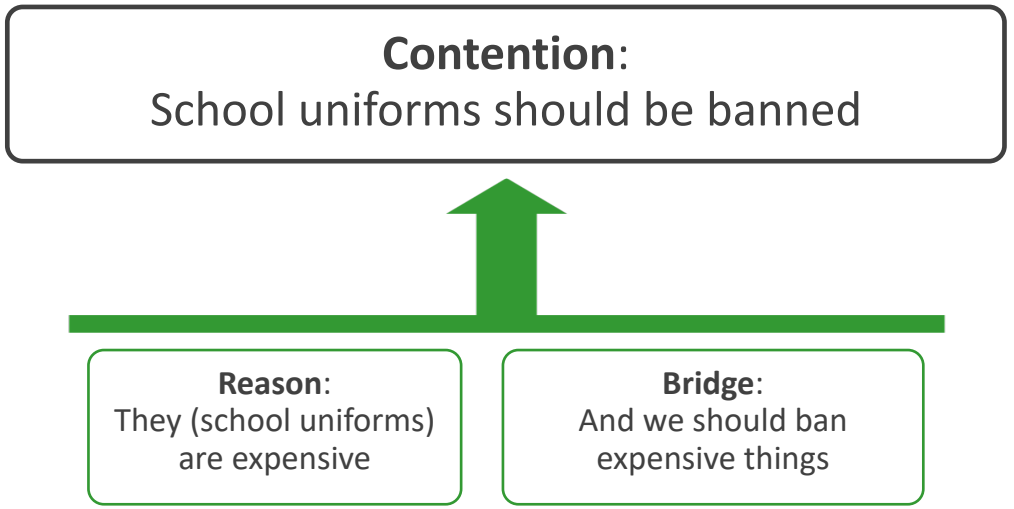
The Rabbit Rule is simple, yet very powerful.

'Magic Rabbits' tell you that there is an implicit assumption somewhere in the argument.

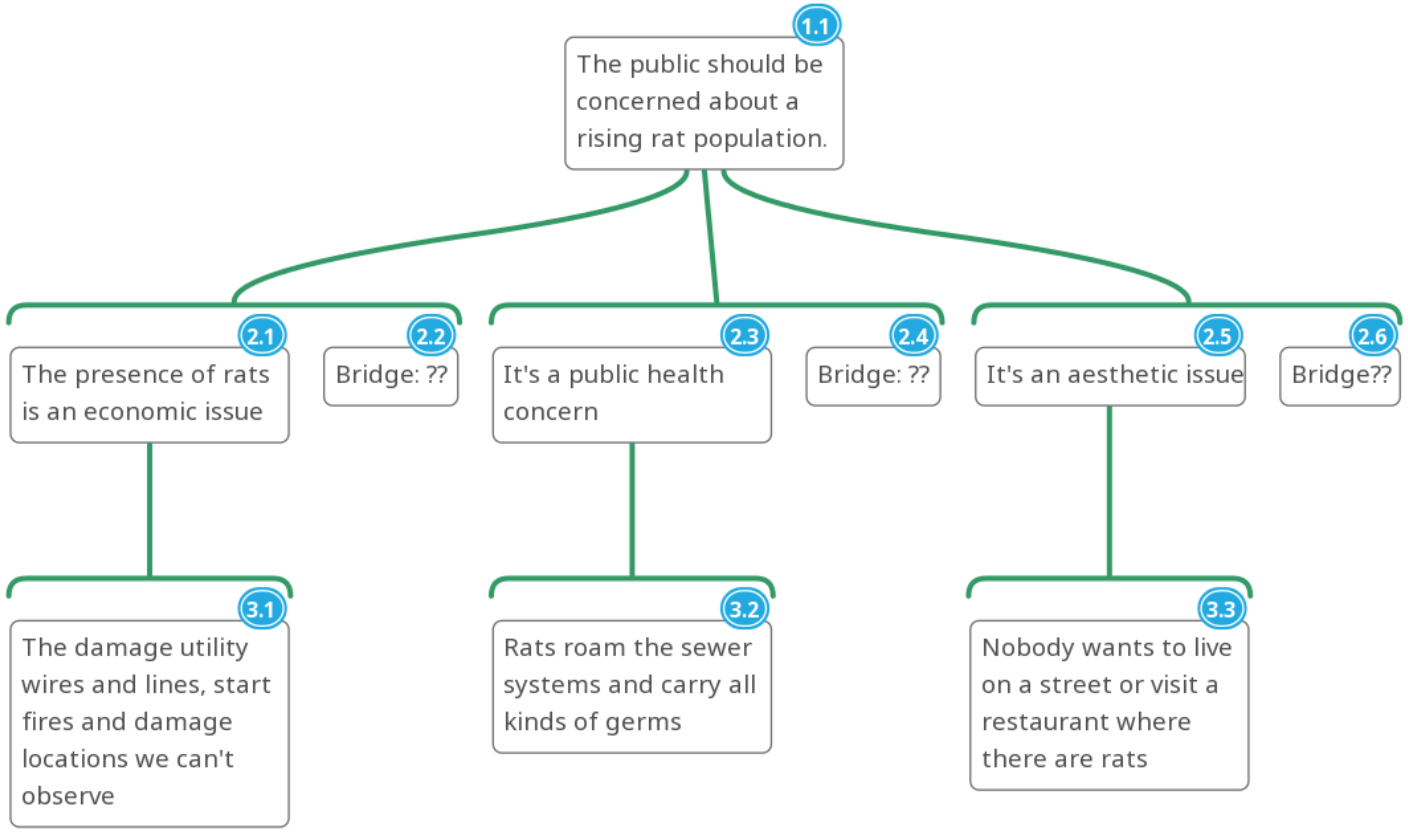
AND, they give you a clue to what that assumption might be!



