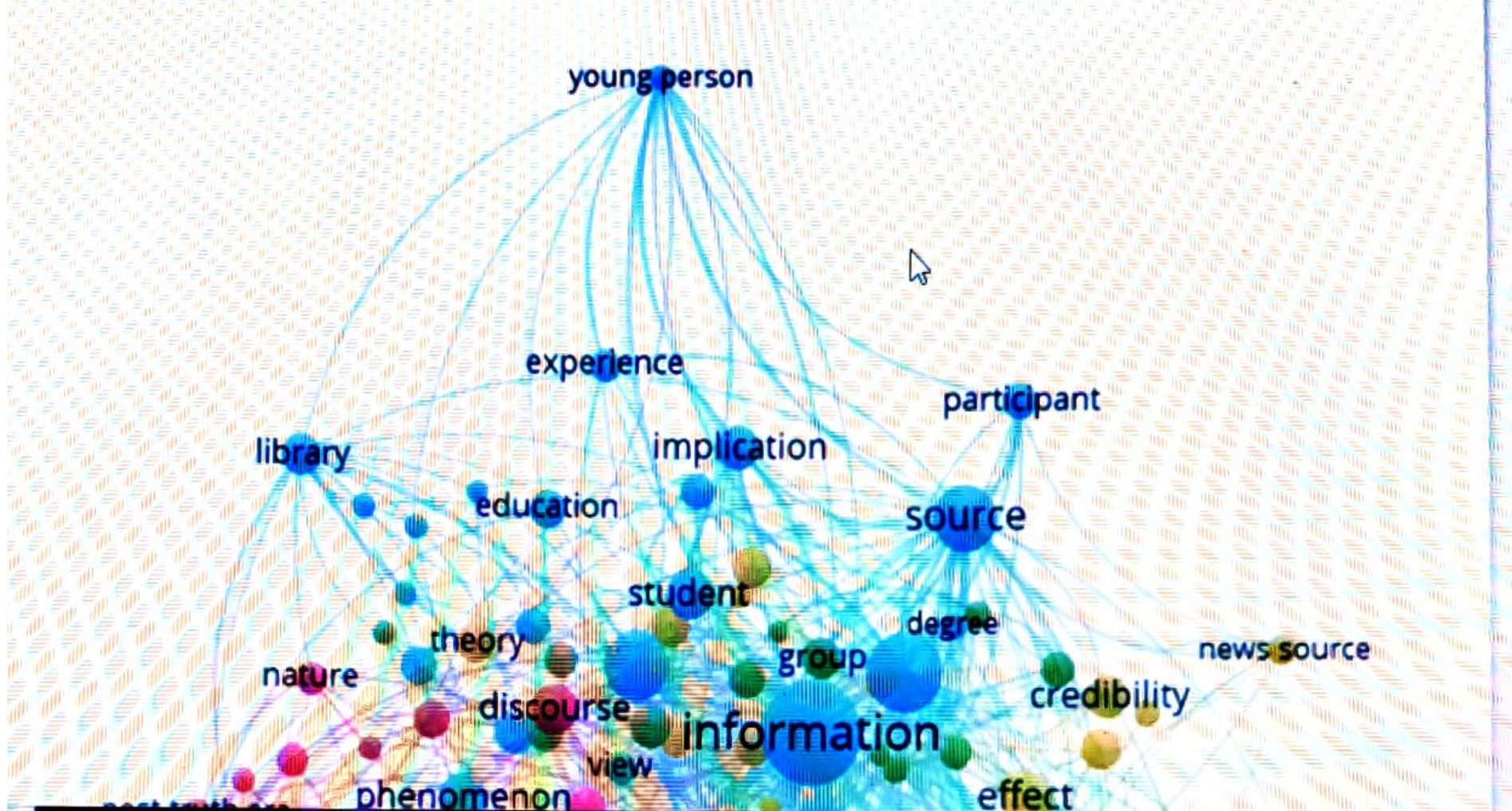
