



# [Goal-Driven Research & Publishing: the concept of peer reviewed materials (Academic Writing)]

[George Xydis]



Funded by  
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UNIVERSITÀ  
DEGLI STUDI  
FIRENZE



NEEST  
NEW ENERGY & ENVIRONMENTAL  
SOLUTIONS AND TECHNOLOGIES



AARHUS  
BSS

# AGENDA

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What is knowledge?

Problem Statement & methods

Structure of a report/paper

Evidence-based research

Ethics in Research

Academic misconducts

# WHY KNOWLEDGE IS USEFUL?

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Example: breast cancer leads to death

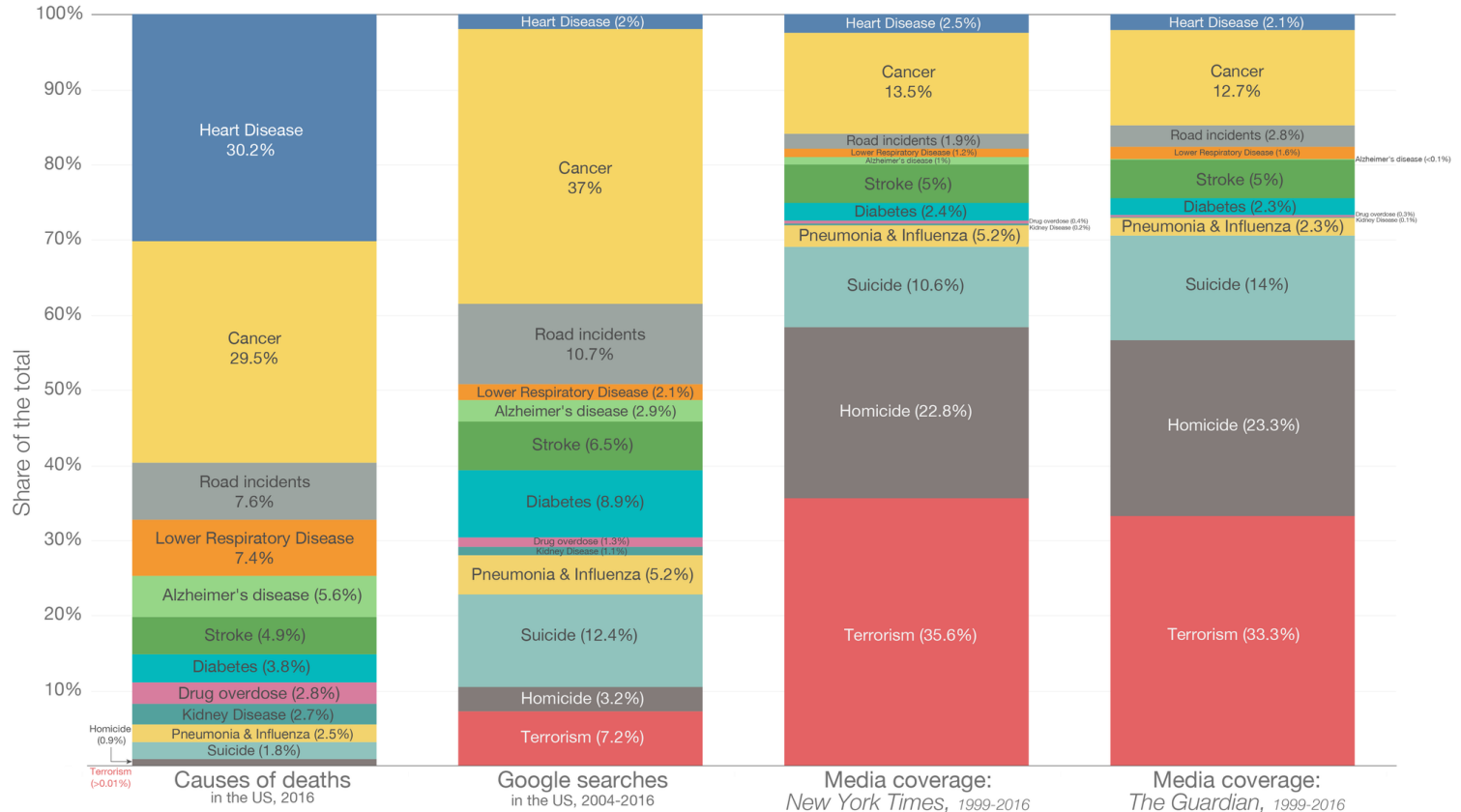
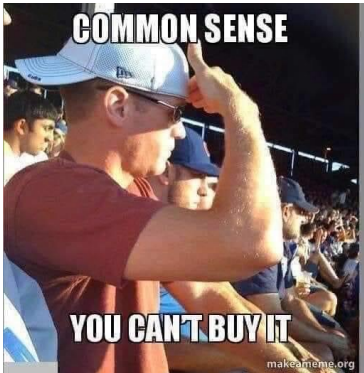
Based on Narod et al. (2015), only 3 percent of women diagnosed with an early stage of breast cancer (stage 0) will die of their disease within 20 years

