Critical Thinking
VALUE MaP
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Simple critical thinking

- With any ‘argument’, theoretical statement or academic opinion we can adopt 3 positions:
  - 1. Agree
  - 2. Disagree
  - 3. Agree/disagree with qualifications

- Positions 1 and 2 are rarely useful in academic discourse
  - Issues, evidence, underpinning assumptions, context etc. make arguments complex and nuanced
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- Position 3 is the position most often adopted in academic discourse, both verbal and written
  - Position 3 allows us to recognise, amongst other things...
    - Faults in method/statistics
    - Problems with evidence
    - Unintentional or intentional bias
    - ‘Skewed’/highly selective samples
    - Alternate explanations etc.
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- In fact all the things that make academic thinking, writing, research and ‘conversation’ rich and enjoyable!
- So, at the most straightforward level, critical thinking is all the processes that allow us to develop Position 3 effectively!
- But in order to think truly critically, it is helpful to understand a series of critical terms
- It is also necessary to adopt a strategic approach
What will be explored: the critical thinking strategy

- 4 stages – establishing
  - Prior position
  - Main point
  - Weak/strong evidence
  - Conclusion drawn

- 7 analytical ‘tools’/processes
  - Identifying the line of reasoning (4 stages)
  - Critically evaluating the line of reasoning
  - Identifying conclusions
  - Looking ‘underneath the surface’
  - Identifying evidence
  - Evaluating evidence using valid criteria
  - Deciding if the evidence supports these conclusions
Key terms

- **Proposition**: A statement of what an author wishes to prove
- **Argument**: The overall case made by an author (including the proposition) plus the explanation as to why the proposition is true
- **Line of reasoning**: The way in which this position is logically explored, justified and ‘unfolded’
- **Assertions**: Statements that need further evidence before they can be accepted
- **Premises**: Initial positions/points of view that precede/justify the argument itself
- **False premises**: Initial arguments, and arguments, based on generalisations or insufficient evidence
What is critical thinking?

- Critical thinking can be seen as a type of constructive scepticism.
- When we look at academic writing, we may be tempted to make an early judgement about its veracity.
  - Usually, because we tend to focus on the conclusion, rather than the steps that lead up to the conclusion.
- Critical thinking involves detaching ourselves from instant agreement/disagreement, and exploring the reasons *why* we accept/reject an ‘argument’; *why* we should raise qualifications and *what* sort of qualifications these should be.
What is critical thinking?

- We can simplify the process by dividing it into 4 clear stages
  1. What are the prior assumptions, contextual information and premises that precede the ‘argument’?
     - Note these may not always be apparent in the text because they are assumed, taken for granted
  2. How is the argument then developed?
What is critical thinking?

- 3. What is the evidence provided to support the ‘argument’, and how can it be evaluated?
- 4. What is the conclusion reached, and how does the preceding discussion, information and evidence (logically) support it?
- Put simply: What’s the prior position; what’s the main point; where’s the weak/strong evidence; what’s the conclusion!
What is critical thinking?

- Cottrell (2008, p.275) then goes on to outline a series of analytical thinking processes that exemplify critical thinking:
  - Standing back from the information given
  - Examining it in detail from many angles
  - Checking for accuracy
  - Checking if statements logically precede/follow one another
  - Looking for flaws in reasoning, evidence used or conclusions drawn
  - Comparing the same position from the perspective of different writers
What is critical thinking?

- Being able to explain – and illustrate – why different writers reach different conclusions
- Being able to express an informed opinion as to why one conclusion is more valid than another
- Being alert to ‘tricks’ of language, data or statistics that try and persuade a reader ‘beyond logic’
- Checking for hidden assumptions
- Checking for attempts to lure the reader into agreement
  - “Surely we can accept that…”

- These form a useful set of practical criteria to allow us to ‘do’ critical thinking, and inform the discussion below
1. Identifying the line of reasoning in a text

- Look for the way in which a text sets out the author’s position:
  - The text moves from stage to stage logically
  - The text moves towards a conclusion

- Note that this is a continuous process
  - So at paragraph level, we are asking what is the central ‘point’, how’s it explored/defended by evidenced discussion; what’s the conclusion/transition to the next paragraph
  - We should expect the whole paragraph to be unified around a central point that then unfolds a line of reasoning
Identifying the line of reasoning in a text

- The line of reasoning is a case that is continually being made
  - Backed up by evidence
  - Backed up by examples
  - Leading to a conclusion

- Note that if there are any ‘weak links’ in this ‘chain’, the ‘chain’ itself will be weakened or will break, to use a metaphor!