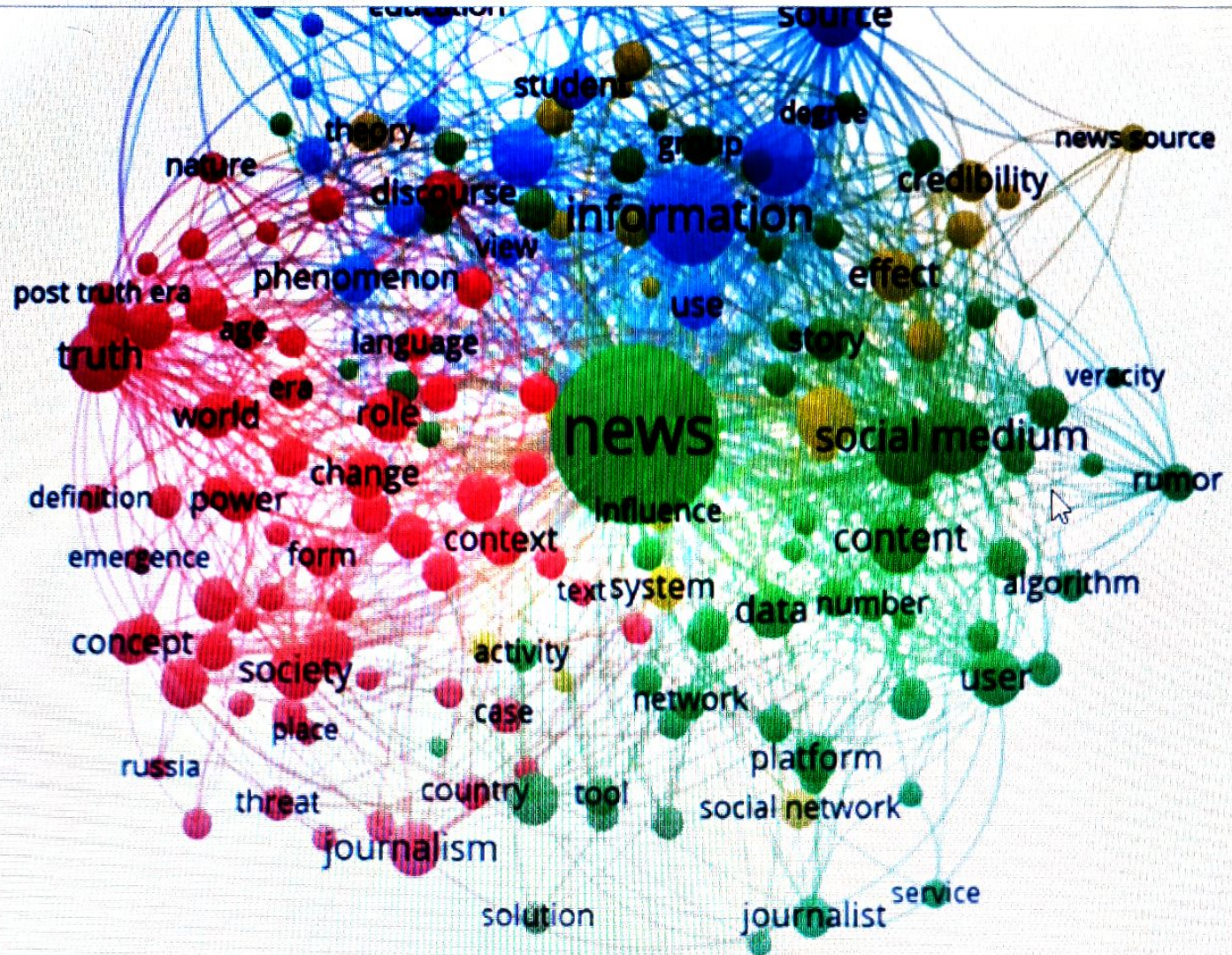