*Narod, S.A., Iqbal, J., Giannakeas, V., Sopik, V., Sun, P., Breast cancer mortality after a diagnosis of ductal carcinoma in situ, 2015, JAMA Oncology, 1(7), pp. 888-896*

# Causes of death in the US

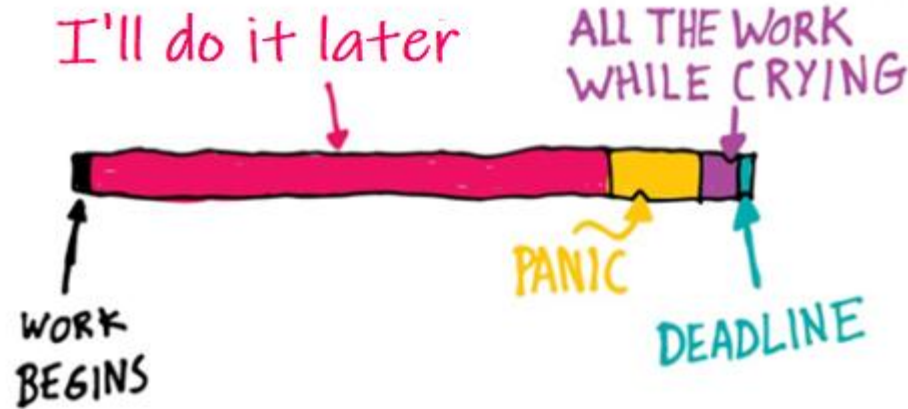
What Americans die from, what they search on Google, and what the media reports on

IN  
SCIENTISTS  
WE TRUST!



# PLAN YOUR RESEARCH...NOT LIKE THIS

## THE CREATIVE PROCESS



# START WITH THE PROBLEM STATEMENT

## **BEFORE WE START:**

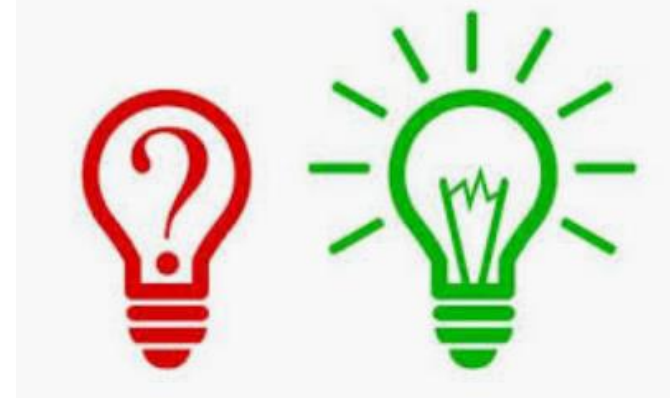
What's the problem?

Why am I dealing with it?

What's the current status? [STATE-OF-THE-ART]

If I solve the problem, how many are going to be influenced? [IMPACT]

How am I going to do it? [IMPLEMENTATION]



*"If you define the problem correctly, you almost have the solution" Steve Jobs*

# START WITH THE PROBLEM STATEMENT

- 
- The problem statement should spell out the **purpose** and **scope** of the problem, making clear how the study contributes to knowledge
  - Problem statement should be a statement describing whether and how the study contributes to (1) enriching an established line of theory and research; (2) a new theory; (3) practical concerns; or (4) remedying lack of information about a problem.



# HOW SHOULD WE MOVE ON? RESEARCH DESIGN

What is the **purpose of a research design**?

Design production of relevant (valid) knowledge  
(e.g. an answer to research questions)

What is the **purpose of a research design description**?

Describes (and discusses) **strengths and limitations** (e.g. suggestions for further research)

What are the **elements in a research design description**?

Several possible elements, but specific research activities/procedures (**selection, collection, analysis and validation**) should be described as well as argued for (e.g. related to methodological principles and paradigms)



# TYPES OF METHODS

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In any form of research, you will be required to either **count things** and/or **talk** to people. These two types of research method and their output data are classified as:

Quantitative

Qualitative

# TYPES OF METHODS

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**Quantitative** - as the name suggests, is concerned with trying to **quantify things**; it asks questions such as 'how long', 'how many' or 'the degree to which'. Quantitative methods look to quantify data

**Qualitative** – concerned with a quality of information, qualitative methods attempt to **gain an understanding** of the underlying reasons and motivations for actions and establish how people interpret their experiences and the world around them. Qualitative methods **provide insights** into the setting of a problem, generating ideas and/or hypotheses

# IN PRACTICE...😊

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Where will you start from?

How to structure your report?

