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Unlocking Critical Thinking for Undergraduates

Luke Geraghty and Helen Bond

February 17th, 2025

Teams Etiquette



- This session is **being recorded**
- **Please mute your microphone** - this helps reduce background noise
- To ask a question, **type it into the chat** or wait until the workshop's end (we'll have 5 minutes then)
- There will be group discussions, but **during the tasks, please avoid asking questions over your mics** so other attendees can work undisturbed

Who We Are



Luke Geraghty

Digital and Information Skills
Officer

Helen Bond

Information Skills Coordinator

What Is iSkills?



- Bodleian Information Skills (iSkills) workshops help students and staff at the University **improve their abilities in information discovery, research, and scholarly communication** across disciplines
- Workshop topics include copyright, Open Access publishing, reference management software, and research data management
- Workshops are **free** and run throughout each academic term

Today's Session



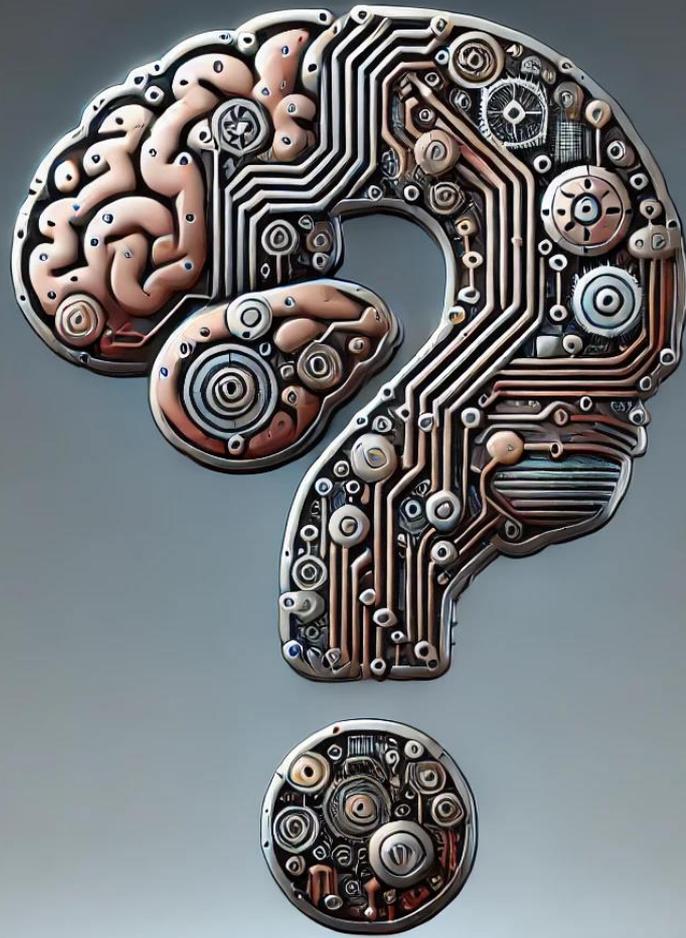
- **2 hours via Microsoft Teams**, with a 10-minute break
- Designed to help you **question assumptions** and develop **information discovery and search strategies**
- **This session will cover:**
 - What is meant by critical thinking
 - Why critical thinking is important
 - A method for evaluating information
 - An introduction to conducting research
 - How to evaluate information sources in SOLO

Learning Outcomes



By the end of this session, you'll be able to:

1. Describe what critical thinking is
2. Understand a critical thinking method
3. Apply the method to your academic work
4. Explain the fundamentals of conducting research, including how to evaluate information sources in SOLO



What Is Critical Thinking?

Introduction



- Critical thinking **isn't** just being negative or finding flaws
- It means:
 - **Analysing information** – breaking down complex ideas to understand the key points
 - **Evaluating evidence** – checking the credibility and relevance of information
 - **Justifying arguments** – using clear, structured logic to connect ideas and create your own reasoned conclusions



Icebreaker: Why Do You Think Critical Thinking Is Important?

Why Critical Thinking Matters (1)



- We live in an age of **information overload**
- It's becoming increasingly difficult to separate **fact** from **fiction**
- Some notable problems:
 - AI deepfakes
 - Algorithm-driven content – curating information based on past behaviour
 - Clickbait and sensationalism
 - Fake news
 - Social media echo chambers

Why Critical Thinking Matters (2)



- It also has **implications for academia**
- Professor Dorothy Bishop at Oxford offers a local example on fake scientific papers:
 - “The level of publishing of fraudulent papers is creating serious problems for science. In many fields it is becoming difficult to build up a cumulative approach to a subject, because we lack a solid foundation of trustworthy findings. And it’s getting worse and worse.”¹

¹ McKie, R. (2024) “‘The situation has become appalling’: fake scientific papers push research credibility to crisis point”, *The Guardian*, 3 Feb 2024.