"The first thing we all need to know about information online is how to detect crap, a technical term I use for information tainted by ignorance, inept communication, or deliberate deception. Learning to be a critical consumer of Webinfo is not rocket science. It's not even algebra. Becoming acquainted with the fundamentals of web credibility testing is easier than learning the multiplication tables. The hard part, as always, is the exercise of flabby think-for-yourself muscles."

Rheingold, H. (2009) 'Crap Detection 101', SFGate.com, 30-07-2009, <https://blog.sfgate.com/rheingold/2009/06/30/crap-detection-101/>





Map of key descriptors about fake news.

Source: Santiago Alonso García, Gerardo Gómez García, Mariano, S. P., Moreno Guerrero, A. J., & Carmen Rodríguez Jiménez. (2020). The Impact of Term Fake News on the Scientific Community. *Scientific Performance and Mapping in Web of Science, Social Sciences*, 9(15), 73. <http://dx.doi.org/ezproxy.uws.edu.au/10.3390/socsci9050073>. Figure 5, page 9.

Learning Statement

Investigating is a cognitive process (i.e. you need to think about it) that requires critical thinking. In this module, students will consider how we know and think about the world around us, and what might influence us to perceive social problems in certain ways.

1. What is 'thinking'? What is 'critical thinking'?
2. What internal (mental) processes influence our cognition (how we think, perceive and understand) of the world?
3. What is knowledge? What is information? What does it mean to know the world?
4. Why is literacy a fundamental skill of citizenship?
5. What external factors influence our cognition of the world?

Module Learning Questions

This questions are designed to help you frame your study in this module. By the end of the module, you should be comfortable discussing these with family or friends, colleagues., tutors or others.

- What is "thinking"? What is 'critical thinking'?
- What internal (mental) processes influence our cognition (how we think, perceive and understand) of the world?
- What is knowledge? What is information? What does it mean to know the world?
- Why is literacy a fundamental skill of citizenship?
- What external factors influence our cognition of the world?



Theory - Critical thinking: an academic skill and a life skill



A note before getting started **A↓**

The theory covered in this learning module is designed to help you develop your critical thinking skills, especially in relation to how information is used and abused.

In this module, you can choose from a variety of resources related to: **REMEMBER THE RULE - CHOICE IS KEY HERE, CHOOSE MATERIALS THAT INTEREST YOU**

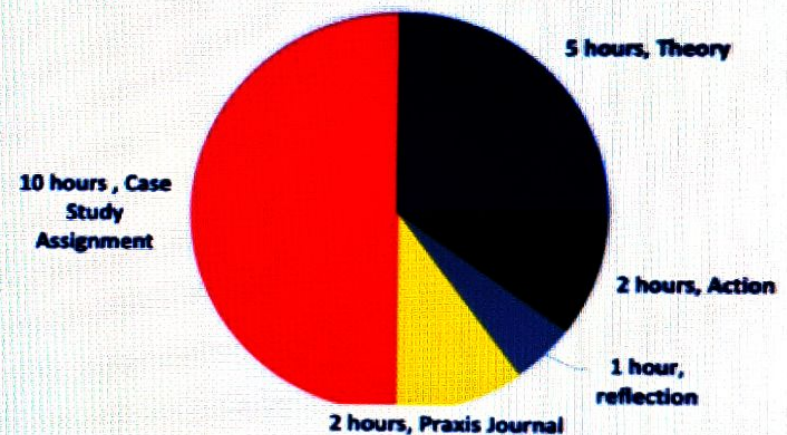
- A. Thinking: what is it? When do we do it badly? (there is a huge variety of resources provided here, to cater to the 14+ different disciplines and degrees that you will be studying)
- B. Critical Thinking: the good kind of thinking!
- C. Misinformation, Disinformation and Fake News. (Don't freak out here, this section contains a huge variety of resources that are intended to be a starting point for your research)

You should be guided by the 5 module questions, and seek to answer them (as a way of checking your understanding) using a variety of video and reading resources, and the Action tasks, as well as your own thoughts and reflections.

