

REIT6811 | Research Methods

Lecture 2: Academic and Research Integrity

Dr Lei Guo



xkcd.com/2885

Some Admin

Tutorial start this week!

- Remember that participation in tutorials is assessed

You can find the tutorial handout on Blackboard

- Learning Resources > Tutorial Handouts
- Marking rubric will be available for you to view
- This weeks topic is on Academic Integrity and plagiarism
- Note that you have some readings to do before the tutorial!

UQ Active Learn Links

Ask Questions during the Lecture:

apps.elearning.uq.edu.au/wordstream/66853

Will look at these during your activities and the breaks and give you some answers.

Word Cloud:

apps.elearning.uq.edu.au/wordcloud/66853

Answer Polls:

apps.elearning.uq.edu.au/poll/66853

What is ethics?

Morals – your personal view of ‘right’ and ‘wrong’

Ethics – Formal study of moral principles and the practical application of moral principles. Involves the development of **codes of conduct** by professions or organizations to guide behavior of its members, aligning it with the values of the institution, profession and wider society.

Many professions have ethical codes that you have probably heard or know about, for example:

Medical Ethics: The Hippocratic Oath (modern variant). Emphasizes patient confidentiality, informed consent, acting in the patient's best interest, and non-maleficence (doing no harm), ensuring healthcare professionals provide care that respects the dignity and choices of their patients.

Legal Ethics: Legal ethics focuses on standards like client confidentiality, conflict of interest avoidance, and the duty of zealous representation, ensuring that attorneys uphold justice and act in their client's best interests within the bounds of the law.

The Birth of Academic Integrity

Prof. Donald L. McCabe (1944 – 2016) – the “Founding father” of research on academic integrity.

FEATURED TOPIC

It Takes a Village

Academic Dishonesty

DONALD L. MCCABE

FOR THE LAST FIFTEEN YEARS, I have researched questions of academic integrity. My initial interest in these questions was driven by my own experience as an undergraduate at Princeton University in the mid-1960s. Graduating from a high school where cheating was common, I was particularly intrigued by one item I received among the myriad of forms and papers Princeton students were required to sign. I learned later: information about the Princeton honor code. I was informed that exams would be unproctored; that, on every exam, I would have to affirm that I had not cheated or seen anyone else cheat by signing a pledge (which I can still recite verbatim almost forty years after my graduation); and that all alleged violations of the code would be addressed by a student honor committee.

If we truly believe in our role as educators, we would better to view most instances of cheating as educational opportunities

The problem

In the fall of 1990, I surveyed students at thirty-one of the country's most competitive colleges and universities (McCabe and Trevino 1993). Fourteen institutions had traditional academic honor codes, and seventeen did not, having chosen instead to "control" student dishonesty through such strategies as the threat of punishment or detection. From the more than six thousand students who responded, I learned several important lessons.

The incidence of cheating was higher than I expected, and many students were quite willing to admit their transgressions. For example, 47 percent of students attending a school with no honor code reported one or more serious incidents of test or exam cheating during the past year, as did 24 percent of students at schools with honor codes. While such comparisons would seem to support the power of honor codes, it was not the code itself that was the most critical factor. Rather, the student culture that existed on campus concerning the question of academic integrity was more important. The existence of a code did not always result in lower levels of cheating. More importantly, the converse was also true: some campuses achieved high levels of integrity without an honor code. While these campuses were doing many of the same things as campuses with codes—e.g., making academic integrity a clear campus priority and placing much of the responsibility for student integrity on the students themselves—they did not use a pledge and they did not mandate unproctored exams. What was important was the culture of academic integrity to which incoming students were exposed.

Many of the students I surveyed were troubled by the failure of their institution, and often its faculty, to address the issue of cheating. Because they believed the task of moral policing was observational or unconcerned faculty were "allowing" others to cheat and, thereby, to gain an unfair advantage; students viewed cheating as a way to level the playing field. This was a particular problem on large

DONALD L. MCCABE is professor of management and global business at Rutgers University and founding president of the Center for Academic Integrity.

26 LIBERAL EDUCATION SUMMER/FALL 2005

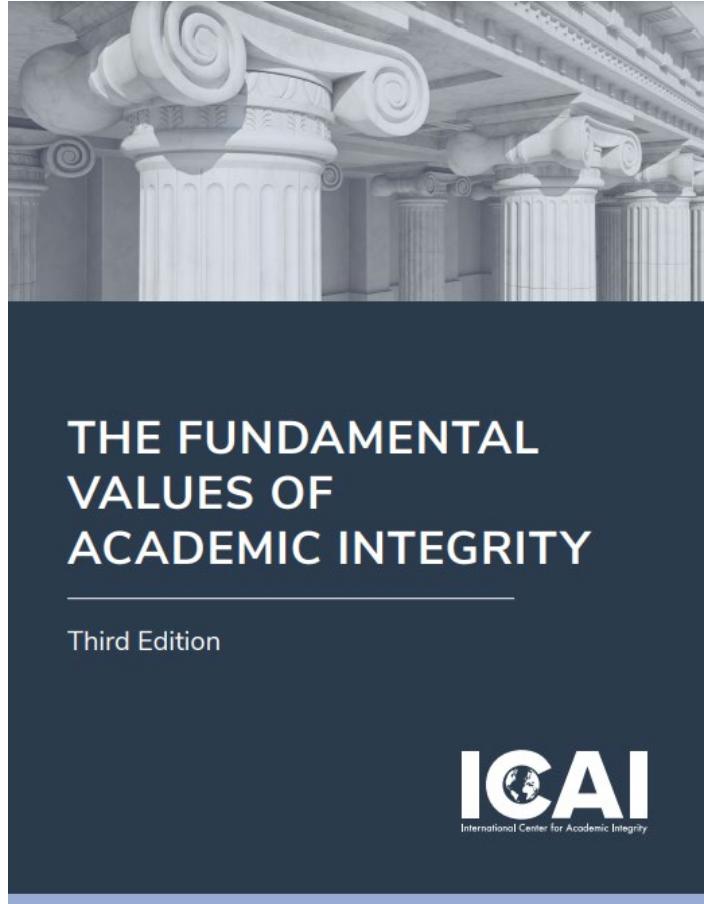
The Old Glory Days

"I was informed that exams would be unproctored; that, on every exam, I would have to affirm that I had not cheated or seen anyone else cheat by signing a pledge (which I can still recite verbatim almost forty years after my graduation); and that all alleged violations of the code would be addressed by a student honor committee."

"During my four years at Princeton, I never observed, suspected, or heard of anyone cheating, although surely there were at least some minor transgressions of the code."