(see “References” for full citation)

Common Barriers

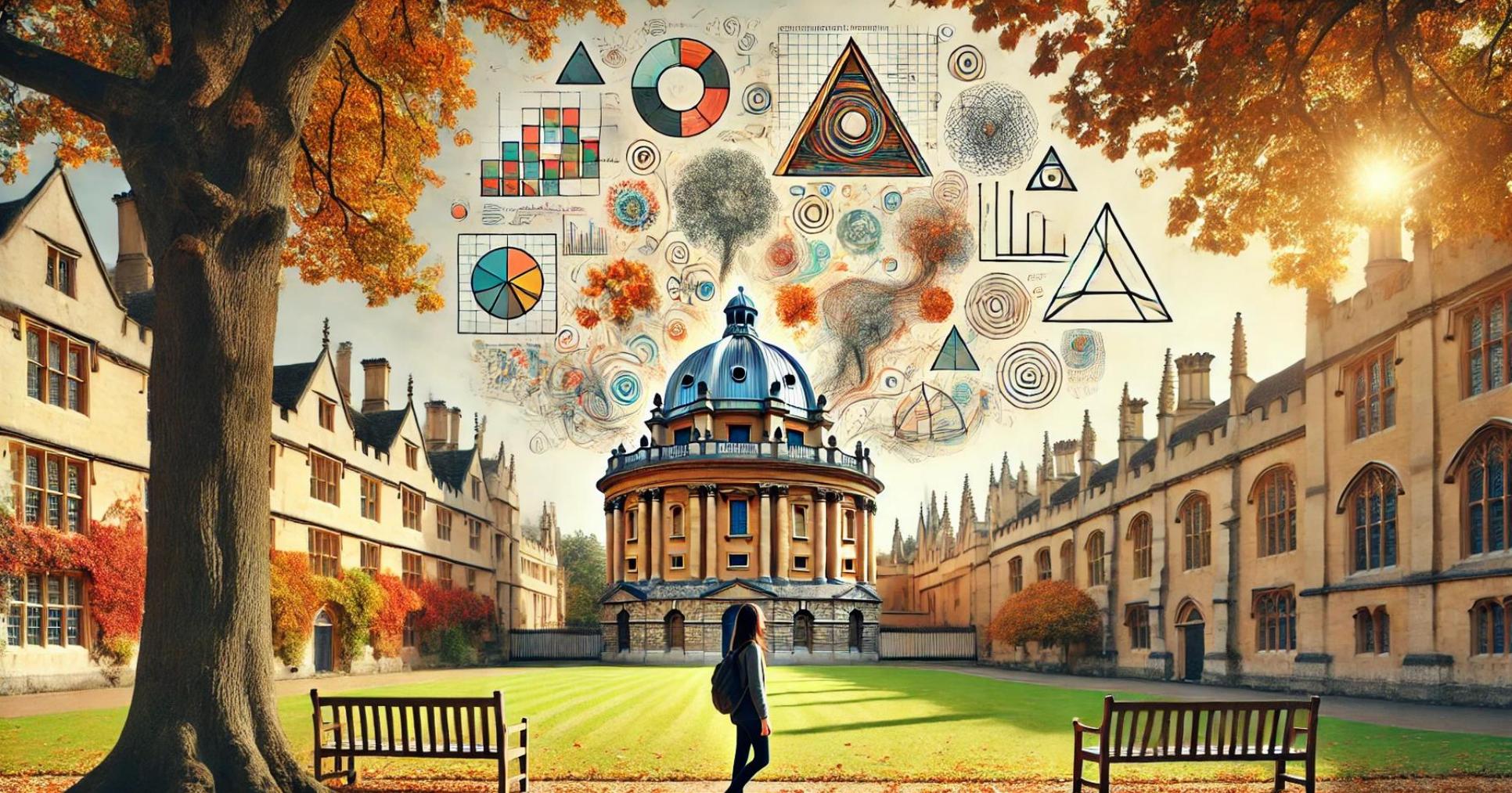


- **Confirmation bias** – using new information only to confirm existing beliefs e.g. ignoring sources you don't agree with
- **Overreliance on authority** – accepting information from professors, textbooks, or widely-read media, without questioning it
- **Time pressure** – Chatfield (2022) highlights that critical thinking cannot happen in a rush; we must pause and allocate our attention

Barriers at Oxford?