Note: Module 2 covers 2 weeks worth of work. this means you need to devote 20 hours of study time. An indicator how to break this down is:

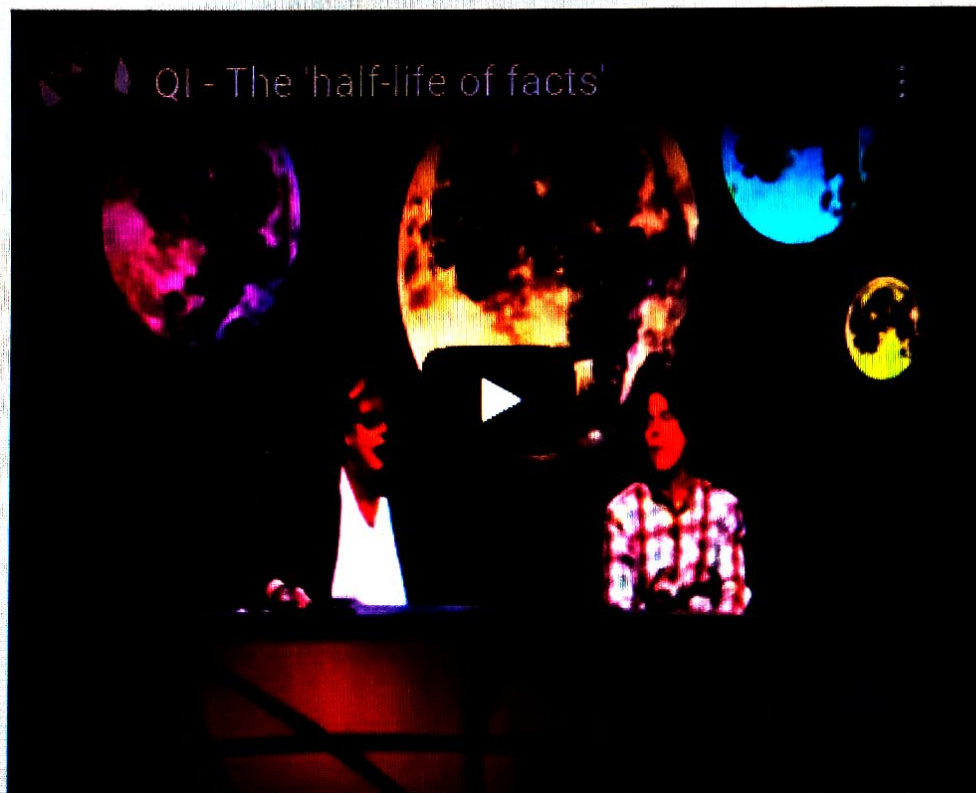
- **Theory:** 5 hours (remember readings should take no more than 20-30 mins, any longer and you are reading too deeply). Choose resources that help you to develop your answers to the module questions. **DO NOT EXAMINE EVERYTHING!!**
- **Action:** 2 hours (active engagement within the physical / virtual classroom OR completion of the independent-learning task). This earns you 1 engagement mark.
- **Reflection:** 1 hour of self-reflection that helps you to begin to develop your praxis journal module two entry.
- **Praxis Journal Module 2 entry (draft):** 2-hours (you will need to dedicate some more time for editing as you prepare for the final submission in June).

HOW SHOULD I SPEND MY TIME??



A thought bubble...

Have a look at the two resources below, and then think about the question that follows.



QI - The 'half-life of facts'

User: n/a - Added: 16/02/15

YouTube URL: <http://www.youtube.com/watch?v=efj4VOnCG6k>

Reading:

- Oxford University Press (2016) "Post-Truth 2016 Word of the Year" <https://languages.oup.com/word-of-the-year/2016/>

Questions:

- How do you know the 'facts' that you are trusting are the truth?
 - What thought processes (if any) do you use to believe facts are true?
- What are some 'facts' that have changed over your life time? (or even in the last 5-10yrs)



A. Thinking: the fast and the slow A↓

What is thinking?