- McCabe DL. It takes a village: academic dishonesty & educational opportunity. Lib Educ 2005; 91 (3):26-31

Academic Integrity



<https://academicintegrity.org/resources/fundamental-values>

Academic integrity is the ethical principles that guide academia and academic study. This includes research, teaching and learning.

The International Center for Academic Integrity defines academic integrity as “*a commitment, even in the face of adversity, to six fundamental values*”:

Honesty – Truthfulness in all aspects of academia

Trust – The ability to rely on the truth of someone or something

Fairness – Impartial treatment and consistency in the application of rules and policies

Respect – valuing the diversity of opinions and appreciating the need to challenge, test, and refine ideas

Responsibility – Hold yourself accountable for your actions

Courage – Courage to peruse and defend Academic Integrity in the face of difficulty or negative consequences

Research Integrity

Singapore Statement on Research Integrity

Preamble. The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

PRINCIPLES

- Honesty** in all aspects of research
- Accountability** in the conduct of research
- Professional courtesy and fairness** in working with others
- Good stewardship** of research on behalf of others

RESPONSIBILITIES

- 1. Integrity:** Researchers should take responsibility for the trustworthiness of their research.
- 2. Adherence to Regulations:** Researchers should be aware of and adhere to regulations and policies related to research.
- 3. Research Methods:** Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively.
- 4. Research Records:** Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others.
- 5. Research Findings:** Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.
- 6. Authorship:** Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.
- 7. Publication Acknowledgement:** Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria.
- 8. Peer Review:** Researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work.
- 9. Conflict of Interest:** Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as all review activities.
- 10. Public Communication:** Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views.
- 11. Reporting Irresponsible Research Practices:** Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflict of data, or the use of misleading analytical methods.
- 12. Responding to Irresponsible Research Practices:** Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of research misconduct or irresponsible research practices and for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record.
- 13. Research Environments:** Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity.
- 14. Societal Considerations:** Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.

The Singapore Statement on Research Integrity was developed as part of the 2nd World Conference on Research Integrity, 21-24 July 2010, in Singapore, as a global guide to the responsible conduct of research. It is not a regulatory document and does not represent the official policies of the countries and organizations that funded and/or participated in the Conference. For official policies, guidance, and regulations relating to research integrity, appropriate national bodies and organizations should be consulted. Available at: www.singaporestatement.org

Research integrity is the ethical principles that specifically guide research.

The Singapore Statement on Research Integrity (2010) is the first international effort that sets out unified principles and responsibilities on Research Integrity. The four principles are:

Honesty: being truthful in all aspects of research

Accountability: taking responsibility for your actions as a researcher

Professional courtesy: treating colleagues, staff and students fairly and with respect

Good stewardship: using and managing resources provided by others responsibly

There is a lot of agreement about the values we should hold in academia and in undertaking research!

<https://www.wcrif.org/guidance/singapore-statement>

Research Integrity In Australia



<https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018#block-views-block-file-attachments-content-block-1>

“The Australian Code for the Responsible Conduct of Research, establishes a framework for responsible research conduct that provides a foundation for high-quality research, credibility and community trust in the research endeavor” - NHMRC & ARC

The Code sets out principles that define ethical research:

Honesty, Fairness, Respect, Accountability – we know these from before

Rigour – in the development, undertaking and reporting of research

Transparency – in declaring interest and reporting research

Recognition – of the right of Aboriginal and Torres Strait Islander peoples to be engaged in research that affects or is of significance to them

Promotion – of responsible research practices

Notice how these build from the international guidelines, but some like “Recognition” are Australian specific principles

Research Integrity In Australia



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It is accompanied by Guides that describe how the principles can be applied to areas such as:

Data Management

Publication practices

Peer Review

Collaboration

Supervision of trainees

Authorship

Conflicts of interest

Handling breaches

<https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018#block-views-block-file-attachments-content-block-1>

Academic and Research Integrity at UQ

University Policies & Guidelines

UQ develops its policies, guidelines and codes of conduct based on international and Australian guides like those on the previous slides, as well as its own community values. For example:

- Student Code of Conduct: <https://ppl.app.uq.edu.au/content/3.60.01-student-code-conduct>
- An overview of the University's assessment-related procedures can be found on my.UQ:
<https://my.uq.edu.au/services/exams-and-assessment>

Academic Integrity

It is the University's task to encourage ethical scholarship and to inform students and staff about the institutional standards of academic behaviour expected of them in learning, teaching and research. Students have a responsibility to maintain the highest standards of academic integrity in their work.

Students must not cheat in any forms of assessment and must ensure they do not plagiarize.

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Academic Integrity Modules - Support for Students (<https://elearning.uq.edu.au/academic-integrity-modules>)

It may seem simple – don't cheat and do reference your work. However, there are many issues involved in understanding what is meant by academic integrity and how you could be misled into engaging in an action which may be academic misconduct.

The Academic Integrity Modules will enable you to uphold academic integrity throughout your studies at UQ and beyond. **In REIT6811 we require you to complete the module.**

Planning and Research Integrity

Planning in Research is key to upholding Academic Integrity

- There is always a desire to meet personal, supervisory and maybe even larger community expectations around your research and its outcomes. In an attempt to meet these expectations, you may feel pressure to compensate for insufficient planning by cutting corners and bending a few rules later on. Comprehensive research planning can help mitigate these pressures.
- Some planning in research is mandatory, not optional. The mandatory aspect of planning forms the main content of the UQ Research Integrity module (<https://cdf.graduate-school.uq.edu.au/compulsory-research-integrity-module-ritmod>)

Planning in research can include:

- A research plan: what are the hypotheses, what is the role of different personnel, are there any deadlines, what are the expected academic outputs?
- Getting necessary institutional approvals, e.g. human or animal research, biosafety research, conflicts of interest, collaborations with researchers from certain countries + more!
- Confirming professional and other agreements before the project begins, e.g. intellectual property agreements with industry partners, authorship agreements and data sharing with research collaborators
- Data storage and management plan

Conflicts of Interest (COIs)

COIs occur when a person's ability to follow Academic and Research Integrity policies is (or may be) compromised due to competing interests.

UQ defines different COI levels:

- **Actual Conflict:** A person has a competing interest that directly conflicts with their duties and responsibilities
- **Potential Conflict:** A person has a competing interest that could conflict with their duties and responsibilities
- **Perceived Conflict:** It could be reasonably perceived that a person has a competing interest that could improperly influence their performance of duties and responsibilities

UQ's policy lists some (not all) COI types:

- Personal Relationships – family/friends
- Private Interests – external business interests financial or otherwise
- Personal Benefits – reception of gifts or benefits
- Researchers – conflicts related to research design or reporting
- Commercialization or Financial – financial gain due to commercialization of research or teaching resources

Common contexts for COIs:

- Supervising students
- Accepting funding from certain sources
- Conducting research
- Promotion committees
- Peer Review process - authoring/reviewing papers

Conflicts of Interest (COIs)

COIs occur often in academia and research and need to be disclosed and managed

COIs should be disclosed as soon as possible

- COIs must be formally registered
- Sometimes may need to declare a COI informally as it occurs (e.g. in a meeting)

UQ has a number of automatic reporting procedures for competing interests such as:

- Conflicts of Interest
- Secondary Employment - start ups, consultancy, board memberships
- Reporting gifts and benefits

Research-related commercial activity

A conflict of interest may arise when a researcher has a significant financial or fiduciary interest in a company that is also commercialising UQ intellectual property that has been developed by that same researcher. These circumstances should be disclosed.