**ANS:** From what's already been studied (someone else did the job for us)

# FIRST, HOW YOUR REPORT SHOULD BE STRUCTURED??

Abstract (Summary)

Table of Contents

Introduction (incl. literature review)

Methods

Results & Discussion

Conclusion

Acknowledgements

References (Bibliography)

## Article outline

### Highlights

Abstract

Keywords

1. Introduction

2. Methodology

3. Analysis and Constraints

4. Results

5. Discussion

6. Conclusion

References

# "LIBRARY" TRAINING

Scopus

Search Sources Alerts Lists Help SciVal Logged in via Aarhus Universitet

10 document results

TITLE-ABS-KEY (wind AND energy AND review)

Show results for: TITLE-ABS-KEY (wind AND energy AND review)

Edit Save Set alert Set feed

Search within results...

Analyze search results

Show all abstracts Sort on: Date (newest)

All Export Download View citation overview View cited by Add to List

	Document title	Authors	Year	Source	Cited by
1	Efficient thermal desalination technologies with renewable energy systems: A state-of-the-art review	Esfahani, I.J., Rashidi, J., Ifaei, P., Yoo, C.K.	2016	Korean Journal of Chemical Engineering 33(2), pp. 351-387	6

View abstract AU Link Related documents

## Open Access Resources

<https://ncu.libguides.com/c.php?g=643288&p=5216262>

Google Scholar

# ONLINE BIBLIOGRAPHIC DATABASES



Documents since 1966  
on educational research  
and practice

LexisNexis® Academic

Full-text news, business, legal,  
medical etc. Also useful for finding  
media industry news



Primarily from MEDLINE  
which indexes articles  
from about 3,900  
journals on health,  
medicine, biology etc

ScienceDirect

Full text of more than 1,700  
journals in the life, physical,  
medical, technical, and  
social sciences



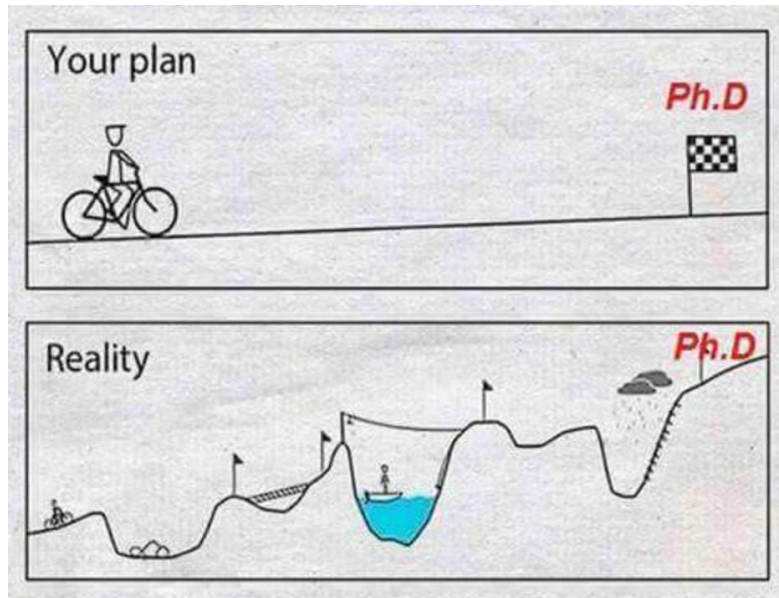
A multidisciplinary database  
which indexes major journals  
across disciplines.



Worldwide coverage of  
population, family planning,  
and related health issues

**How does a researcher select  
among bibliographic databases?**

# CHECKLIST FOR YOUR RESEARCH



Anthony C. Winkler & Jo Metherell *Writing the Research Paper: A Handbook*, Wadsworth

What You Must Do	What You Must Produce	When It Is Due
1. You must select a topic that is complex enough to be researched from a variety of sources but narrow enough to be covered in 10 or so pages.	Two acceptable topics, one of which the instructor will approve	At the end of the first week
2. You must do the exploratory scanning and reading of sources on your topic.		At the end of the second week
3. You must gather information on your topic and assemble it into some usable sequence.	Notes, a thesis statement, and an outline (APA format requires an abstract instead of an outline)	At the end of the third week
4. You must draft a thesis statement expressing the major idea behind your paper.	↓	↓
5. You must outline the major parts of your paper.		
6. You must write a rough draft of the paper arguing, proving, or supporting your thesis with information uncovered by your research. You must acknowledge all borrowed ideas, data, and opinions.	A rough draft of the paper	At the end of the fourth week
7. You must prepare a bibliography listing all sources used in the paper and you must write the final draft.	The paper, complete with bibliography	At the end of the fifth week

# WORDVICE ADVICES ON YOUR ABSTRACT

## PURPOSE AND MOTIVATION

Identify your purpose and motivation for doing this research.



- What made you decide to do this study or project?
- Why is this study important to your field or to the lay reader?
- Why should someone read your entire paper?

## PROBLEM



Explain the specific problem you are addressing.