"When you are asked about what you are thinking about, you can normally answer. You believe you know what goes on in your mind, which often consists of one conscious thought leading in an orderly way to another. But that is not the only way the mind works, nor indeed is that the typical way. Most impressions and thoughts arise in your conscious experience without your knowing how they got there. You cannot trace how you came to the belief that there is a lamp on the desk in front of you, or how you detected a hint of irritation in your spouse's voice on the telephone, or how you managed to avoid a threat on the road before you became consciously aware of it. The mental work that produces impressions, intuitions, and many decisions goes on in silence in our mind." (Kahneman 2011 pg4)

Thinking fast and slow

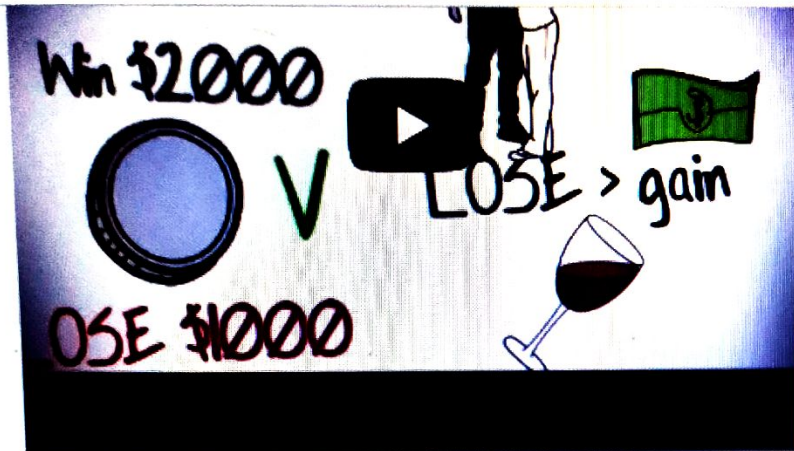
In 2011, a psychologist named Daniel Kahneman published a book titled, "Thinking, fast and slow" (the library has several copies of this book: Kahneman, D., 2011. *Thinking, fast and slow* 1st ed., New York: Farrar, Straus and Giroux. <https://west-sydney-primo.hosted.exlibrisgroup.com/permalink/f/1vt0uuc/UWS-ALMA2186768870001571>). Though I wouldn't recommend reading it at this time,,

Kahneman presents a detailed discussion of his theories of thinking, primarily that our brains have 'two speeds' (or two systems). The first system is the fast speed of your mental processor (i.e. your brain), helping you to make many mental calculations automatically (and often unconsciously) whilst spending little energy. The second system is the slow speed of your mental processor. It uses a great deal of mental energy to process complex mental processes that require us to pay attention to them. In this module 2, we want to help you to develop your more complex thought processes, to perhaps speed them up, or make them more powerful, so that you can be a more critical thinker.

Suggested Video:

THINKING, FAST AND SLOW BY DANIEL KAHNEMAN | ANIMATED BOOK SUMMARY





YouTube URL: <http://www.youtube.com/watch?v=uqXVAo7dVRU>

Bias

Bias is unavoidable. We all have our personal (and social/cultural) backgrounds, experiences, positions and make our perspective on the world unique. Most social scientists believe these differences should be explored and celebrated, and that a good researcher knows their own biases in order to identify others. In this context, bias is not bad: bias is unavoidable, and avoiding it is bad. Perhaps you have heard the terms: *objectivity* and *subjectivity*. The objective researcher believes that who they are has no impact on their research process nor the findings that they make. The subjective researcher believes that they are inherently part of the process, and only by knowing their own biases can they identify the perspectives of others.

However, there are also 'biases' which operate as mental shortcuts. The three main kinds of bias that impact upon our perceptions, judgements, and decision-making processes, are:

1. Confirmation bias: we zero in on evidence that supports what we already believe
2. the Dunning-Kruger effect: the human tendency to think we know more than we do as well as to underestimate what we don't know
3. Cognitive dissonance: when people encounter actions or ideas they cannot reconcile psychologically with their own beliefs, they experience discomfort. They then try to resolve their discomfort by arguing away the new evidence until it's consistent with their own beliefs

In the video below, J. Marshall Shepherd, a meteorologist, climate scientist and geographer explains how confirmation bias, the Dunning-Kruger effect and cognitive dissonance impact what we think we know -- and shares ideas for how we can replace them with something much more powerful: knowledge.