Conflict 1 details

I am, or a family member or close friend is, a director, employee, shareholder or other beneficiary of a company which is commercialising UQ intellectual property I have developed: **(required)**

- Yes
 No

I am the chief investigator (CI) for a grant that has this company as a partner: **(required)**

- Yes
 No

I receive research funds from this company that provide access to UQ facilities and resources:

- Yes
 No

I receive a personal payment from this company:

- Yes
 No

Please provide the date this conflict began: **(required)**

Enter a date (dd/mm/yyyy)

Describe the scenario in which you work and the relevant private interests. Provide a clear explanation of how this scenario gives rise to a conflict of interest and specify all the different aspects of the conflict in explicit detail.

Nature of the conflict: **(required)**

Clearly detail the steps you intend to take in order to resolve or manage this conflict.

Management plan: **(required)**

Supporting documents

Please attach any supporting documents you wish to provide to support the proposed management plan.

Add document

Screenshots from
UQ's online COI
register

Conflicts of Interest (COIs)

COIs occur often in academia and research and need to be disclosed and managed

Management of COIs follows the R's:

Register Disclose and establish the details of the conflict

Restrict The staff member's involvement or actions in the matter are restricted

Recruit A disinterested third party should oversee processes involved in the matter

Remove The individual may remove themselves from their involvement in the matter

Relinquish The individual and/or their related parties may relinquish the private interest

Resign The individual's resignation is an option of last resort if no other options are workable

Examples of COIs and management plans can be found here:

https://integrity.uq.edu.au/files/527/COI_management_plan_examples%20-updated-2024-final.pdf



Journal Activity 1

For the scenarios below label the level and type of COI and explain your reasoning. Describe what R strategy could be used to mitigate it.

Case 1: A UQ staff member' has equity in a company that is competing for a large project within the staff member's School. However, the staff member is not involved in the selection process and their professional contact with the company will be limited during their role at UQ.

Case 2: An academic sits on a committee that approves faculty promotions and is the spouse of a candidate up for promotion.

Case 3: A researcher has successfully commercialized a product based on IP developed at UQ and an external company has been granted the rights to produce and sell the product. The researcher will get a share in the financial benefits through UQ's policy. They have also been engaged by the company as a paid consultant.

Ownership and Protection of Data

It is important to be aware of your responsibilities around data before you start a project

Know who owns your data and your results

- If no one funds or provides support for your research, then you might own and have rights to data you produce or collect.
- If you are funded or you use public/institutional resources to collect data, someone else is likely to own your data and have certain rights to its use.

Create a data management plan (<https://guides.library.uq.edu.au/for-researchers/research-data-management-plan/checklist>)

- Outlines how your data will be responsibly collected, stored, protected and shared.
- Enables you to manage data with integrity to protect the value of your research.

At UQ we can use the Research Data Manager (RDM) system to create a data management plans, store and protect data and share data with collaborators (<https://guides.library.uq.edu.au/for-researchers/uq-research-data-manager>)

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- Enables you to manage data with integrity to protect the value of your research.

Never alter your data!

- Always report all data analysis processes
- Do not remove data because it doesn't fit the expected trend
- Anyone should be able to replicate your work using your data and reported processes.

Journal Activity 2

Imagine you have a laptop at a coffee shop with the only copy of your research data on it, and you accidentally leave it behind. When you return later, you can't find your laptop and none of the staff in the store have seen it. Your laptop is lost, and you have lost all your data.

What are the appropriate steps that you would take in this situation?

How can you avoid this kind of situation in future?

Authorship and Acknowledgement

UQ defines authorship as a substantive contribution to at least one of the following activities:

- Conception and design of the project;
- Acquisition of research data where the acquisition has required significant intellectual judgement, planning, design, or input;
- Analysis and interpretation of the data on which the research output is based;
- Drafting significant parts of the research output or critically reviewing it so as to contribute to the interpretation.

Acknowledgments are contribution to the research that don't meet the authorship criteria.

You should get credit for the work you do

- Authorship establishes the priority and originality of your contributions. If you are the first to publish something new, your priority should be recorded in the research record.
- As an author, you take responsibility for your part of the project, and it is expected that you will be able to defend the part that you contributed.
- Ideally, negotiate conditions and output for authorship at the START of a project rather than at the end
- Your employment, promotions, salary and honours depend on your authorship record, so it is important that the record is accurate.

Authorship and Acknowledgement

VOLUME 35, NUMBER 21

PHYSICAL REVIEW LETTERS

24 NOVEMBER 1975

Two-, Three-, and Four-Atom Exchange Effects in bcc ^3He

J. H. Hetherington and F. D. C. Willard
Physics Department, Michigan State University, East Lansing, Michigan 48824
 (Received 22 September 1975)

We have made mean-field calculations with a Hamiltonian obtained from two-, three-, and four-atom exchange in bcc solid ^3He . We are able to fit the high-temperature experiments as well as the phase diagram of Kummer *et al.* at low temperatures. We find two kinds of antiferromagnetic phases as suggested by Kummer's experiments.

We have been able both to fit the high-temperature solid- ^3He magnetic data¹⁻⁸ and, through mean-field theory, to obtain a phase diagram like that of Kummer *et al.*^{7,8} We consider only three mechanisms of exchange,⁹⁻¹¹ two-atom, three-atom rings, and four-atom rings, and adjust their strengths to fit the data.