- What is your research trying to better understand or what problem is it trying to solve?
- What is the scope of your study—does it try to explain something general or

## APPROACH



Discuss your approach; include methods and materials.

- Detail your research—methods/type of the study, variables, and extent of work
- Briefly present evidence to support your claim
- Highlight your most important sources

## RESULTS



Summarize your results.

- What did your study yield in concrete terms?
- How did results compare to your hypothesis?
- Where there highly unexpected

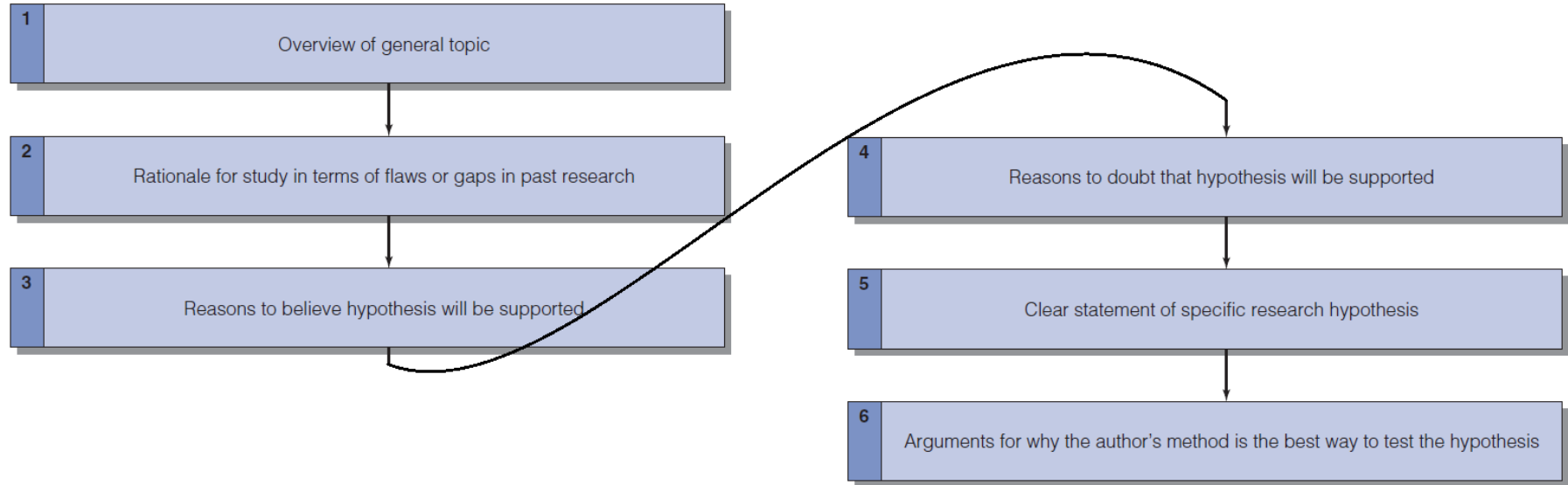
## CONCLUSION

State your conclusion.

- What are the exact effects of these results on my field or the wider world?
- What other kinds of studies would yield further solutions to problems?
- What other information is needed to expand knowledge in this area?



# INTRODUCTION



General Flow Chart of an Introduction

*Mark L. Mitchell and Janina M. Jolley, Research Design Explained, Wadsworth*

# INTRODUCTION USUALLY INCLUDES LITERATURE REVIEW

—  
  
—  
  
WHAT IS A LITERATURE REVIEW?  
WHY DO YOU HAVE TO DO ONE?

It is a systematic, explicit, and reproducible method for synthesizing and evaluating the existing body of recorded work produced by researchers, scholars, and practitioners in a specific field.

It focuses on high quality original research

# INTRODUCTION USUALLY INCLUDES LITERATURE REVIEW

## — A RESEARCH LITERATURE REVIEW USUALLY INCLUDES SEVEN TASKS

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1. Selecting the research questions that will guide the review
2. Selecting published paper databases, websites, and other bibliographic sources
3. Selecting keywords (or phrases)