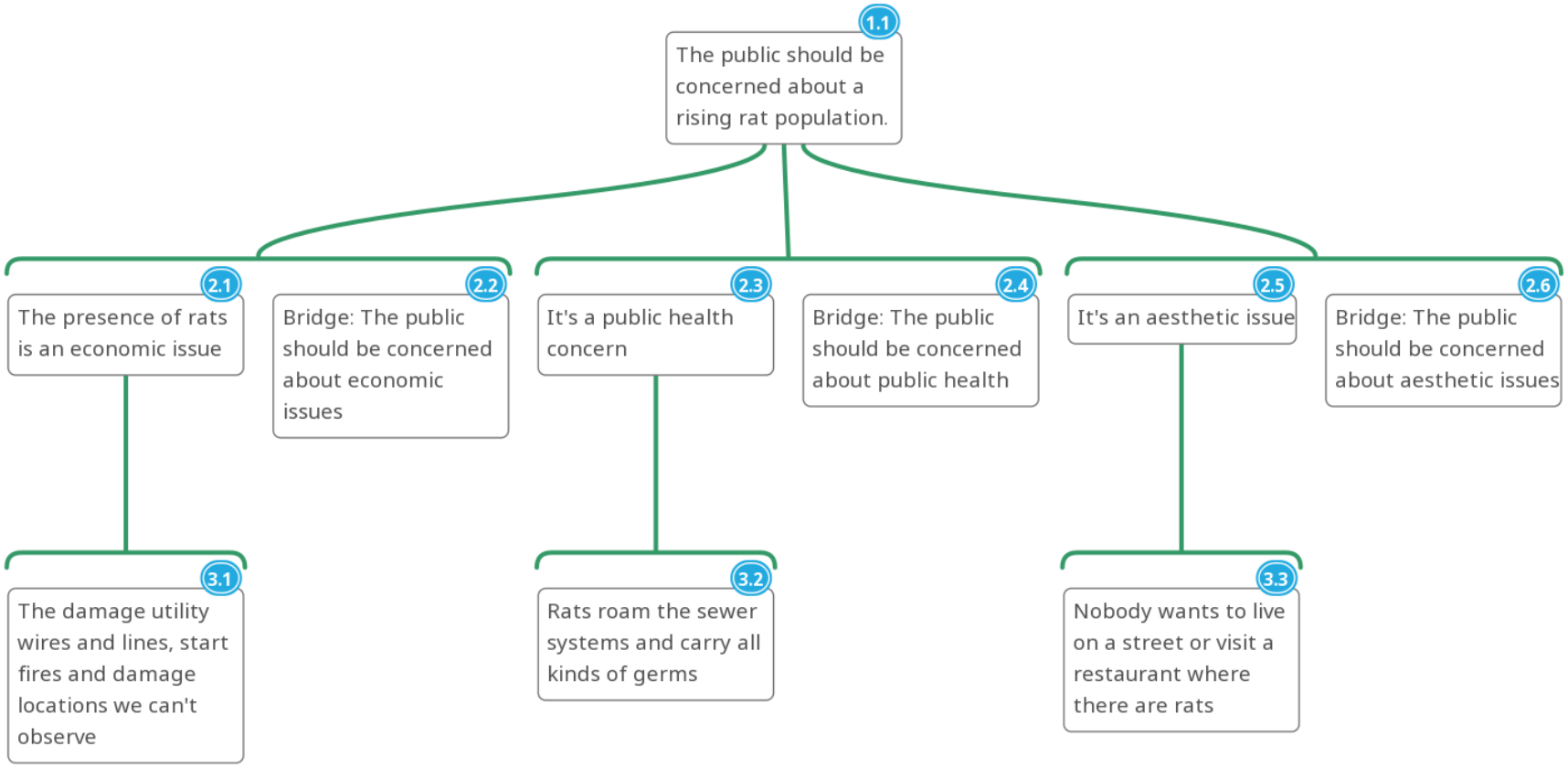
No more magic rabbits!



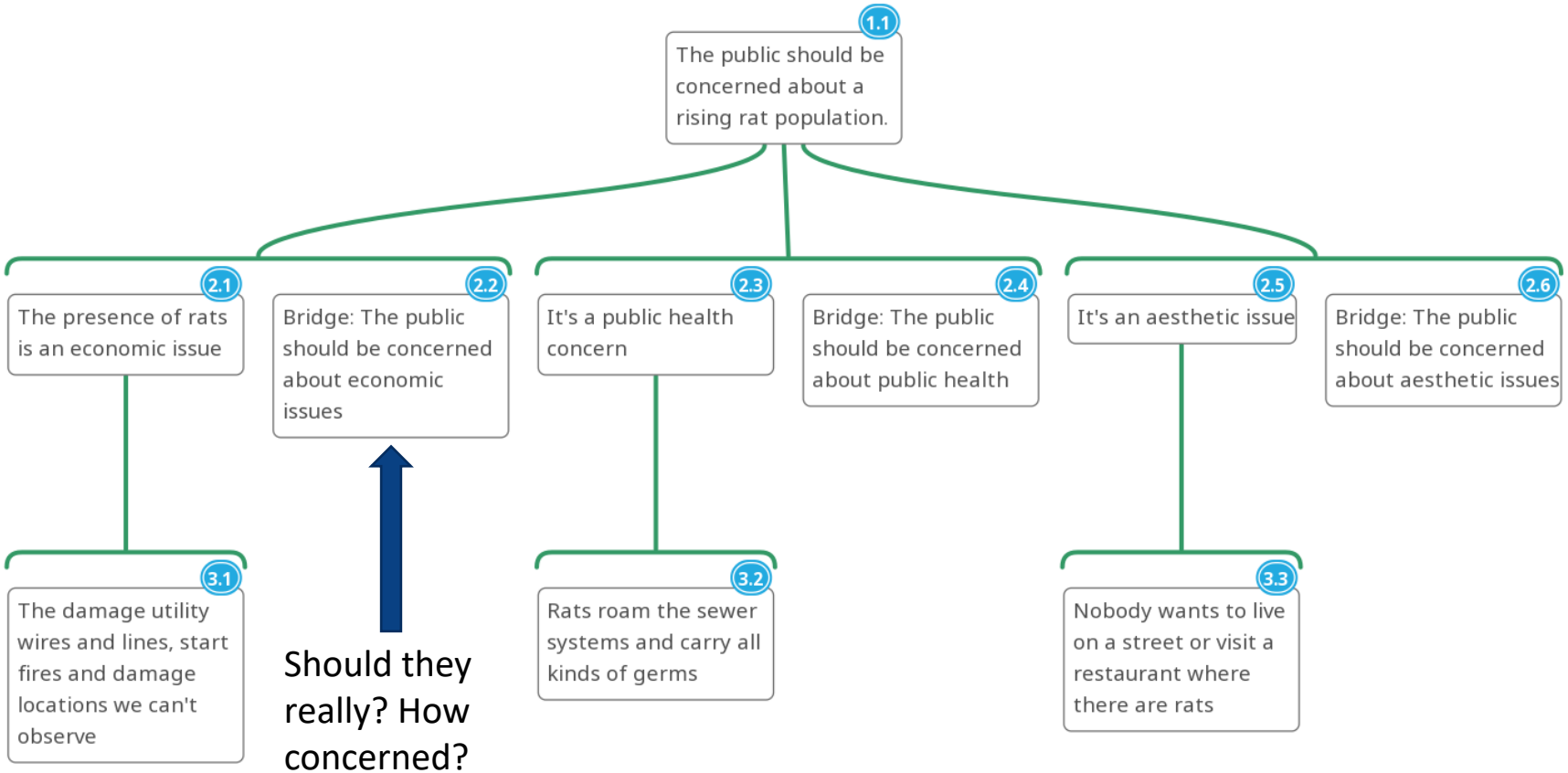
Use the Rabbit Rule to fill in the missing bridging claims