The Hamiltonian we take is of the form¹²

$$\begin{aligned} \mathcal{H} = & -\frac{1}{4} \sum_i \sum_v J_{iv} \vec{\sigma}_i \cdot \vec{\sigma}_{iv} - \mu \vec{B} \cdot \sum_i \vec{\sigma}_i \\ & -\frac{1}{4} \sum_{i,j} \Lambda_{ij} s^4(\vec{\sigma}_i \cdot \vec{\sigma}_j) (\vec{\sigma}_k \cdot \vec{\sigma}_l), \end{aligned} \quad (1)$$

where the sum over v indicates a sum over the neighbors of site i . The s^4 's are Pauli spin matrices. Ordinary two-atom exchange contributes negatively to J_1 . Three-atom-ring exchange contributes positively to J_1 and J_2 . Four-atom-ring exchanges are of two kinds because there are two kinds of closed four-atom circuits with nearest-neighbor steps. One is folded (F) so that both pairs of opposite corners of the quadrilateral are second neighbors. The second kind is planar (P) diamond shaped so that ends of one diagonal are second neighbors and ends of the other diagonal are third neighbors. We have made calculations using both kinds of four-atom rings but we are able to fit the data using only the F-ring exchanges. The F-ring exchanges contribute negatively to J_1 and J_2 to two kinds of $(\vec{\sigma}_i \cdot \vec{\sigma}_j)(\vec{\sigma}_k \cdot \vec{\sigma}_l)$ terms (" σ^{vv} "), one where the dot products are between first neighbors and one where they are between second neighbors.

We solved the mean-field equations on the assumption that one of two antiferromagnetic states could exist: (i) the normal (spin-flop) antiferromagnetic (naf) phase, where the two simple cubic sublattices are the magnetic sublattices; and (ii) the simple cubic antiferromagnetic (scaf) phase, where each of the simple cubic sublattices is itself antiferromagnetic. The spins on the simple cubic sublattices are rotated 90° about \vec{B} with respect to each other because this minimizes the nearest-neighbor σ^4 term, which en-

ters \mathcal{H} with an overall positive sign.

Without the σ^4 terms in \mathcal{H} only these two structures are possible in mean-field theory when only J_1 and J_2 are nonzero. Without proof, we have assumed that consideration of these two phases is adequate even when the σ^4 terms are present.

The computation proceeded by examining at each value of T and B all solutions of the mean-field equations for the scaf, naf, and paramagnetic phases and choosing the solution with lowest free energy.

The high-temperature experiments can be summarized by noting that the partition function Z can be expressed in general in the form¹³

$$N^{-1} \ln Z = \ln 2 + \frac{1}{2} e_2 \theta^2 + \dots + \frac{1}{2} y^2 (1 + \frac{1}{2} \alpha_1 \beta + \dots) + \dots, \quad (2)$$

where $y = \mu B \beta$. We note that specific heat at high T determines e_2 and Curie-Weiss θ determines α_1 . Pressure experiments at zero field determine de_2/dV and have been used to determine e_2 by integration.¹⁴ Pressure experiments in magnetic field¹⁴ measure $d\alpha_1/dV$ and, although somewhat self-contradictory,¹⁵ probably imply on integration an α_1 somewhat smaller than is generally accepted.¹⁶ We can express the results of all high- T experiments (adjusted to 24.2 cm³/mole) by the statements that $e_2 = 6.94 \pm 0.3$ (mK)² mainly on the basis of the results of Panczyk and Adams² and that $\alpha_1 = -6.25 \pm 0.8$ mK mainly from Kirk, Osgood, and Garber.⁵

The theoretical expansions are $\alpha_1 = 8J_1 + 6J_2$ and $e_2 = 12J_1^2 + 9J_2^2 + 31.5K_4^2$, where J_1 and J_2 are usual first- and second-neighbor exchange coefficients and K_4 is the strength of the σ^4 term in the F-ring exchange. K_4 is defined so that the first- and second-neighbor exchange parts of the Hamiltonian due to F-ring exchange alone are $J_1 = 3K_4$ and $J_2 = 2K_4$.

Our fit is obtained with $J_1 = -0.56$ mK, $J_2 = 0.175$ mK, and $K_4 = -0.32$ mK which lead to $\alpha_1 = -5.7$ mK and $e_2 = 7.2$ (mK)² and to a phase dia-

A paper written by J. H. Hetherington and F. D. C. Willard.

Hetherington is a physicist and mathematician from Michigan State University. Who is Willard?



Willard's signature

Willard is the world's first cat to co-author a physics paper.

Avoiding Plagiarism

The University has adopted the following definition of plagiarism:

Plagiarism is the act of misrepresenting as one's own original work the ideas, interpretations, words or creative works of another. These include published and unpublished documents, designs, music, sounds, images, photographs, computer codes and ideas gained through working in a group. These ideas, interpretations, words or works may be found in print and/or electronic media.

Students are encouraged to read the UQ Student Integrity and Misconduct policy

(<http://ppl.app.uq.edu.au/content/3.60.04-student-integrity-and-misconduct>) which makes a comprehensive statement about the University's approach to plagiarism, including the approved use of plagiarism detection software, the consequences of plagiarism and the principles associated with preventing plagiarism.

Attributing others Appropriately

The University has adopted the following definition of plagiarism:

Plagiarism is the act of misrepresenting as one's own original work the ideas, interpretations, words or creative works of another. These include published and unpublished documents, designs, music, sounds, images, photographs, computer codes and ideas gained through working in a group. These ideas, interpretations, words or works may be found in print and/or electronic media.

How you attribute will depend on the referencing style.

- Set of rules that determine what, where, and how specific information needs to be included when attributing an idea to another author.
- Depends of the discipline, and often the journal/conference you are publishing in
- Usually use some variation of IEEE in Computer Science and Electrical Engineering
- UQ has referencing style guides for some of the more popular styles:
<https://guides.library.uq.edu.au/referencing>

Generative AI and Plagiarism

The University has adopted the following definition of plagiarism:

Plagiarism is the act of misrepresenting as one's own original work the ideas, interpretations, words or creative works of another. These include published and unpublished documents, designs, music, sounds, images, photographs, computer codes and ideas gained through working in a group. These ideas, interpretations, words or works may be found in print and/or electronic media.

Generative AI should be referenced just like any other source:

- Reference your use of AI (<https://guides.library.uq.edu.au/referencing/chatgpt-and-generative-ai-tools>)
- Describe how the AI was used in the reference:

"EMI Instrumentation Presentation" prompt; initial slide outline for presentation on EMI shielding in MRI
ChatGPT, Apr 2023 version, OpenAI, 2 Feb. 2024, *chat.openai.com/chat*.
- If referencing specific text, do not copy the generated material – just like a journal article or text book you should write the generated material in your own words, unless quoting (which you should always do sparingly).

Why is Academic and Research Integrity so important?