- **Academic traditions** – Oxford is an old, prestigious institution, with viewpoints that can be overly conventional or rigid
- **Imposter syndrome** – “Sorry, we made a mistake. You have to leave.” Many undergraduates here experience the fear of being “found out”
- **Vast academic resources** – the number of libraries, the (often not metaphorical) tomes of information...



A Method for Critical Thinking

Overview



- There is **no single defining model or method** for critical thinking
- Many university libraries have developed or adapted frameworks e.g. University of Leeds Library
- Some others you may want to investigate are the **RED Model** by the educational and learning company Pearson, and the **SIFT method by Mike Caulfield**, which helps to determine whether online content can be trusted

Engaging Critically with Sources (1)



- The approach we'll cover today is the **CRAAP Test** (Blakeslee, 2004)
- **Currency, Relevance, Authority, Accuracy, and Purpose**
- **Currency:**
 - When was the source written and published?
 - Has the information been recently updated?
- **Relevance:**
 - Does the source thoroughly cover your research topic or only one aspect?
 - To what extent does the source answer your research question?
 - Is the source popular or scholarly?

Engaging Critically with Sources (2)



- **Authority:**
 - Who is the author (individual(s), company, organisation)?
 - Is there any information that leads you to believe the author is credible or an expert?
 - Does the author provide citations?
- **Accuracy:**
 - Can facts or statistics be verified through another source?
 - Does the information match what you've found in other sources?
- **Purpose:**
 - Is the author trying to persuade, promote, or sell something? Who is their audience?

Applying the Test (1)



- Let's look at a typical, academic information source: a **journal article**
- **Currency:**
 - **Possible questions:** When was the article published? Has it been updated?
 - For rapidly changing fields like technology or medicine, newer articles may be preferred
- **Relevance:**
 - **Possible questions:** How relevant are the abstract and conclusion to your topic? Is the content too technical or simplistic for your academic level?

Applying the Test (2)



- **Authority:**
 - **Possible questions:** What are the credentials and affiliations of the authors? Does their expertise in the subject match your needs? Is the journal reputable and peer-reviewed? Who is the publisher?
- **Accuracy:**
 - **Possible questions:** Is the journal article's information supported by evidence (look for references and data)? Do other reliable sources corroborate its facts or findings? Are there spelling, grammar, or typographical errors?

Applying the Test (3)



- **Purpose:**
 - **Possible questions:** Is the journal article's tone impartial (balanced and scholarly)? Could the article have been written to persuade or sell something, rather than inform? Are there biases or conflicts of interest, especially in the funding or affiliations of the authors?

Activity: Applying the Test to Information Sources (1)



- We'd like you to look at **Activity 1** on our **task sheet**
- There are several scenarios so you can try out the CT model on different sources:
 1. Journal Article: “The study of gesture in cognitive linguistics: How it could inform and inspire other research in cognitive science”
 2. Website Article: “A generational divide: differences in researcher attitudes to AI”

Activity: Applying the Test to Information Sources (2)



- Take **20 minutes** to work individually on the exercises
- We'll then have a discussion about them together
- Please **do either of the exercises**, regardless of numbering, and only try out multiple exercises if you have time



Discussion: Applying the Test to Information Sources



10-Minute Break



An Introduction to Conducting Research

Research Steps (1)



- 1. Develop your research question or interpret your assignment** – understand what you're trying to answer, how much time you'll spend on research vs. writing, and identify keywords for your searches
- 2. Locate information** – use search strategies to find credible sources; prioritise academic and library databases e.g. SOLO
- 3. Evaluate your material** – more on this shortly
- 4. Write notes and organise your research**

Research Steps (2)



- Researching a topic is often **more iterative than linear**, so bear in mind that the steps are flexible
- It's **common to revisit earlier steps** in the process as your research evolves

Primary vs Secondary Sources



- Primary sources are **direct, first-hand accounts** of an event, study, or original data
 - Could be historical documents, interviews, journal articles reporting on experiments, original artworks
- Secondary sources **interpret, analyse, or summarise primary sources**
 - Articles, biographies, reviews...