Rats with bridging claims - Solution

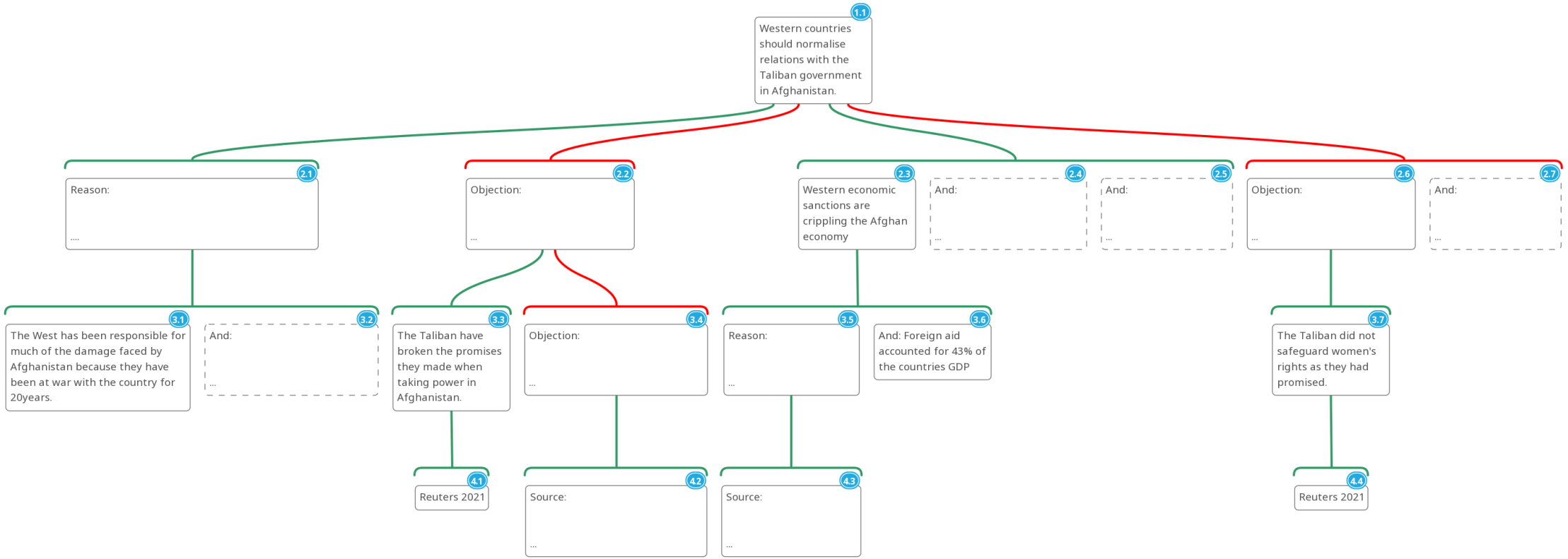


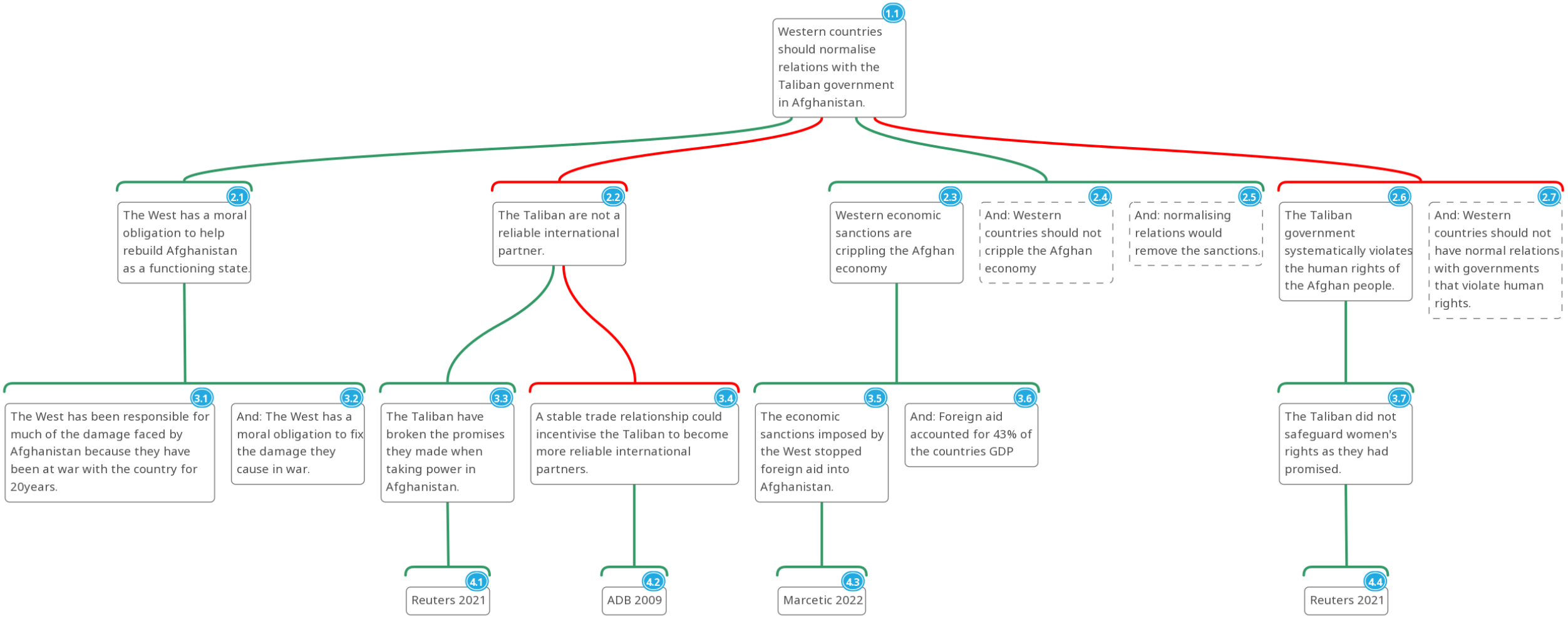
Once we've articulated the bridging claims, we can evaluate them and make our argument stronger



Time to work together to map an argument and find hidden bridges

- Check your handout for a link to the argument map scaffold.
- Work with your team to complete the argument map (nominate a 'scribe' to do the mapping with MindMup)
- Don't forget to check for magic rabbits!
- Remember, claims with dashed lines are NOT in the original argument. You'll need to figure out what these are…




1.1
Western countries should normalise relations with the Taliban government in Afghanistan.
2.1
The West has a moral obligation to help rebuild Afghanistan as a functioning state.
2.2
The Taliban are not a reliable international partner.
2.3
Western economic sanctions are crippling the Afghan economy
2.4
And: Western countries should not cripple the Afghan economy
2.5
And: normalising relations would remove the sanctions.
2.6
The Taliban government systematically violates the human rights of the Afghan people.
2.7
And: Western countries should not have normal relations with governments that violate human rights.
3.1
The West has been responsible for much of the damage faced by Afghanistan because they have been at war with the country for 20years.
3.2
And: The West has a moral obligation to fix the damage they cause in war.
3.3
The Taliban have broken the promises they made when taking power in Afghanistan.
3.4
A stable trade relationship could incentivise the Taliban to become more reliable international partners.
3.5
The economic sanctions imposed by the West stopped foreign aid into Afghanistan.
3.6
And: Foreign aid accounted for 43% of the countries GDP
3.7
The Taliban did not safeguard women's rights as they had promised.
4.1
Reuters 2021
4.2
ADB 2009
4.3
Marcetic 2022
4.4
Reuters 2021

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CASE Mapping Sample Essay 1

Session 4

Recap…

We've looked at the CASE fundamentals

- Box and arrow diagrams
- Green for 'reasons', red for 'objections'
- Abstraction – Argument maps have multiple 'layers' (CASE vs CAASE vs CAAASE etc), beginning with the most abstract and terminating at the evidence layer.
- Bridging claims – allow us to make valid inferences
- Rabbit rule – technique for exposing hidden bridging claims

We’re going to try putting all this theory into practice

Part 1

- Re-read sample essay 1 (pg.x in your workbook)
- Nominate a ‘scribe’ and work with your team to map the essay.