- Note that the line of reasoning is a stage–by–stage process
2. Critically evaluating the line of reasoning

- The line of reasoning can be critically evaluated by examining how it contains:
  
  1. Relevant, contributing and sufficient propositions/reasons
     - Does everything in the ‘argument’ cohere?
     - Is it all relevant?
     - Does everything provided as evidence/reasons for something hold true?
     - If a different conclusion is highly probable – i.e. there is an alternative conclusion – then the line of reasoning is flawed
  
  2. Logical progression
     - Do points/stages move from one to another in a logical way
     - If A, then B, then C not C >A>B
     - The “P double E” position – point; evidence; evaluation/conclusion
Critically evaluating the line of reasoning

3. False premises
   ◦ If the initial conceptual starting point is false, then the rest of the ‘argument’ breaks down
   ◦ The ‘meta-position’ is wrong!
     • ‘Smoking damages your health’/’Outdoor exercise is good for you’

4. Flawed reasoning
   ◦ Assuming a causal connection
     • “I revised hard for that exam and got a low mark, so next time I won’t revise – so I should get a higher mark”
Critically evaluating the line of reasoning

- Drawing general conclusions based on one or two examples
  - “The woollen jacket caused a serious skin-reaction in a 3 year old; therefore sales of woollen garments to children should be banned”
- Inappropriate comparisons
Many texts make implicit judgements about an issue
They may appear fully ‘academic’, and indeed be peer-reviewed, but they carry certain hidden assumptions or agendas
They may not provide all necessary information
They may be highly evidential, yet fail to acknowledge alternate interpretations
Many of these issues are particularly relevant to statistics/data
To be truly critical, we need to try and detect implicit as well as explicit reasoning
4. Identifying and evaluating evidence in a text

- This may be relatively straightforward to identify.
- For example, an academic paper that uses tables, charts and diagrams and is supported by statistics and data is perfectly transparent about the types of evidence it uses.
- However, it may be useful to try and summarise the range of evidence available before we evaluate the evidence itself.
- What does this range/choice of evidence suggest about the writer’s ‘argument’?
5. Evaluating the evidence according to valid criteria

- The next step is clearly to evaluate the evidence
- It is important to use valid criteria to evaluate the evidence
- These criteria can be summarised as follows:
  - Check the date of the research
    - Note that in some areas (Law; Psychology; Natural Sciences) comparatively recent material may be ‘out of date’
  - Check the source of the information
    - Is it a fully peer-reviewed academic source?
Evaluating the evidence according to valid criteria

- Check for bias
  - E.g. pressure groups, charities etc.
- Beware the allure of statistics and data
  - These always look ‘authoritative’
  - But there may be issues re selectivity, interpretation, size of sample etc.
- Beware obvious ‘persuader’ words
  - Most/many/surely etc.
- Be sceptical about percentages
  - 60% could be 6 ex 10 (very few people...), or 60 ex 100 or 600 ex 1000 (a lot of people!)! : % alone is not necessarily significant!
Evaluating the evidence according to valid criteria

- Check sample size, where statistics are involved
- Check the sample is truly representative
  - In both quantitative and qualitative research
- Check the conditions of data research
  - With questionnaires etc. were there any inducements that affected the respondents?
  - Under what circumstances were the questionnaires given out etc.
- Check for emotive language
  - ‘cruel’; ‘intolerable’; ‘ridiculous’; ‘natural’; ‘normal’
6. Identifying the writer’s conclusions

- Look for the writer’s conclusions
- Clearly, these will come at the end of a piece of academic writing
- There may also be ‘sub-conclusions’ or signpost statements
  - Points in a piece of writing where a writer sums up what’s been said before and makes a transition to a new area
- Look for ‘trigger’ words – ‘hence’; ‘thus’; ‘therefore’
7. Deciding if the evidence supports these conclusions

- Does the conclusion rest on a (hidden) false assumption?
- The preceding writing may be evidenced, referenced, academically ‘reliable’ etc. but the conclusion drawn from it may not be sound.
- e.g. The idea that young children are negatively affected by mothers going out to work (Bowlby, 1951) subsequently criticised by many e.g. (Clarke–Stewart, 1988)
- Bowlby’s sample (post-war, traumatised children) and his own ideological position have been critiqued as affecting the conclusion he draws.
Summary

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GOOD LUCK...

- ...For developing your critical thinking skills!
- The Student Learning Advisory Service
  - [www.kent.ac.uk/ulet/learning](http://www.kent.ac.uk/ulet/learning)