Reading Strategies



- Most courses and modules come with a reading list
- This does much of the initial work of long-listing sources for you
- **If you don't have a list or are expanding on it**, consider a reading strategy that involves:
 1. A text that provides a brief, accessible introduction to the field
 2. A core, reputable textbook
 3. Seminal older publications
 4. Key recent publications

SOLO

SEARCH OXFORD
LIBRARIES ONLINE

Using SOLO to Find and Evaluate Information Sources

What Is SOLO?



- SOLO stands for **S**earch **O**xford **L**ibraries **O**nline
- It's the online catalogue for the University's libraries, including the Bodleian Libraries and most college and faculty libraries
- You can use SOLO to find articles, books, databases, e-books, maps, research papers, theses, and more

SOLO

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NEED
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SIGN IN

MENU

Enter your search here

ADVANCED SEARCH

Announcements



The accessibility of SOLO has been improved to make it easier to navigate when zoomed in or using a screen reader. Further accessibility improvements pending. See our [accessibility statement](#) for further details.



The British Library is currently dealing with a major system outage and as a result there is no access to [Electronic Legal Deposit content](#). This includes non-print legal deposit books, scores, journal articles and issues, and the UK Web Archive. Access to other BL services including [Inter Library](#)

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Useful links

- [Bodleian Libraries Home Page](#)
- [Subject & Research Guides](#)
- [Find A Library](#)
- [Journal Search | BrowZine](#)
- [Databases A-Z](#)
- [Special Collections Catalogues](#)
- [Digital Bodleian](#)
- [Exam Papers](#)
- [ORA \(Oxford University Research Archive\)](#)
- [ORLO \(Oxford Reading Lists Online\)](#)

Signing in to SOLO

Search Everything ▾



ADVANCED SEARCH

Announcements

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Getting Help

If you have any questions or need help making the most of the extensive electronic resources available to you then please:

- [use our Live Chat service](#)
- contact us via reader.services@bodleian.ox.ac.uk

Useful links

- [Bodleian Libraries Home Page](#)
- [Subject & Research Guides](#)
- [Find A Library](#)
- [Journal Search | BrowZine](#)
- [Databases A-Z](#)
- [Special Collections Catalogues](#)
- [Digital Bodleian](#)
- [Exam Papers](#)
- [ORA \(Oxford University Research Archive\)](#)
- [ORLO \(Oxford Reading Lists Online\)](#)

othello jealousy

Search Everything

ADVANCED SEARCH

Active filters

Articles x

Remember all filters

Reset filters

Sort & Filter Results

Include results without full-text access

Sort by Relevance

Show only: ^

Available Online

Open Access

SELECT ALL 0 selected PAGE 1 1-50 of 194 Results Save query

1



ARTICLE

Just How Remarkable was the 'Jealous Moor'? Othello, Jealousy and Early Modern Racial Stereotypes

Irish, Bradley J.

Shakespeare (London, England), 2024-01, p.1-17

PEER REVIEWED

Online Access >



2



ARTICLE

Delusional jealousy (othello syndrome) in 67 patients with Parkinson's disease

Kataoka, Hiroshi ; Sugie, Kazuma

LAUSANNE: Frontiers Media Sa

Frontiers in neurology, 2018-03, Vol.9, p.129-129, Article 129

“ Othello syndrome (OS) is a type of paranoid delusional jealousy, characterized by the



SOLO's Search Results

Evaluating Sources Using SOLO



- We'd like you to look at **Activity 2** on our **task sheet**
- Using your own research topic or one of the examples in the task sheet, submit a keyword search in SOLO and apply the CRAAP test to identify useful (or un-useful!) information sources to pursue reading
- Take 20 minutes to work individually, and we'll then have a discussion about them together



Discussion: Using SOLO for Research

Wrap-Up: Next Steps



- iSkills runs a separate workshop called **“Scholarly literature for your research”** that expands on creating effective search queries and searching for scholarly materials
- Find more details - including slides, handouts, and a live recording - here: <https://www.bodleian.ox.ac.uk/ask/workshops/course/OXFORBODL/ISKILL0023>
- You can also search through all of our available workshops to find more specific sessions for your needs or subject

Wrap-Up: Learning Outcomes



- **As this session is at its end, you should now be able to:**
 1. Describe what critical thinking is
 2. Understand a critical thinking method
 3. Apply the method to your academic work
 4. Explain the fundamentals of conducting research, including how to evaluate information sources in SOLO
- Any **final questions?**



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Thank you!