Part 2

- We’ll compare the map of sample essay 1 to sample essay 2 (prepared earlier).
- Are there differences in the map that can help us explain any differences in the quality of the essay?

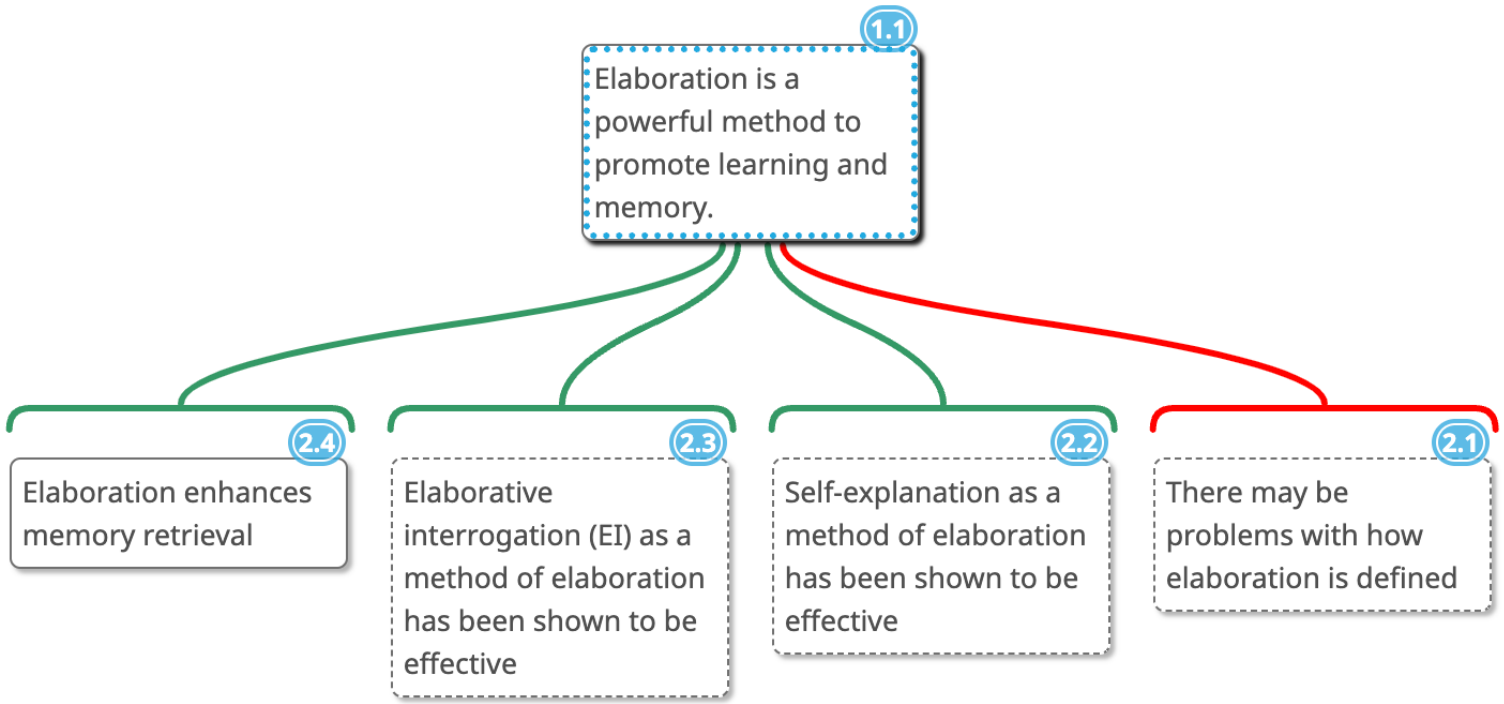
Why are we doing this?

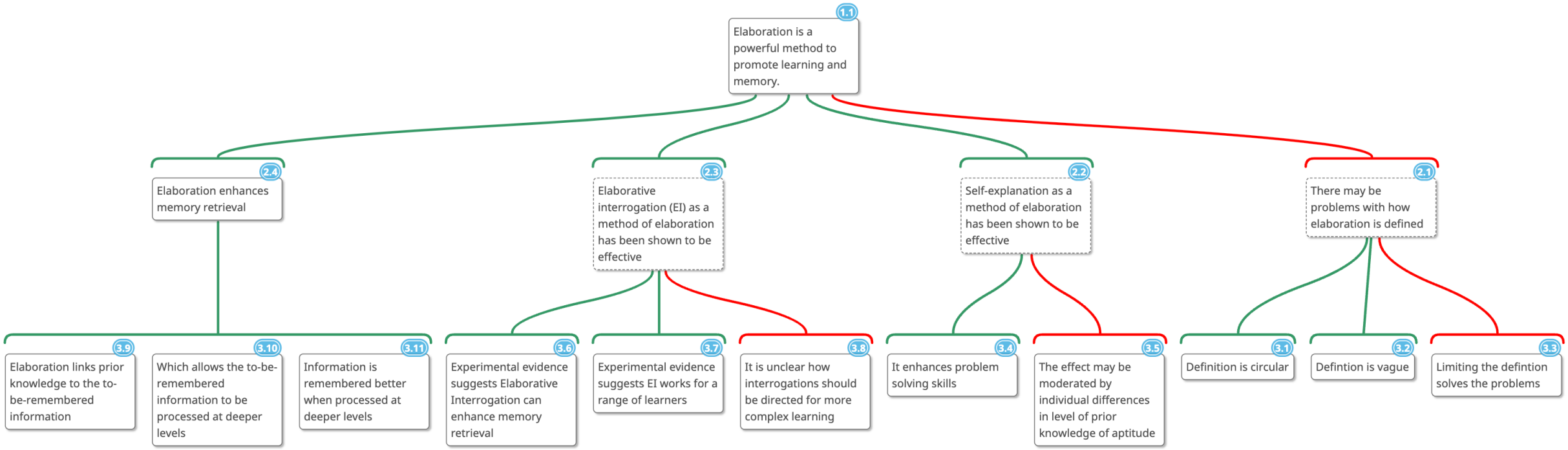
- Practice! Like with any skill, the more you do it the easier it’ll get.
- Appreciate the quality (or lack of quality) in written work.
- Use the language of argument mapping to evaluate an argument.

Time to get started on part 1!