TED 3 kinds of bias that shape your worl...





YouTube URL: <http://www.youtube.com/watch?v=LcNvkH54UYg>

Relevant Readings (these are all applied examples from The Conversation - i have tried to cover all the disciplines studying this unit):

Kahneman, (and Worth in his Summary of Kahneman's work) both discuss these three biases. The following is a list of articles from The Conversation that discuss each of these biases in an applied way (i.e. in a real world rather than theoretical context):

• **Confirmation bias**

- Grant, W. (2015) 'Trolling our confirmation bias: one bite and we're easily sucked in', *The Conversation*, June 2 2015, <https://theconversation.com/trolling-our-confirmation-bias-one-bite-and-were-easily-sucked-in-42621> - this article is about how we became 'convinced' that chocolate is good for us
- Moreton, S. (2016) 'From 'fascists' to 'feminazis': how both sides of politics are biased in their political thinking', *The Conversation*, December 5th 2016, <https://theconversation.com/from-fascists-to-feminazis-how-both-sides-of-politics-are-biased-in-their-political-thinking-69493> - this article discusses the ubiquity of confirmation bias
- Cook, J. (2012) 'How do people reject climate science?', *The Conversation*, September 6th 2012, <https://theconversation.com/how-do-people-reject-climate-science-9065> - this article discusses how confirmation bias is used by 'climate deniers'.
- Petherick, W. (2018) 'It's better light, not worse behaviour, that explains crimes on a full Moon', *The Conversation*, September 24th 2018, <https://theconversation.com/it-worse-behaviour-that-explains-crimes-on-a-full-moon-101524> - this article will appeal to

sts-to-feminazis-how-both-sides-of-politics-are-biased-in-their-political-thinking-69493



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- Moreton, S. (2016) 'From 'fascists' to 'feminazis': how both sides of politics are biased in their political thinking', *The Conversation*, December 5th 2016, <https://theconversation.com/from-fascists-to-feminazis-how-both-sides-of-politics-are-biased-in-their-political-thinking-69493> - this article discusses the ubiquity of confirmation bias
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- Petherick, W. (2018) 'It's better light, not worse behaviour, that explains crimes on a full Moon', *The Conversation*, September 24th 2018, <https://theconversation.com/its-better-light-not-worse-behaviour-that-explains-crimes-on-a-full-moon-101524> - this article will appeal to everyone who believes that the full Moon is the cause of hospital admissions, anti-social and criminal behaviour, and greater general wackiness (and werewolves!).
- **Dunning-Kruger Effect**
 - Lewandowsky, S. and PAncoast, R. (2014) 'Are you a poor logician? Logically, you might never know', *The Conversation*, November 6th 2014, <https://theconversation.com/are-you-a-poor-logician-logically-you-might-never-know-33355> - This article explores decision making processes: what helps and what holds us back
 - Motta, M., Sylvester, S. & Callaghan, T. (2018) 'Why vaccine opponents think they know more than medical experts', *The Conversation*, July 12th 2018, <https://theconversation.com/why-vaccine-opponents-think-they-know-more-than-medical-experts-99278> - this is a look at how the Dunning-Kruger effect influences the cognitive biases of anti-vaxxers
 - The original article: Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121-1134. <https://doi-org.ezproxy.uws.edu.au/10.1037/0022-3514.77.6.1121> - or **Dunning and Kruger.pdf**
- **Cognitive Dissonance**
 - Cardwell, B. and Halberstady, J. (2017) 'Religion may alter your psychology, even if you're a non-believer', *The Conversation*, December 21 2017, <https://theconversation.com/religion-may-alter-your-psychology-even-if-youre-a-non-believer-83506> the role of cognitive dissonance and unconscious beliefs linked to religion
 - Gringart, E. (2015) 'Employers need more than money to hire older workers', *The Conversation*, May 20th 2015, <https://theconversation.com/employers-need-more-than-money-to-hire-older-workers-41490> - this article looks at how cognitive dissonance can counter negative attitudes employers might hold towards employing older adults
 - March, E. (2020) 'Why can't some people admit defeat when they lose?' *The Conversation*, November 10 2020, <https://theconversation.com/why-cant-some-people-admit-defeat-when-they-lose-149740> - this article looks at how various psychological theories (including cognitive dissonance) contribute to the denial of defeat: the article focuses on Donald Trump's inability to concede the 2020 US election.