Case 1: Inadequate recognition of other's work

International Journal of Industrial Ergonomics 39 (2009) 894–903

Contents lists available at ScienceDirect

International Journal of Industrial Ergonomics

journal homepage: www.elsevier.com/locate/ergon





Human–automation teams and adaptable control for future air traffic management

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Multi-agent system

ABSTRACT

The design and management of human–automation teams for future air traffic systems require an understanding of principles of cognitive systems engineering, allocation of function and team adaptation. The current article proposes a framework of human–automation team adaptable control that incorporates adaptable automation [Oppermann, R., Simm, H., 1994. Adaptability: user-initiated individualization. In: Oppermann, R. (Ed.), *Adaptive User Support: Ergonomic Design of Manually and Automatically Adaptable Software*. Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 14–64] with an Extended Control Model of Joint Cognitive System functioning [Hollnagel, E., Nåbo, A., Lau, I., 21–24 July 2003. A systemic model for driver-in-control. In: Paper Presented at the Second International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Public Policy Center, University of Iowa, Park City, UT] nested within a dynamic view of team adaptation [Burke, C.S., Stagl, K.C., Salas, E., Pierce, L., Kendall, D., 2006. Understanding team adaptation: a conceptual analysis and model. *Journal of Applied Psychology* 91, 1189–1207]. Modeling the temporal dynamics of the coordination of human–automation teams under conditions of Free Flight requires an appreciation of the episodic, cyclical nature of team processes from transition to action phases, along with the distinction of team processes from emergent states [Marks, M.A., Mathieu, J.E., Zaccaro, S.J., 2001. A temporally based framework and taxonomy of team processes. *Academy of Management Review* 26, 356–376]. The conceptual framework of human–automation team adaptable control provides a basis for future research and design.

Relevance to industry: The current article provides a conceptual framework to direct future investigations to determine the optimal design and management of Human–automation teams for Free Flight-based air traffic management systems.

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Corrigendum

Corrigendum to “Human–automation teams and adaptable control for future air traffic management” [Int J Ind Ergon (39) (2009) 894–903]

Janice Langan-Fox^{a,*}, James M. Canty^b, Michael J. Sankey^c

^a Faculty of Business and Enterprise, Swinburne University of Technology, Hawthorn, Victoria 3122, Australia
^b Faculty of Health Sciences, La Trobe University, Bundoora, Victoria 3086, Australia
^c Faculty of Business and Economics, The University of Melbourne, Parkville, Victoria 3010, Australia

Due to errors in drafting, the authors regret that the passages listed below were incorrectly cited.

The authors humbly apologize for the errors, and wish to thank the editor for bringing these issues to our attention.

The correct citations are listed below.

The vision for future ATM systems is based on “a large-scale computer system [that] would determine and negotiate with flight crews, airline operations managers and air traffic for near optimal [four-dimensional] (4D) trajectories” (Sheridan, 2006, p. 2). (p. 895).

4D trajectories would be based “on nominal schedules, [improved methods of] weather observation and prediction, [even more critical than present] fuel considerations ... and improved ... GPS-enabled Automatic Dependent Surveillance-Broadcast (ADS-B) surveillance technology” (Sheridan, 2006, p. 2). (p. 895).

These 4D trajectories “would be for all phases of flight [– i.e.] climb, cruise, descent and taxi – for participating flights and aircraft that are properly equipped” (Sheridan, 2006, p. 2). (p. 895).

Aircraft not equipped with ADS-B enabling 4D trajectory systems “would be restricted to lower altitudes and [would] be

human (e.g., Bowers et al., 1996; Christoffersen and Woods, 2002; [Dzindolet et al., 2006]; Sarter, 2001; Sarter and Woods, 2000; Scerbo, 1996)” (Dzindolet et al., 2006, pp. 218–220). (p. 896).

For example, during current, “normal flight operations ... [cruise phases,] the pilot often transfers full control of the aircraft to the auto-pilot ... [, a process that transforms] the automation into a vital non-human member of the flight crew” (Cuevas et al., 2007, p. B64). (p. 896).

In such situations, it has been argued that the automated systems “might need to be smart so that ... [they] can behave like ... teammate[s]” (Inagaki, 2008, p. 253). (p. 896).

Groom and Nass (2007) recently challenged the widespread assumption that human–automation systems can be considered teams, arguing that since automated systems lack “humanlike mental models and a sense of self, ... [they] may prove untrustworthy and will be rejected from human teams” (p. 483). (p. 896).

“Many researchers and system developers have been looking for ways to make ... [automated] systems team players (Christoffersen and Woods, 2002). A great deal of the ... work [in the software and robotic agent research communities involves determining how to

Case 1: Inadequate recognition of other's work

Corrigendum (Correction): “Due to errors in drafting, the authors regret that the passages below were not correctly cited. The authors humbly apologize for the errors, and wish to thank the editor for bringing these issues to our attention. The correct citations are listed below”

Original improper version

1995, cited in Hollnagel, 2007, p. 409). The vision for future ATM systems is based on a large-scale computer system that would determine and negotiate with flight crews, airline operations managers and air traffic for near optimal four-dimensional (4D) trajectories (Sheridan, 2006). 4D trajectories would be based on

23 similar cases in the article!

Corrected proper version

The vision for future ATM systems is based on “a large-scale computer system [that] would determine and negotiate with flight crews, airline operations managers and air traffic for near optimal [four-dimensional] (4D) trajectories” (Sheridan, 2006, p. 2). (p. 895).

If quoting directly:

- Use quote marks
- Cite page number from original paper

Case 1: Inadequate recognition of other's work

Let's discuss...

1. How might the situation have happened?
2. Who would have been hurt by it?
3. How could the situation have been avoided?

apps.elearning.uq.edu.au/wordstream/66853

Case 1: Inadequate recognition of other's work

Plagiarism is a breach of Academic and Research Integrity

This researcher (not related to above case) lost their job for multiple cases of *self plagiarism* – the act of republishing work or copying sections of previously published work in a new work.

Plagiarism and self- plagiarism are key topics in the mandatory Academic Integrity Module

This was published 1 year ago

Scientist leaves Swinburne after journals retract 30 studies over plagiarism claims

Facebook has banned the sharing or viewing of our news articles on its platform. For independent journalism straight from the source, [download our app](#) and [sign up to our newsletters](#).

By Liam Mannix
October 26, 2019 – 3.05pm



[Save](#) [Share](#) [A](#) [A](#) [A](#)
47 View all comments

A scientist has left Swinburne University after 30 of his studies were retracted from scientific journals following allegations he had copied and republished the same research over and over again.

Dr Ali Nazari is a decorated building-materials researcher who had won more than \$1 million in taxpayer research funding in the last three years.

The university launched an investigation in August after several scientific journals announced they had discovered problems with studies Dr Nazari authored or co-authored.



Ali Nazari receives a commendation from Swinburne University in 2017

The studies were retracted over allegations of "author misconduct" and self-plagiarism – a practice akin to rewriting a single piece of homework and submitting slightly different versions of it.