Some hints and tips:

- Find the contention first and express it as a single sentence.
- If the introduction is written well, then you should be able to find the high-levels arguments within.
- It can help annotating the essay, drawing out the main points of each paragraph.
- Try to think “what is this part of the essay *really* saying”.
- If you’re struggling, there’s a map of the first essay in the solutions section of your workbook. Try not to use it but it’s there if you’re stuck.
- There’s no ‘right’ answer, although some answers will be better than others.


1.1
Elaboration is a powerful method to promote learning and memory.
2.4
Elaboration enhances memory retrieval
2.3
Elaborative interrogation (EI) as a method of elaboration has been shown to be effective
2.2
Self-explanation as a method of elaboration has been shown to be effective
2.1
There may be problems with how elaboration is defined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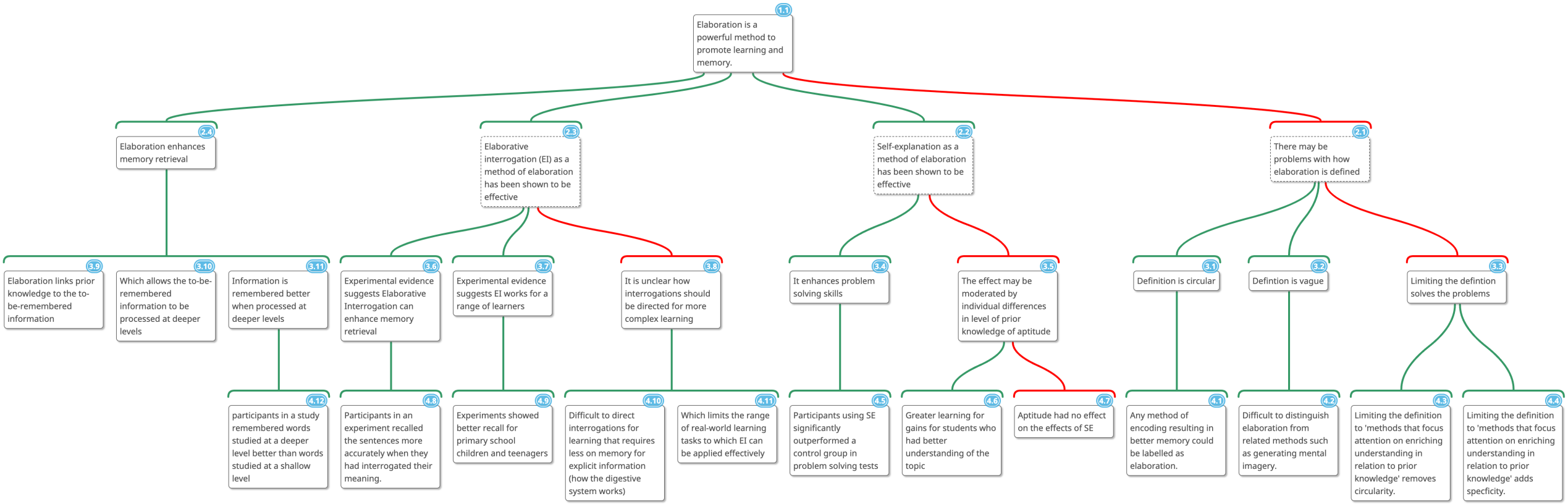
Elaboration links prior knowledge to the to-be-remembered information
3.10
Which allows the to-be-remembered information to be processed at deeper levels
3.11
Information is remembered better when processed at deeper levels
3.6
Experimental evidence suggests Elaborative Interrogation can enhance memory retrieval
3.7
Experimental evidence suggests EI works for a range of learners
3.8
It is unclear how interrogations should be directed for more complex learning
3.4
It enhances problem solving skills
3.5
The effect may be moderated by individual differences in level of prior knowledge of aptitude
3.1
Definition is circular
3.2
Defintion is vague
3.3
Limiting the defintion solves the problems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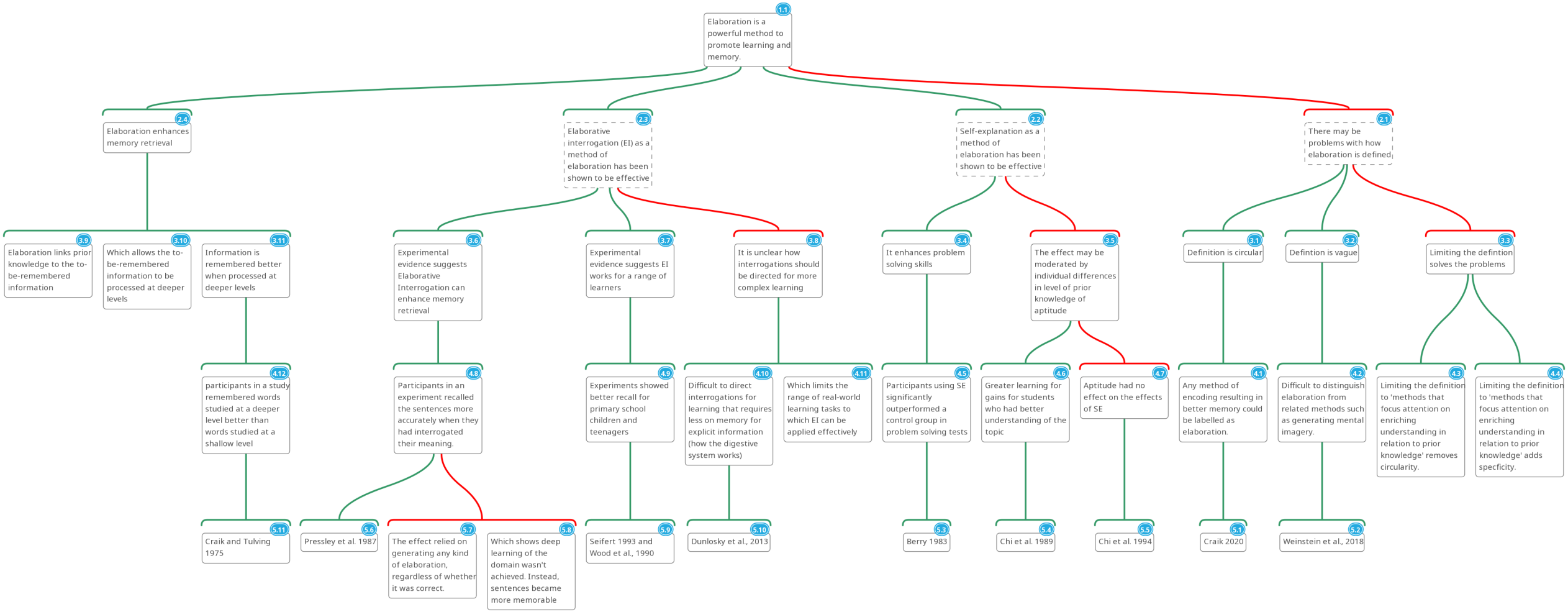