# SCREENING

## — A RESEARCH LITERATURE REVIEW USUALLY INCLUDES SEVEN TASKS

### — 4. screening & preliminary evaluating of articles

<input type="checkbox"/> 1	Efficient thermal desalination technologies with renewable energy systems: A state-of-the-art review	Esfahani, I.J., Rashidi, J., Ifaei, P., Yoo, C.K.	2016	Korean Journal of Chemical Engineering	33(2), pp. 351-387	6
	<a href="#">View abstract</a>	<a href="#">AU Link</a>		<a href="#">Related documents</a>		
<input type="checkbox"/> 2	2015 IEEE Conference on Technologies for Sustainability, SusTech 2015	[No author name available]	2015	2015 IEEE Conference on Technologies for Sustainability, SusTech 2015		0
	<a href="#">View abstract</a>	<a href="#">AU Link</a>				
<input type="checkbox"/> 3	2013 2nd International Conference on Sustainable Energy and Environmental Engineering, ICSEEE 2013	[No author name available]	2014	Applied Mechanics and Materials	521	0
	<a href="#">View abstract</a>	<a href="#">AU Link</a>				
<input type="checkbox"/> 4	3rd International Conference on Energy and Environmental Protection, ICEEP 2014	[No author name available]	2014	Advanced Materials Research	953-954	0
	<a href="#">View abstract</a>	<a href="#">AU Link</a>				
<input type="checkbox"/> 5	2nd International Conference on Advances in Energy and Environmental Science, ICAEES 2014	[No author name available]	2014	Advanced Materials Research	1008-1009	0
	<a href="#">View abstract</a>	<a href="#">AU Link</a>				
<input type="checkbox"/> 6	2013 International Conference on Energy Engineering and Environmental Engineering, ICEEE 2013	[No author name available]	2013	Applied Mechanics and Materials	316-317	0
	<a href="#">View abstract</a>	<a href="#">AU Link</a>				

Screening is based on factors such as the **language** of the article, **type** of the article, **date** of publication etc

# INTRODUCTION USUALLY INCLUDES LITERATURE REVIEW

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## A RESEARCH LITERATURE REVIEW USUALLY INCLUDES SEVEN TASKS

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5. Applying methodological screening criteria evaluating **scientific quality**.
6. Doing the review (abstracting data from articles)
7. Synthesizing the results (in most of the cases it involves the use of **statistical** methods to combine the results)

# HOW METHODOLOGY SECTION SHOULD BE STRUCTURED??

## Structure – Methodology

- **Goals**
  - Describe in detail the hypotheses and methodologies employed to tackle the problem
- **How?**
  - Describe the **originally proposed methods** (or significant modifications of older methods)
    - **Detailed description**
    - **Other known methods**
      - Reference or brief description might suffice

## Structure – Methodology



Focus this section on the **how** question

Start with an **overall diagram** that synthesizes the whole method

- Then, structure the methodology section according to the components in that diagram

Remember **readers** should be able to **replicate your work**

- Provide **full details**

Remember **reviewers** should be able to **evaluate your work**

*Prof. Rui Pedro Paiva, How to Write Good Scientific Papers: A Comprehensive Guide*

# HOW RESULTS & DISCUSSION SHOULD BE STRUCTURED??

## Results

- Tells about outcomes/findings of the research study.
- presents the data and findings, ordered/analyzed in ways justified earlier (methodology)
- past tense is a feature here (usually)
- describes the findings in a simple way with the help of data .
- Figures and tables appear here.