<https://www.theage.com.au/national/victoria/scientist-leaves-swinburne-after-journals-retract-30-studies-over-plagiarism-claims-20191023-p533c7.html>

Case 2: Data Fabrication & Lack of Institutional Action

In 2021, The Queensland Institute of Medical Research (known as **QIMR Berghofer Research Institute**) announced that an independent internal Panel, led by retired Appeal Court Judge Robert Gotterson AO, had found **Professor Mark Smyth had seriously breached responsible conduct of research Codes.**

QIMR is a leading research institute in Brisbane, based at the Royal Brisbane and Women's Hospital. At the time of the internal investigations Professor Smyth was one of Australia's leading experts in cancer research.

The Panel the misconduct included **fabricating research data to support grant funding applications and clinical trials, bullying researchers who raised concerns.**

On the Panel's recommendation **QMIR commissioned an independent external investigation into what they could have done to prevent this misconduct.**



The screenshot shows a news article from ABC News. The header reads "ABC NEWS" with a "Brisbane Change location" button. Below the header is a navigation bar with links: Just In, Watch Live, Politics, World, Business, Analysis, Sport, Science, Health, and Entertainment. The main title of the article is "Leading Queensland cancer researcher Mark Smyth fabricated scientific data, review finds". It is written by Janelle Miles and posted on Tuesday 11 Jan 2022 at 3:04pm, updated on Wednesday 12 Jan 2022 at 12:33pm. The URL of the article is provided at the bottom: <https://www.abc.net.au/news/2022-01-11/qld-cancer-researcher-mark-smyth-fabricated-data-review-finds/100750208>.

Case 2: Data Fabrication & Lack of Institutional Action

In 2022 QIMR Berghofer shared some passages of the external investigation (Lander Review) to the media. These are statements from the QMIR media release, or the adjacent Brisbane Times article on findings of the Review:

“QIMR Berghofer hired Smyth in 2013, when there were already doubts about his methods, yet failed to do character checks. He had a personal relationship at QIMR and some of his sceptics believed he had been cleared of any wrongdoing - or found to be at fault and hired anyway.” – BT

“No one in authority knew that Professor Smyth engaged in research misconduct” but barriers existed within the Institute at the time which had prevented the misconduct from being detected or investigated sooner.” - QIMR Media Release

“Smyth thrived at QIMR Berghofer because its management structure was unwieldy, the human resources section was dysfunctional, and there was no research integrity office until 2018.” – BT

“According to the review, six raised concerns within QIMR Berghofer but were not “afforded the appropriate care, respect or credibility”. Several raised issues directly with Smyth, only to be ignored or bullied. He threatened one with dismissal...” - BT

Top research institute had seven years to act on misconduct complaints



Sean Parnell
May 10, 2023 – 12.01am

Save Share

Prominent Australian cancer researcher Professor Mark Smyth was “a bully who used his reputation, status and power to intimidate”, avoiding proper scrutiny of his scientific methods and investigation of his behaviour, according to an external review.

<https://www.brisbanetimes.com.au/national/queensland/top-research-institute-had-seven-years-to-act-on-misconduct-complaints-20230509-p5d6w5.html>

[Home](#) | [Media statement](#)

Media statement

10 May 2023

QIMR Berghofer Council has accepted institutional responsibility for the findings of an independent review into its internal processes for research integrity and culture conducted by former Federal Court judge and inaugural Independent Commissioner against Corruption (South Australia), Hon Bruce Lander KC (Lander Review).

<https://www.qimrberghofer.edu.au/media-statement-2/>

Case 2: Data Fabrication & Lack of Institutional Action

Let's discuss...

1. Which parties breached the code and how?
 - Smyth
 - Whistleblowers
 - QIMR
2. Who would have been hurt by it?
3. How could the situation have been avoided?

apps.elearning.uq.edu.au/wordstream/66853

Case 2: Data Fabrication & Lack of Institutional Action

This Cases has a number of breaches of the Code, by both the individual involved and the institution.

The researcher involved has lost their job, and several papers have been retracted.

QIMR has had to repay \$3.4 million in grant money – funding bodies like the ARC and NHMRC require compliance with Australian Code for the Responsible Conduct of Research to accept funding.

QIMR has overhauled their policies, The Lander Review found that QMIR had made significant improvements to address the culture within the institute, and made 25 further recommendations.

Research scandal costs Queensland institute millions of dollars



Sean Parnell
April 22, 2022 – 8:31pm

 Save |  Share | 

The QIMR Berghofer Medical Research Institute has given up \$5.4 million in grants as it continues to count the cost of a scandal involving Professor Mark Smyth.

<https://www.brisbanetimes.com.au/politics/queensland/research-scandal-costs-queensland-institute-millions-of-dollars-20220421-p5af9v.html>

Everyone in the research community has a duty to uphold academic integrity. That includes all of us, but also our academic institutions, the Academic Integrity Module and this course are just some ways UQ ensures it promotes a culture of Academic and Research Integrity

Integrity and the Open Science Movement

Researchers are increasingly encouraged to make their research processes and data openly available to others (<https://www.cos.io/>)

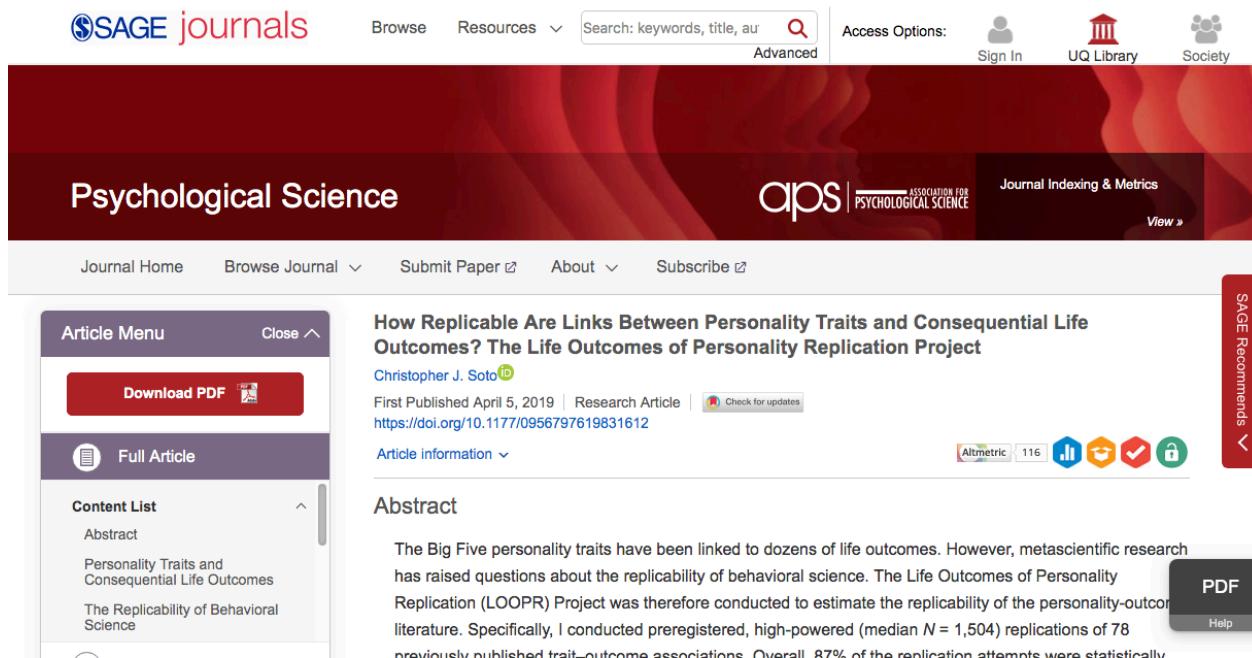
- This goes well beyond just publishing papers based on their work
- Sharing the actual data
- Sharing detailed materials and methods
- Preregistering studies – publishing information about the plans for running a study