4.8
Participants in an experiment recalled the sentences more accurately when they had interrogated their meaning.
4.9
Experiments showed better recall for primary school children and teenagers
4.10
Difficult to direct interrogations for learning that requires less on memory for explicit information (how the digestive system works)
4.11
Which limits the range of real-world learning tasks to which EI can be applied effectively
4.5
Participants using SE significantly outperformed a control group in problem solving tests
4.6
Greater learning for gains for students who had better understanding of the topic
4.7
Aptitude had no effect on the effects of SE
4.1
Any method of encoding resulting in better memory could be labelled as elaboration.
4.2
Difficult to distinguish elaboration from related methods such as generating mental imagery.
4.3
Limiting the definition to 'methods that focus attention on enriching understanding in relation to prior knowledge' removes circularity.
4.4
Limiting the definition to 'methods that focus attention on enriching understanding in relation to prior knowledge' adds specficity.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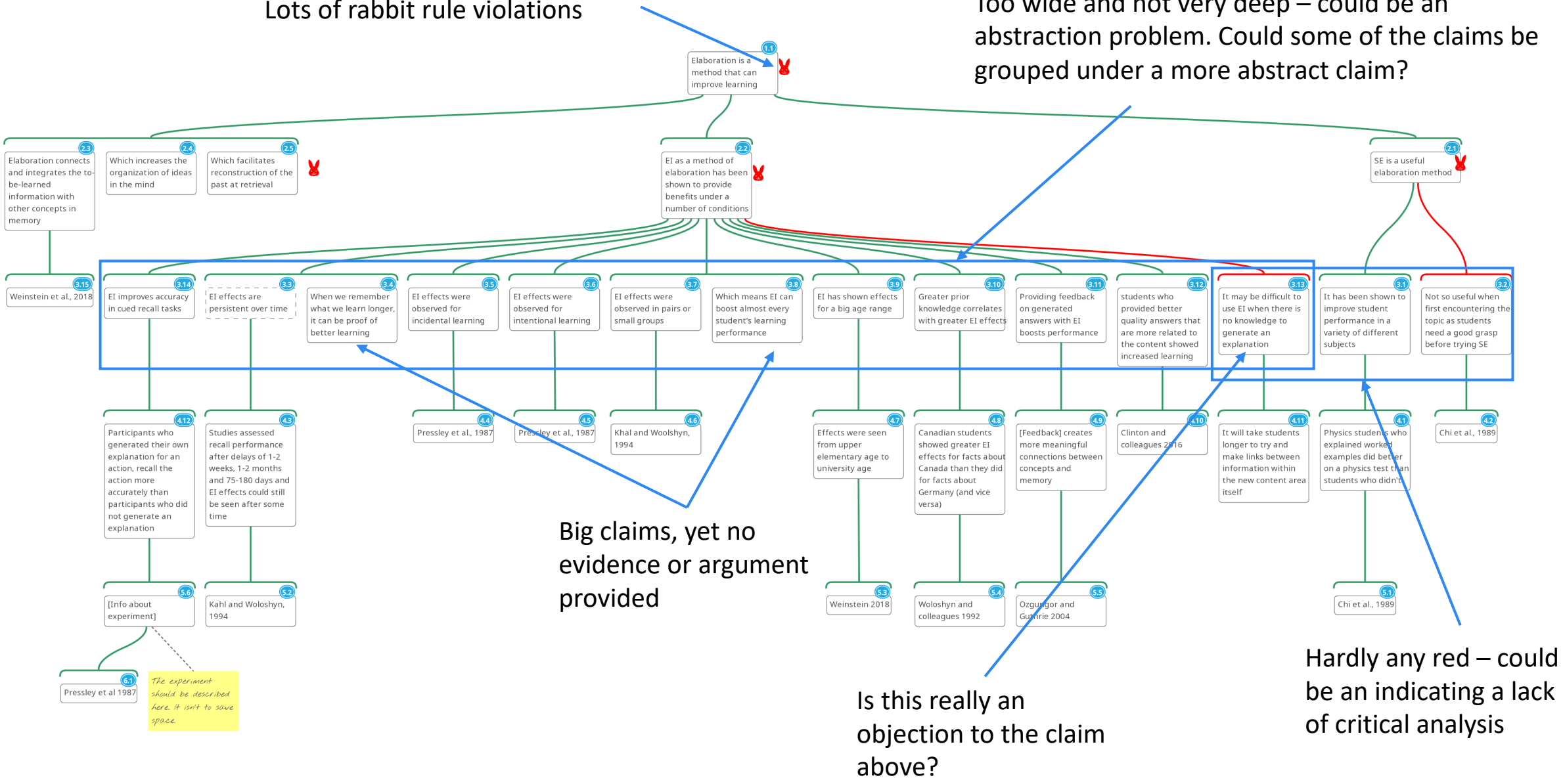
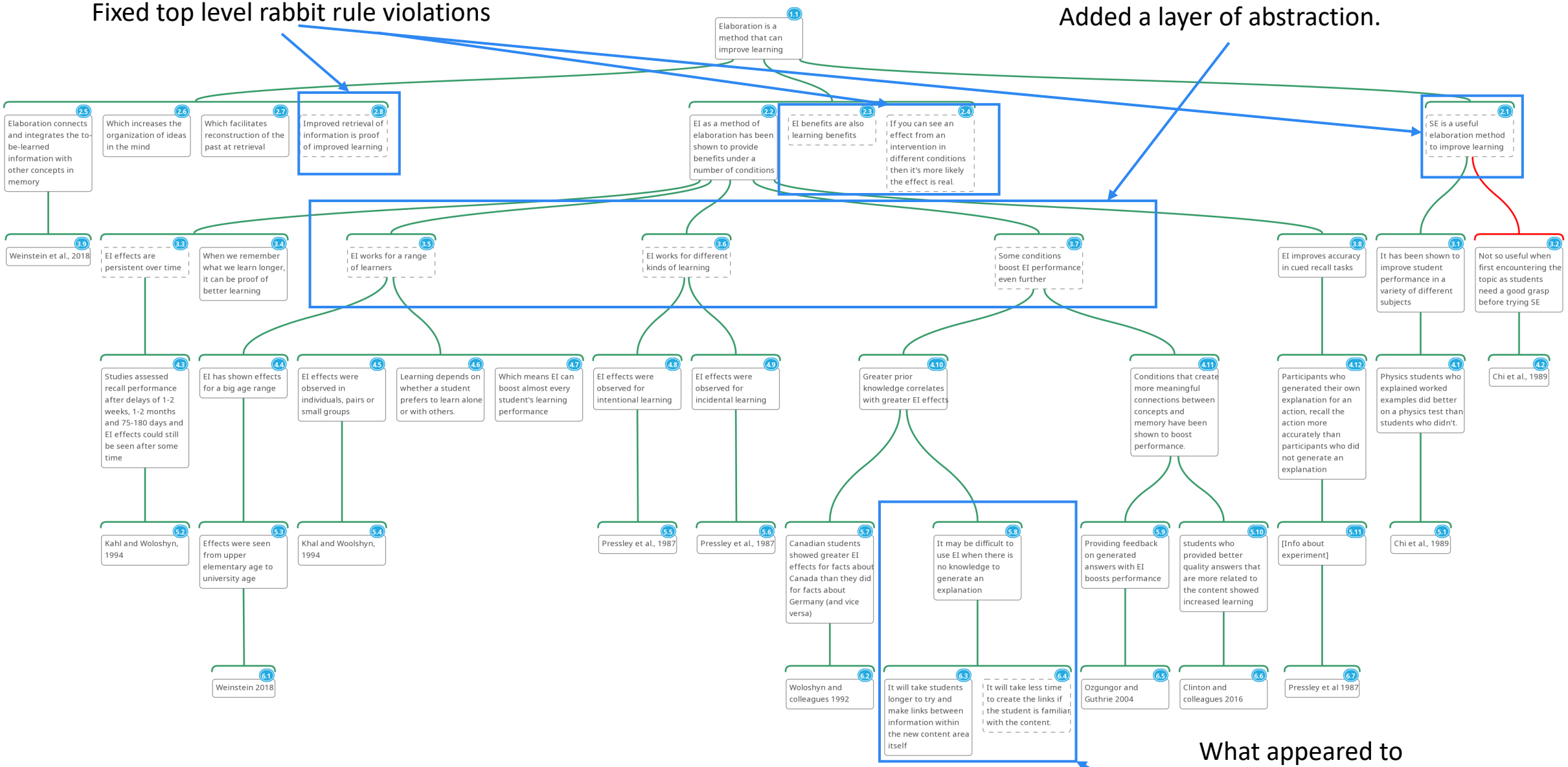
5.11
Craik and Tulving 1975
5.6
Pressley et al. 1987
5.7
The effect relied on generating any kind of elaboration, regardless of whether it was correct.
5.8
Which shows deep learning of the domain wasn't achieved. Instead, sentences became more memorable
5.9
Seifert 1993 and Wood et al., 1990
5.10
Dunlosky et al., 2013
5.3
Berry 1983
5.4
Chi et al. 1989
5.5
Chi et al. 1994
5.1
Craik 2020
5.2
Weinstein et al., 2018