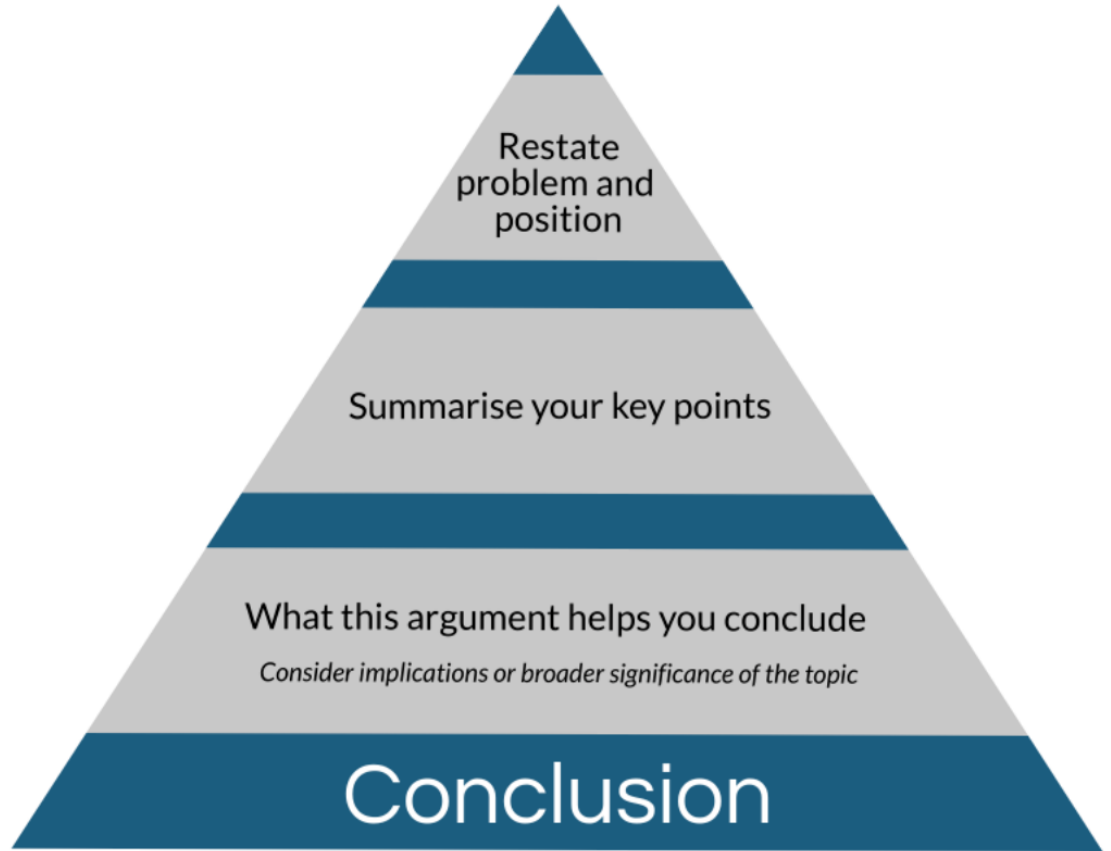
## Discussion

- What does the result or data from the experiment mean to us is described in discussion.
- Function of discussion is to :
  - Interpret results in light of what was already known about the subject and
  - Explain new understanding of the problem after taking results into consideration.
- Explain how the results answer the question under study.

*Shalini Pandey, RESEARCH SCHOLAR at MPUAT, Udaipur, Results and discussion*

# CONCLUSIONS?

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Monash University, Writing the Conclusion, Available: <https://www.monash.edu/rlo/assignment-samples/assignment-types/writing-an-essay/writing-the-conclusion>



# EXERCISE 1

In recent years both the demand and supply for upgrade solutions and repair services are growing. The majority of the American turbine owners are motivated to be able to operate their various fleets of wind turbines on their own and gain sufficient knowledge to do so in a professional manner. With this goal in mind, the learning curve includes optimizing operation cost, fine-tuning practices, and building a network with suppliers. This work focused on hydraulic pitch system designed for a modern wind turbine, technology overview, and economic loss due to leakage. Furthermore, the work covers the drivers of the customers, performance requirements, and evaluation the current solutions that are available on the market. The possible solutions are listed for each scenario and follow up actions are suggested on how to control future processes. The paper describes how to optimize the long-term running costs and discuss on the changes that could maximize the availability percentage. The findings can be also applied to both other platforms in the product line and even other Original equipment manufacturers' (OEM) turbines to a certain extent.

# EXERCISE 1

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## What is that? Abstract or Conclusions?

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Abstract

Conclusions

# QUESTION

What if I gather info from online sources, google, Wikipedia, and companies' websites?

*“Evidence-based education” requires evidence-based research to back it up*

# EVIDENCE-BASED APPROACH

## TRADITIONAL VS. SYSTEMATIC REVIEWS

Traditional reviews provide an overview of a research topic with no definite methodological approach. Information is interpreted with subjective summaries of findings and it is discussed from a theoretical point of view.

Systematic reviews are overviews of the literature undertaken by identifying, critically synthesising results of research using an explicit, methodological approach. They aim to summarise the best available evidence on a particular research topic.



Evidence-based approach

# EVIDENCE-BASED APPROACH

The evidence-based approach is about the reliability of findings through utilizing an **accumulation** of evidence through multiple studies.

The evidence-based approach to reporting the outcomes of statistical tests is about the reliability of findings.

*The evidence-based approach is the knowledge that **a single study is not sufficient** to use as evidence to substantiate a hypothesis or theory*

# THE KYOCERA-UNIMERCO CASE

- **Kyocera-Unimerco** has a goal to reduce power consumption by 1% a year. They need to change from experienced-based to **data-driven decisions**
- What is the fluctuation in power consumption related to activity level in the building? What can be done to reduce the idle consumption?



*In collaboration with Kyocera-Unimerco*

# EMPIRICAL APPROACH vs EVIDENCE-BASED

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Are these two so different? Or maybe supplementary?

**“The scientific method is firmly based on the empirical approach. The empirical approach is an evidence-based approach that relies on direct observation AND experimentation in the acquisition of new knowledge”**

*Kazdin, A. E. (2003). Methodology: What it is and why it is so important. In A. E.*

*Kazdin (Ed.), Methodological issues and strategies in clinical research (3rd ed., pp. 5-22). Washington, DC: American Psychological Association.*

# RESPONSIBLE RESEARCH AND ACADEMIC MISCONDUCTS

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## ETHICS IN RESEARCH





# RESPONSIBLE RESEARCH

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Ethics is the philosophical study of morality, a rational examination into moral beliefs and behaviors, the study of right and wrong, of good and evil in human conduct.

Since engineers and scientists will undoubtedly be involved in projects that involve social impact, it is essential to be informed on all aspects of ethical conduct prior to planning such projects.

# RESPONSIBLE RESEARCH

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The most known example is of responsible research is the American theoretical physicist and professor of physics, **Julius Robert Oppenheimer**. He died at the age of sixty-two in Princeton, New Jersey on February 18, 1967. He is seen as the “**father**” of the **atomic bomb**.