<https://www.cos.io/initiatives/registered-reports>

Encouraging Open Science

Badges are used by the Open Science Centre for journals and authors to use signaling to the reader that the content is available in a consistent location.



The screenshot shows the SAGE journals website for the journal "Psychological Science". The top navigation bar includes links for "Browse", "Resources", a search bar, "Access Options" (Sign In, UQ Library, Society), and a "SAGE journals" logo. Below the header, there's a banner for "aps | ASSOCIATION FOR PSYCHOLOGICAL SCIENCE" and "Journal Indexing & Metrics". The main content area displays an article titled "How Replicable Are Links Between Personality Traits and Consequential Life Outcomes? The Life Outcomes of Personality Replication Project" by Christopher J. Soto. The article summary discusses the replicability of behavioral science, mentioning the Life Outcomes of Personality Replication (LOOPR) Project. On the right side of the article page, there's a vertical "SAGE Recommends" sidebar.



From here...

- Academic and Research Integrity are the *ground rules* for doing research
- We have covered some important aspects of Academic and Research Integrity today and will cover more topics in detail as the lectures progress (referencing, data management, obtaining human ethics approval etc)
- This week's tutorial is focused on academic integrity and plagiarism, and will help you practice referencing to avoid plagiarism
- Next week we will cover how to do *background research* by finding academic sources, preparing annotated bibliographies and literature reviews, as well as using referencing software



**Effective academic
writing**

REIT6811

Paragraph Organisation

Cybersecurity is critical for businesses to safeguard sensitive data, maintain customer trust, and ensure operational continuity. First of all, ever-increasing digital transformation has led to an ever-increasing risk of cyberattacks. These cyberattacks can lead to businesses suffering financial losses, reputational damage, as well as legal consequences (Kshetri, 2017). However, there are cybersecurity strategies that can effectively protect against data breaches and intellectual property theft. For instance, *General Data Protection Regulations* (GDPR) outline robust cybersecurity practices for any companies who deal with the personal data of EU citizens (Haque et al., 2021). Further, such a robust cybersecurity framework can also enhance business resilience. This is achieved by alleviating disruptions caused by cyber incidents, thus enabling long-term growth and competitiveness in an increasingly digital marketplace (Soomro et al., 2016).

1. Where is the student's voice?

The topic sentence & all main idea sentences

2. What is the purpose of the remaining sentences?

To give detailed information to support / exemplify the main ideas

3. Circle the words that tell us the information comes from the student's research. Why is this so important?

To demonstrate research & to support YOUR main ideas.

Cohesion

Cybersecurity is critical for businesses to safeguard sensitive data, maintain customer trust, and ensure operational continuity. First of all, ever-increasing digital transformation has led to an ever-increasing risk of cyberattacks. These cyberattacks can lead to businesses suffering financial losses, reputational damage, as well as legal consequences (Kshetri, 2017). However, there are cybersecurity strategies that can effectively protect against data breaches and intellectual property theft. For instance, *General Data Protection Regulations* (GDPR) outline robust cybersecurity practices for any companies who deal with the personal data of EU citizens (Haque et al., 2021). Further, such a robust cybersecurity framework can also enhance business resilience. This is achieved by alleviating disruptions caused by cyber incidents, thus enabling long-term growth and competitiveness in an increasingly digital marketplace (Soomro et al., 2016).

4. What examples of cohesion / flow do you see in the paragraph?

TIP: Look for linking words & language that refers back (or forward).

There are 10.

5. How do the cohesive devices help?

In Engineering as in many academic fields, paraphrasing and summarising are commonly used. Why is it important to paraphrase?

What methods can be used to paraphrase?

Manipulating language:

Use synonyms

Although a thesaurus can be useful, the danger is choosing a synonym that does not fit the context of the original. Advanced Learner dictionaries show common collocations. Online collocation dictionary at <http://ozdic.com>. **DO NOT** use synonyms for key discipline specific words.

Change conjunctions

While experiment A produced strong correlations, experiment B showed few.
Experiment A produced strong correlations; **however**, experiment B showed few.
Unlike experiment B, which showed few correlations, experiment B produced strong ones.

Change the part of speech

Aggression might result from factors in the environment.
Aggressive behaviour might be the result of environmental factors.

Reduce a clause to a phrase

Aggression, **which is evident in the sample**, may have a biological cause.
Aggression, **evident in the sample**, may have a biological cause.
Results **that suggest that aggression has a biological cause** may be questioned.
Results **suggesting aggression has a biological cause** may be questioned.

Change the voice

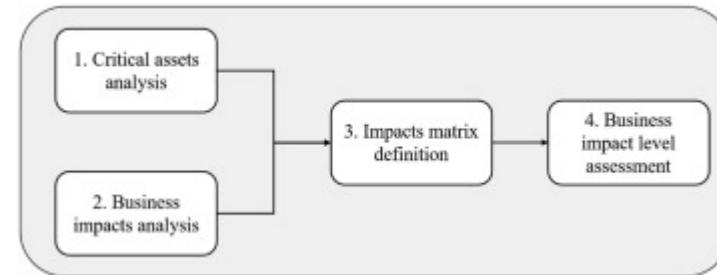
Researchers **found** in this study that... In this study, it **was found** that....
Aggression **has often been characterised** as having a biological basis
Social scientists **have** often **characterised** aggression as having a biological basis

Identifying good and bad paraphrases 1

- Read the original to-be-cited text
- Examine the paraphrases
- How successful is each paraphrase?

SOURCE

- Angelo Corallo, Mariangela Lazoi, Marianna Lezzi,
- Cybersecurity in the context of industry 4.0: A structured classification of critical assets and business impacts,
- Computers in Industry,
- Volume 114, 2020, 103165,
- ISSN 0166-3615,
- <https://doi.org/10.1016/j.compind.2019.103165>.