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Chatfield, T. (2022) *Critical Thinking: Your Guide to Effective Argument, Successful Analysis and Independent Study*. 2nd ed. SAGE Publications.

Cienki, A. (2022) *The study of gesture in cognitive linguistics: How it could inform and inspire other research in cognitive science*. Wiley Interdisciplinary Reviews: Cognitive Science, 13(6). Available at: <https://pmc.ncbi.nlm.nih.gov/articles/PMC9788131/> (Accessed: February 4th, 2025)

CRAAP Test adapted from Blakeslee, S. (2004) *The CRAAP Test*. LOEX Quarterly, 31(3). Available at: <http://commons.emich.edu/loexquarterly/vol31/iss3/4> (Accessed: October 22nd, 2024)

Flaticon (2024) *Critical Thinking free icon*. Available at: https://www.flaticon.com/free-icon/critical-thinking_12056795 (Accessed: October 22nd, 2024)

Flaticon (2024) *Schedule free icon*. Available at: https://www.flaticon.com/free-icon/schedule_732575 (Accessed: October 22nd, 2024)

References (1)

Freepik (2024) *Book Basic Miscellany Lineal Color icon*. Available at: https://www.freepik.com/icon/book_3145765 (Accessed: October 22nd, 2024)

Freepik (2024) *Conversation icon*. Available at: https://www.freepik.com/icon/conversation_8750658 (Accessed: October 22nd, 2024)

Freepik (2024) *Education icon*. Available at: https://www.freepik.com/icon/education_13165204 (Accessed: October 22nd, 2024)

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References (2)

OpenAI DALL-E 3 (2024) *Autumnal Oxford, Diagrams, and Young Woman*. [Digital art] Prompt: "Can you create a full screen image suitable for a PowerPoint slide of flowcharts, and pyramid models, and Venn diagrams all swirling above the head of an undergraduate student in an Oxford University quad? The image should be autumnal." DALL-E 3 response to Luke Geraghty, October 7th, 2024.

OpenAI DALL-E 3 (2024) *Man with a Huge Brain Taking a Nap*. [Digital art] Prompt: "Please generate a sepia-toned image representing a brain going on a break." DALL-E 3 response to Luke Geraghty, August 22nd, 2024.

OpenAI DALL-E 3 (2024) *Mechanical Brain and Question Mark*. [Digital art] Prompt: "Great, can you make another image for a full PowerPoint slide that combines a question mark with a brain and makes it look mechanical?" DALL-E 3 response to Luke Geraghty, August 22nd, 2024.

OpenAI DALL-E 3 (2024) *Overwhelmed Young Man*. [Digital art] Prompt: "Wonderful, generate a new image now of a young man looking overwhelmed as he is being bombarded by information. The image should be colourful, modern, and with high contrast. Include speaker phones and social media symbols." DALL-E 3 response to Luke Geraghty, August 22nd, 2024.

References (3)

OpenAI DALL-E 3 (2024) *Stylised Depiction of Critical Thinking in Young Adults*. [Digital art] Prompt: "Okay, I want an image that is like wall art depicted head-on. It represents critical thinking of young adults. This image is stylised, sleek, and modern, with a combination of dark and light colours. Highlight it against a plain, light-coloured background." DALL-E 3 response to Luke Geraghty, August 22nd, 2024.

OpenAI DALL-E 3 (2024) *Young Man Doing Research in a Library*. [Digital art] Prompt: "Okay, please visualise a computer in a library and there is a young male student using it." DALL-E 3 response to Luke Geraghty, August 22nd, 2024.

OpenAI DALL-E 3 (2024) *Young Man Writing in a Library*. [Digital art] Prompt: "Now make an image of a young adult writing in a book at a table in a library." DALL-E 3 response to Luke Geraghty, August 22nd, 2024.

OpenAI DALL-E 3 (2024) *Young Woman Holding a Tablet*. [Digital art] Prompt: "Can you show me a young woman holding a tablet, and showing her thinking about the information she's seeing on the screen?" DALL-E 3 response to Luke Geraghty, October 4th, 2024.

References (4)

Shevlin, H. and Johnston, S. K. (2024) *A generational divide: differences in researcher attitudes to AI*. Oxford University Press, October 16th, 2024. Available at: <https://blog.oup.com/2024/10/a-generational-divide-differences-in-researcher-attitudes-to-ai/> (Accessed: October 28th, 2024)