Funny enough, Oppenheimer in 1911 he entered the **Ethical Culture Society School**. This had been founded by Felix Adler to promote a form of ethical training based on the Ethical Culture movement.

# THE IMPACT OF SCIENCE ON TECHNOLOGY

## EXAMPLES

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- ▶ Basic research on microwave radiation gave rise to the invention of the laser.
- ▶ The compact disc enabled the development of supermarket checkout counter technology.
- ▶ The Hubble telescope allowed new measurements to be made
- ▶ Electronic microscope, which lead to several new scientific findings in the realm of cellular biology and in other scientific fields

# WHY ACADEMIC WRITING IS USEFUL?

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Academic writing can be conceptualized as the proactive positioning of your concepts.

Write for impact

“Could we get this study published somewhere?”

“Is this a good idea?”

# PLAGIARISM

Do you know this guy?

## Karl-Theodor zu Guttenberg



Former:

German Minister of Defence

Minister for Economics and Technology

Secretary General of the Christian Social Union

He was voted Germany's **most popular politician**.

Often tipped to be a **future chancellor**

# PLAGIARISM

Karl-Theodor zu Guttenberg resigned in 2011 as defense minister after being engulfed by a **plagiarism scandal**



- **Lost his doctorate**
- **In wiki it says that he's a businessman, not a politician**  
Denied that the thesis had been written by a ghost-writer

[https://en.wikipedia.org/wiki/Guttenberg\\_plagiarism\\_scandal](https://en.wikipedia.org/wiki/Guttenberg_plagiarism_scandal)



• 3rd+

MBA, Trainer and Lecturer, Coach,  
Crisis and HR expert, Public  
Speaker, Columnist, Writer, Ghost  
Writer

Message

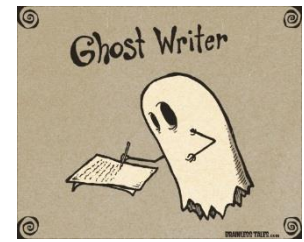
**They think it is a good  
thing to be!!!!**

**Academic ghostwriting is  
academic dishonesty.**

106 students in a Greek  
university few weeks ago where  
caught for plagiarism and  
delivered exactly the same  
document!!!

Price for a MSc thesis: EUR1,200

# GHOST-WRITERS



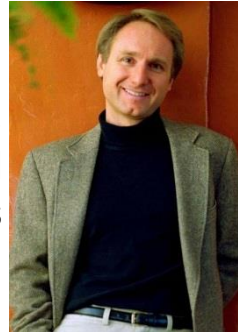
# HIGH PROFILE NOTICED CASES OF PLAGIARISM



Melania Trump's speech from the 2016 Republican National Convention appeared to plagiarize First Lady Michelle Obama's speech to the Democratic National Convention in 2008



In 2008, President Obama's first accusation of plagiarism followed his speech in Milwaukee, with passages nearly identical to the Governor of Massachusetts speech, Deval Patrick, two years earlier



Dan Brown has been sued seven times for plagiarism over the years, mainly because using his uncited theories from Russian historian, Mikhail Aniki in The Da Vinci Code



# PLAGIARISM

## DIFFICULT TO AVOID IN AN ONLINE WORLD

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But what's plagiarism? It's one of research misconducts  
**It's the practice of taking someone else's work or ideas and present them  
as your own!**

**Citing, Reference, Quoting, Expressions are extremely important**

Imagine how serious misconduct is that there is a  
**Plagiarism Resource Center at the University of Virginia**

Site provides free software to detect plagiarism:

<http://plagiarism.bloomfieldmedia.com/wordpress/>

# OTHER RESEARCH MISCONDUCTS

## Fabrication

making up data or scientific results and present them



# OTHER RESEARCH MISCONDUCTS

## Falsification

manipulating  
research results, or on  
purpose omitting data  
such that the research  
is not accurately  
published



# WHY DO STUDENTS PLAGIARIZE?

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- Lack of research skills
  - Lack of writing skills
- Problems evaluating Internet sources
  - Misconceptions about terminology
- Poor time management, Pressure, and organizational skills
  - Product-oriented writing assignments
    - Cultural factors

# HOW MUCH IS ALTERED?? A USEFUL EXAMPLE

By using the thesaurus-key in word-processing, anyone can now quickly change all the significant words in a sentence to produce a different one, which moreover dodges the detection routines of traditional search engines

By applying the glossary function in text processing, any person can now promptly modify every single notable term in a phrase to construct a dissimilar one, which additionally avoids the recognition procedures of conventional search routines

# PLAGIARISM CHECKERS ONLINE: NOT THE BEST SOLUTION, BUT YOU GET AN IDEA



Tons of software tools that can assist you

Turnitin - Technology to Improve Student Writing

[turnitin.com/](https://turnitin.com/) ▼

Turnitin creates tools for K-12 and higher education that improve writing and prevent plagiarism.  
Turnitin's formative feedback and originality checking services ...