To provide preliminary suggestions to this end to scientists, practitioners, consultants and industrial managers in cybersecurity, we suggest structuring the results into a four-step methodology (see [Fig. 5](#)). *In particular, each step can represent an element to assess the business impact level, making companies aware of the critical assets on which to focus their defensive efforts.*

PARAPHRASE 1: Each step can show an element to assess the business impact level. This makes companies aware of the critical assets on which to focus their defensive efforts (Corallo et al., 2020).

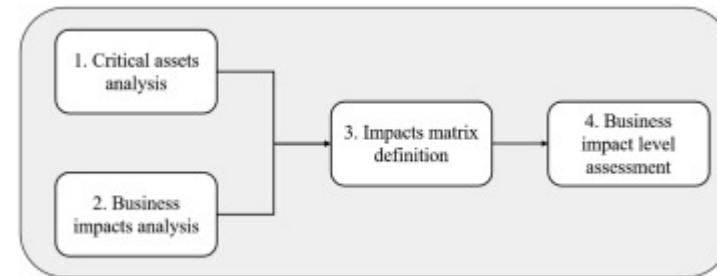
Not enough paraphrasing / too similar to the original

Identifying good and bad paraphrases 2

- Read the original to-be-cited text
- Examine the paraphrases
- How successful is each paraphrase?

SOURCE

- Angelo Corallo, Mariangela Lazoi, Marianna Lezzi,
- Cybersecurity in the context of industry 4.0: A structured classification of critical assets and business impacts,
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To provide preliminary suggestions to this end to scientists, practitioners, consultants and industrial managers in cybersecurity, we suggest structuring the results into a four-step methodology (see [Fig. 5](#)). *In particular, each step can represent an element to assess the business impact level, making companies aware of the critical assets on which to focus their defensive efforts.*

PARAPHRASE 2: Every step refers to an element that can be used to assess the impact on a business. This ensures that companies know which important assets were protected (Corallo et al., 2020).

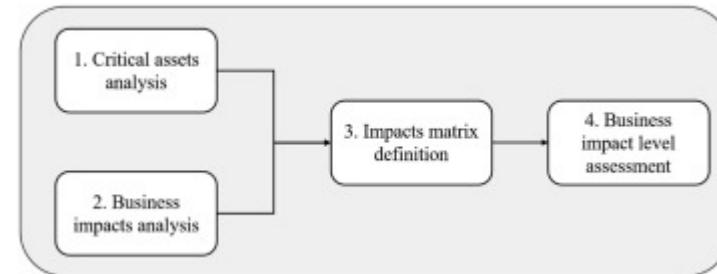
Paraphrased but meaning has changed. Be careful with tense

Identifying good and bad paraphrases 3

- Read the original to-be-cited text
- Examine the paraphrases
- How successful is each paraphrase?

SOURCE

- Angelo Corallo, Mariangela Lazoi, Marianna Lezzi,
- Cybersecurity in the context of industry 4.0: A structured classification of critical assets and business impacts,
- Computers in Industry,
- Volume 114, 2020, 103165,
- ISSN 0166-3615,
- <https://doi.org/10.1016/j.compind.2019.103165>.



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PARAPHRASE 3: Every step refers to an element that can be used to assess the impact on a business. This ensures that companies know which important assets need to be protected (Corallo et al., 2020).

Effectively paraphrased. Meaning is consistent with original.

Examine the example paraphrase. Which paraphrasing methods have been used?

- Synonyms
- Changing conjunctions / linkers
- Changing parts of speech
- Changing between a clause and phrase
- Changing the voice / word order

In particular, each step can represent an element to assess the business impact level, making companies aware of the critical assets on which to focus their defensive efforts.

PARAPHRASE 3: Every step refers to an element that can be used to assess the impact on a business. This ensures that companies know which important assets need to be protected (Corallo et al., 2020).

PARAPHRASE 3: Every step refers to an element that can be used to assess the impact on a business. This ensures that companies know which important assets need to be protected (Corallo et al., 2020).

Remember

- When doing academic reporting start with **YOUR** voice – topic & main idea sentences.
- **Research** is then used to **support your ideas** (voice).
- Ensure that your paragraph flows well through use of **signpost language and referencing techniques**.
- Use a **combination of paraphrasing techniques** when paraphrasing research e.g. using synonyms, changing word order, changing from active to passive.
- Be careful **not** to **change the meaning** when paraphrasing.

Embedded Language Support for REIT6811

Embedded Language Support Officer: Stuart Crosbie

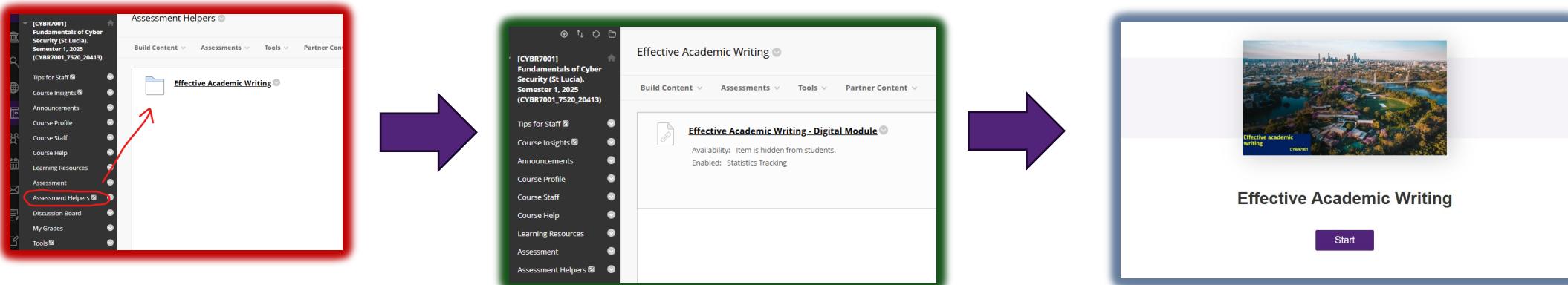
eaitelso@uq.edu.au



Scan the QR code and add to your contacts.

Semester 1 2025 REIT6811 - Learning Support

1. Online Assessment Helper materials housed in an Assessment Helper folder



2. Consultations & Practice sessions typically held in the FYELC shortly before assessment due dates.

Academic
Writing
Consultations

Presentation
Practice

Look for
announcements
on ed Discussion

FREE Academic and Language Support at UQ



Academic
Skills
Advisors

English for Academic Communication classes (EAC)
Choose from a range of classes targeting Academic writing and speaking skills



UQ Library
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Online MOOC courses

- Write101x – English Grammar and Style
- ACE101x – Academic English: How to Write an Essay
- ACE201x – Academic English: How to Write a Thesis



Self-enrolment
joining
instructions