Lots of rabbit rule violations
Too wide and not very deep – could be an abstraction problem. Could some of the claims be grouped under a more abstract claim?
1.1 Elaboration is a method that can improve learning
2.3 Elaboration connects and integrates the to-be-learned information with other concepts in memory
2.4 Which increases the organization of ideas in the mind
2.5 Which facilitates reconstruction of the past at retrieval
2.2 EI as a method of elaboration has been shown to provide benefits under a number of conditions
2.1 SE is a useful elaboration method
3.15 Weinstein et al., 2018
3.14 EI improves accuracy in cued recall tasks
3.3 EI effects are persistent over time
3.4 When we remember what we learn longer, it can be proof of better learning
3.5 EI effects were observed for incidental learning
3.6 EI effects were observed for intentional learning
3.7 EI effects were observed in pairs or small groups
3.8 Which means EI can boost almost every student's learning performance
3.9 EI has shown effects for a big age range
3.10 Greater prior knowledge correlates with greater EI effects
3.11 Providing feedback on generated answers with EI boosts performance
3.12 students who provided better quality answers that are more related to the content showed increased learning
3.13 It may be difficult to use EI when there is no knowledge to generate an explanation
3.1 It has been shown to improve student performance in a variety of different subjects
3.2 Not so useful when first encountering the topic as students need a good grasp before trying SE
4.12 Participants who generated their own explanation for an action, recall the action more accurately than participants who did not generate an explanation
4.3 Studies assessed recall performance after delays of 1-2 weeks, 1-2 months and 75-180 days and EI effects could still be seen after some time
4.4 Pressley et al., 1987
4.5 Pressley et al., 1987
4.6 Khal and Woolshyn, 1994
4.7 Effects were seen from upper elementary age to university age
4.8 Canadian students showed greater EI effects for facts about Canada than they did for facts about Germany (and vice versa)
4.9 [Feedback] creates more meaningful connections between concepts and memory
4.10 Clinton and colleagues 2016
4.11 It will take students longer to try and make links between information within the new content area itself
4.1 Physics students who explained worked examples did better on a physics test than students who didn't
4.2 Chi et al., 1989
5.6 [Info about experiment]
5.2 Kahl and Woloshyn, 1994
5.3 Weinstein 2018
5.4 Woloshyn and colleagues 1992
5.5 Ozgungor and Guthrie 2004
5.1 Chi et al., 1989
6.1 Pressley et al 1987
The experiment should be described here. It isn't to save space.
Big claims, yet no evidence or argument provided
Is this really an objection to the claim above?
Hardly any red – could be an indicating a lack of critical analysis

Fixed top level rabbit rule violations

Added a layer of abstraction.



What appeared to be an objection is actually a supporting argument.

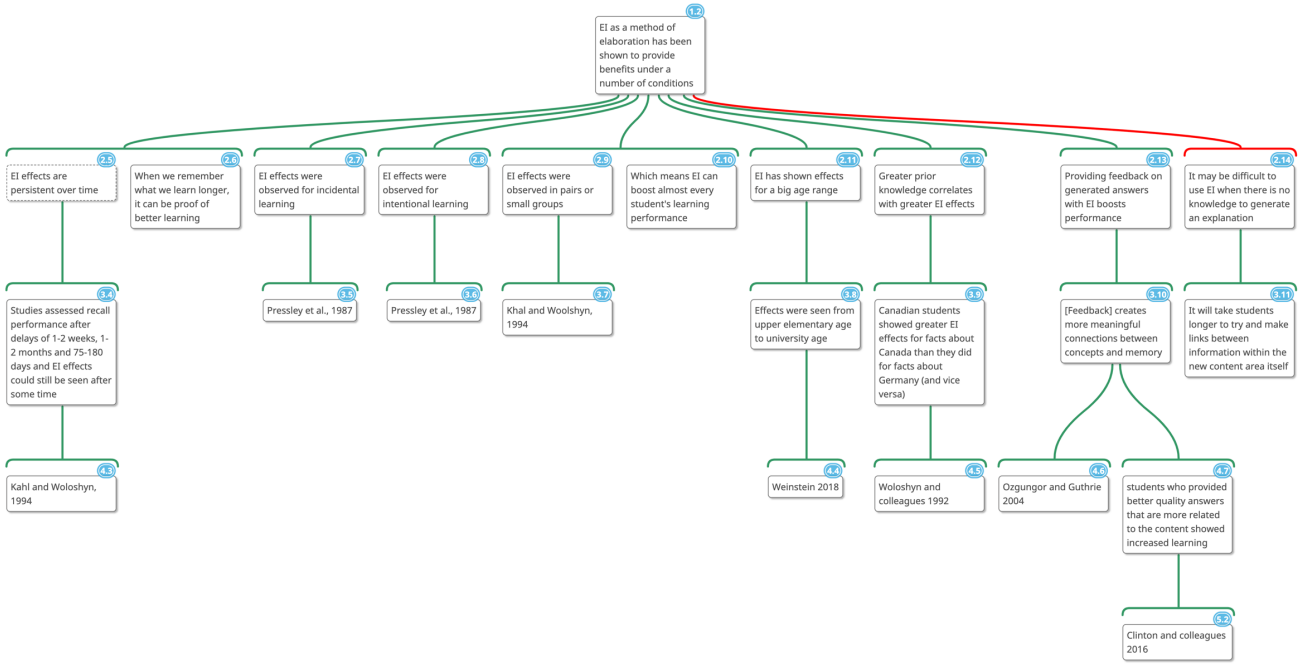
When we can remember what we learn longer, it can be proof of better learning. Some studies assessed recall performance after delays of 1-2 weeks, 1-2 months, and 75-180 days (Kahl & Woloshyn, 1994). They showed that EI effects could still be seen after some time.