Consolidation Task:

Test your attention!

Skoda (yes the car company!) have recently released a new advert that acts as an Attention Test: See how good your concentration is!



Test your attention!

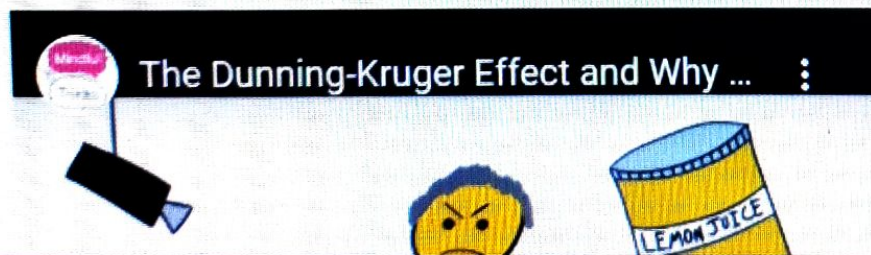
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YouTube URL: http://www.youtube.com/watch?v=Sq_aENVPgks

- How good was your attention?
- Many of us believe that we are excellent multi-taskers (switching between assignments, social media, web-surfing, music, videos, messaging, etc. etc.), what alterations to your study habits do the results in the attention and multi-tasking tasks suggest?

watch the following video: **The Dunning-Kruger Effect and Why You're Dumber Than You Think**



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YouTube URL: <http://www.youtube.com/watch?v=HzyNXwF1vNg>

Reflective Questions

- What insights can you take from the Dunning-Kruger effect with regards to your own study performance (or performances in other arenas)?
- What about how your peers see themselves? Or you see them?

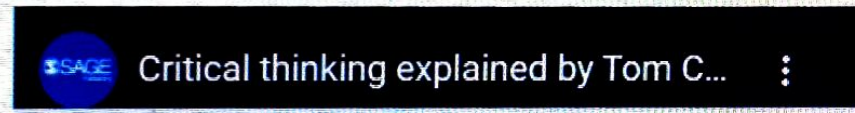


B. Critical Thinking A↓

The main type of 'thinking' that you will hear your university educators refer to is 'critical thinking'. This concept is not an easy one to describe (succinctly), and there are many books/journal articles in the library that will answer the question "What is critical thinking?" In this unit, we want you to adopt an attitude whereby you are looking to strength your critical thinking skills, so that you can question the world around you.

For now, a short introduction is this video by Tom Chatfield

- **Video: Chatfield, T. (Academic). (2018). What is critical thinking? [Video]. SAGE Research Methods Video: Practical Research and Academic Skills <https://www-doi-org.ezproxy.uws.edu.au/10.4135/9781526443540>**



YouTube URL: <http://www.youtube.com/watch?v=SY-CMrGp9Xs>

- It might also be useful to watch this Video: 10 Commandments for Critical Thinking by Tom Chatfield



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YouTube URL: <http://www.youtube.com/watch?v=svNTjp5pgKl>

- You can view Tom Chatfield's entire Critical Thinking playlist here: <https://www.youtube.com/playlist?list=PL6OjxTFKMuaZjIm2GsxKwUNLrgEIDgm-B>

Suggested Reading:

Rather than pour over dry textbooks that list in an abstract way the fundamentals and theories of critical thinking, I suggest reading:

- **Chapter 1: Critical Thinking** in hooks, B 2009, Teaching Critical Thinking : Practical Wisdom, Taylor & Francis Group, Florence. Available from: ProQuest Ebook Central. [24 February 2021].



YouTube URL: <http://www.youtube.com/watch?v=svNTjp5pgKl>

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Consolidation Task:

Thinking about the ideas presented by both bell hooks and Tom Chatfield:

- why do you think critical thinking is important for students, professionals, and/or citizens?
- How do children differ from adults when it comes to critical thinking? Why does bell hooks consider children as 'predisposed' to critical thinking?
- Do you think that you still have the same abilities to think critically, as you did when you were a child?
- What influence has your formal education had on your critical thinking skills?
- What influence has your informal education had on your critical thinking skills?



- What influence has your formal education had on your critical thinking skills?
- What influence has your informal education had on your critical thinking skills?

C. Fake News: Misinformation and Disinformation

Your first major assessment, **the Case Study assignment**, asks you to explore examples of misinformation, disinformation and fake news. This section of the module is designed to introduce you to these concepts to facilitate your analysis and discussion in the assessment task. The resources that are included here (particularly the scholarly resources) are a good place to start when developing your reading list for the assessment.

For the assignment, you need to be able understand and explain in 1 or 2 sentences: What are misinformation, disinformation and 'fake news'? Why are they problematic? And how might we be able to counter them?

Videos:

- Aral, S. (2020) 'How we can protect truth in the age of misinformation', TED TALKS, January 17th 2020 -



YouTube URL: <http://www.youtube.com/watch?v=-7ORAKULeI4>

- Edmans, A. (2018) 'What to trust in a "post-truth" world', Ted Talks, December 4th 2018



YouTube URL: <http://www.youtube.com/watch?v=-7ORAKULeI4>

- Edmans, A. (2018) 'What to trust in a "post-truth" world', Ted Talks, December 4th 2018



YouTube URL: <http://www.youtube.com/watch?v=rpjx5VLQMxk>

- Documentary: **Fake: Searching for Truth in the Age of Misinformation** - this document was produced by Connecticut Public Television in February 2020 - THIS DOCUMENTARY GOES FOR 1 HOUR
 - Given the sheer volume of news available, how can the average person separate fact from fiction? This series draws from common sense, critical thinking skills, and universal standards of journalism to give viewers the tools to discern fact from fiction in news reports, identify fake news, and evaluate the biases of real news.

📁 Action - Sources of Information and Sources of Disinformation ⬆️⬇️





Misinformation and Disinformation A↓

Liberal MP Katie Allen entered the debate over Australia's Greenhouse Gas emissions (in November 2019), when she told ABC TV that the Coalition government (the combined Liberal and National Parties) had *"done a great job"* of reducing emissions.

Dr Allen was immediately accused of lying by Labor's Pat Conroy, who said she was *"factually wrong because emissions had risen every year since 2014."*

"They have fallen since 2005," she said in response. *"They are the lowest they have ever been."*






Your task is to work out whether Dr Allen is correct in claiming Australia's emissions have fallen since 2005, and are the lowest they have ever been (in November 2019)?

Steps for fact checking:

- First reactions:
 - What is the claim?
 - Do you instinctively trust what the claimant is saying? Why or Why not?
 - What impact does the claim have when you don't know if it is true or not?
- Fact checking:
 - Who is making the claim? Do they have 'authority' to make that claim? Why are they making the claim?



▶ 0:00 / 2:17   

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 - What impact does the claim have when you don't know if it is true or not?
- Fact checking:
 - Who is making the claim? Do they have 'authority' to make that claim? Why are they making the claim?
 - What evidence do they provide?
 - Is there other information on the internet that gives you evidence for or against this claim?
 - Using the library search engine (library.westernsydney.edu.au), what scholarly resources can you find to factcheck the story? What do these sources suggest - is the claim credible or not?
- Countering the claim:
 - How do you think that we can convince the general public of the 'truth'? (get students to think about their friends and family, and/or the wider public)

Earning your Module 2 Engagement Mark (synchronous)

Please complete the following task in order to earn your Action Engagement Mark for Module 2.

There are 4 multiple choice questions. This task should take you no more than 5 minutes.