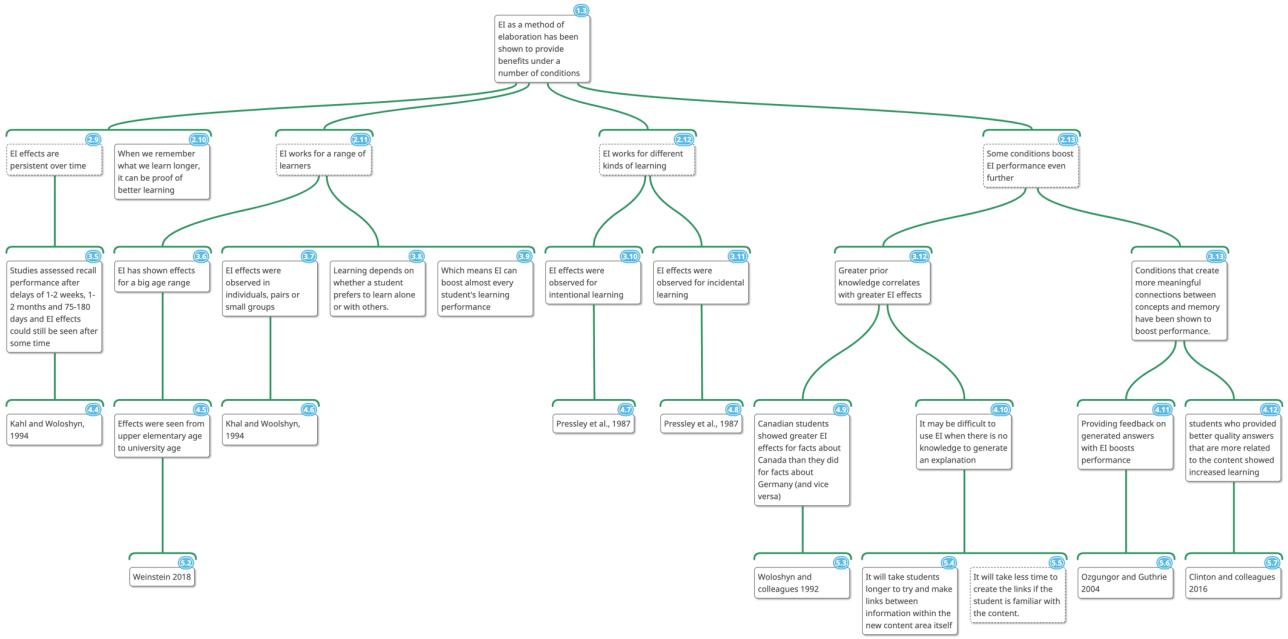
Many studies show that EI improves learning (Dunlosky et al., 2013). Learning conditions refers to things like the learning instructions given or where learning occurs. Research has found consistent EI effects with both incidental (learning information when presented with a different aim to the real aim) and intentional (being told the precise goal of the learning session) learning instructions (Pressley et al., 1987). Also, although most studies focus on individual learning, some have also found EI effects for students working in pairs or small groups (Kahl & Woloshyn, 1994). As learning depends on whether a student prefers to work alone or with others, being able to use it yourself or in a group means EI can boost almost every student's learning performance potentially. EI effects can also be seen whether people are young or old. Many studies have shown EI effects for a big age range – from upper elementary school students to university students (Weinstein, 2018). How much a student already knows also seems to matter, and greater prior knowledge correlates with greater EI effects (Clinton et al., 2016). Woloshyn and colleagues (1992) showed that the amount of knowledge participants had in an area affected how big the EI effect was on performance. Canadian students showed greater EI effects for facts about Canadian provinces than for German states, and German students showed greater effects for German states.

EI becomes more effective with more meaningful connections between concepts and memory (Ozgungor & Guthrie, 2004), so there may be greater benefit if there is more feedback given on the generated answers. Clinton and colleagues (2016) showed that getting students to provide better quality answers that are more related to the content helps EI, when this didn't happen there was less learning in the EI condition compared to just reading the lesson more.

Most of the content of the map comes from these paragraphs in the essay.

In the essay, there is little to connect the evidence to the argument (apart from 'Many studies show that EI improves learning'). Which we can see clearly in the argument map. It makes this part of the essay difficult to follow.





EI as a method of elaboration has been shown to provide learning benefits under a number of conditions. EI effects are persistent over time, they are seen in a range of learners and different kinds of learning and some conditions can boost EI performance even further. Taking these in turn:

EI effects are persistent over time and when we can remember what we learn longer, it can be proof of better learning. Studies assessed recall performance after delays of 1-2 weeks, 1-2 months, and 75-180 days (Kahl & Woloshyn, 1994). They showed that EI effects could still be seen after some time.

Also, EI has shown effects for a big age range, individuals and collaborative learners. EI effects were seen from upper elementary age to university age (Weinstein 2018). Effects were also observed in individuals, pairs and small groups (Khal and Woolshyn 1994). Since learning depends on whether a student prefers to learn alone or with others, Khal and Woolshyn have shown that EI can potentially boost every students learning performance.

EI is effective for different kinds of learning as well. Research has found consistent EI effects with both incidental (learning information when presented with a different aim to the real aim) and intentional (being told the precise goal of the learning session) learning instructions (Pressley et al., 1987).

Finally, some conditions appear to boost EI performance further. Frist, conditions that create more meaningful connections between concepts and memory have been shown to boost performance. One study showed that providing more feedback on answers generated with EI had more of an effect (Ozgungor and Guthrie 2004) while another showed that students who provided better quality answers that are more related to the content did better than those who didn't (Clinton and colleagues 2016). Second, greater prior knowledge of the subject appears to correlate with greater EI effects. Canadian students showed greater EI effects for facts about Canadian provinces than for German states, and German students showed greater effects for German states (Woloshyn and colleagues 1992). This may be because it is difficult to use EI when there is no prior knowledge to generate an explanation; it will take students longer to try and make links between information within the new content area (and presumably it will take them less time to make those links if they are familiar with the content area).

Key differences in the essay maps

- Which essay was easier to map?
- How are the overall colors different? What does this tell us?
- What about the depth of the map? What clues does that give us about the essay quality?
- How much content was added to the map so it makes sense?
- Where are the objections?
- Any other differences you noticed?

For next time…

- You'll be creating a map from scratch based on your understanding of some of the course material.