"Ithenticate"

(<http://ithenticate.com/>)



Ephorus and Turnitin are joining forces!

**Greater** features

**Better** technology

**Larger** content database



# MORE SOFTWARE TOOLS



## Doc Cop – Free Plagiarism Detection Service

SafeAssign is a tool used to prevent plagiarism and to create opportunities to help students identify how to properly attribute sources rather than paraphrase. SafeAssign is effective as both a deterrent and an educational tool.

SafeAssign compares submitted assignments against a set of sources to identify areas of overlap between the submitted assignment and existing works.

- ✓ Available for **Blackboard Learn**
- ✓ **Get help with SafeAssign**

**SOFTWARE  
ANTIPLAGIO**

EVE2 (Easy Verification Engine)



**Moss** <https://theory.stanford.edu/~aiken/moss/>

## A System for Detecting Software Similarity

# STUDENT'S APPROACH ON PLAGIARISM

A study (on-line survey) at the metropolitan Australian university  
(approx. 1500 students participated).

Behaviour	Never done	Have done occasionally
Helped friend to write their assignment	64	36
Given notes to friend to help them with assessment tasks	43	57
Borrowed friends' notes to complete assessment tasks	72	18
Copied information from a friend's assignment	90	10
Copied information directly from Web sites without acknowledgement	89	11
Copied information directly from texts without acknowledgement	89	11
Not used quotation marks to identify text taken directly from other sources	80	20



# FACULTY MEMBERS (SCARY) APPROACH

A study on a swedish university

Question No.	Question Text	Answer: YES	Answer: NO	Answer: Unsure
13	Is plagiarism cheating?	33	1	5
15	Do you believe plagiarism and cheating could be reduced by making students more responsible for their own learning?	27	4	10
16	Are there occasions when plagiarism is justifiable?	3	34	4
17	Is it plagiarism to word-by-word copy a text, include a reference, but leave out quotation marks?	24	9	7
18	Is it plagiarism to translate a text to Swedish without quotation or references?	37		3
19	A task is undertaken in pairs. The ability to work together is important but each student is to submit individually. Is it plagiarism if two students submit highly similar reports, yet do not reference each other?	15	12	13
20	Is it plagiarism to use one's own work without referencing?	16	7	17

# WHAT INSTITUTES/UNIVERSITIES SHOULD DO? MEASURES SHOULD BE TAKEN?

1. A nonplagiarism declaration which must be signed on enrolment.
2. A Science Communication course which shall deal with plagiarism as an ethical issue
3. Scientific Writing Skills workshops to be given to students

## *Penalties for committing plagiarism at Brunel University*

Level 1 undergraduate students	A fine of £100 and a severe warning
Level 1 undergraduate students (repeat offence)	Expulsion without credits. Barred from re-admission to the University
Level 2 and 3 undergraduate students	Expulsion without credits. Barred from re-admission to the University
Postgraduate students	Expulsion without credits. Barred from re-admission to the University
Students at undergraduate Level 2 and 3, and postgraduate students, committing offences without clear premeditation	Expulsion but permitted to retain credits and/or award to which the credits lead. Barred from re-admission to the University

# WHAT INSTITUTES/UNIVERSITIES SHOULD DO? MEASURES SHOULD BE TAKEN?

## Graduate Academic Misconduct Policy Report of Informal Resolution

Krieger School of Arts and Sciences  
Whiting School of Engineering

Faculty must consult with their respective divisional Academic Integrity Officer (AIO) before establishing an informal resolution, and are required to email this form to the AIO upon completion. The form will be filed in a student conduct file and will not be sent to the department. Informal resolutions are reserved for eligible students only.

Research misconduct does not fall under this policy.

For more information, visit: <http://homewoodgrad.jhu.edu/academics/policies/>

Academic Integrity Officer (Select  
Appropriate AIO for your program)

WSE-Fulltime Programs Asst Dean Ch

Date of  
Resolution

Reporting Faculty Name (Last,First)

Faculty's JHU Email  
Address

Student Name (Last, First)

Student's JHU Email  
Address

Student's Hopkins  
(SIS) ID

Student's Primary Department

Student's Degree

Student has been referred to the  
policy and has no prior  
infractions at JHU.

☐ Yes

Date (s) of alleged academic misconduct

Relevant Course Number and Title (if alleged  
misconduct took place in a course)



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Increased demand for energy. Growing interest in efficient, renewable sources. Heightened awareness of climate change. You can help manage this delicate balance between the changing environment and an energy-dependent society.

REQUEST INFO

APPLY NOW

### DEGREE TYPE

Master of Science

### ENTRY TERMS

Fall, Spring, and Summer

### MODE OF STUDY

Online, Onsite

### LOCATION

Washington, DC

### REQUIREMENTS

10 courses

### TIME TO COMPLETE

12 - 24 months

### TUITION

\$4,214 per course. [Learn more about tuition and fees.](#)



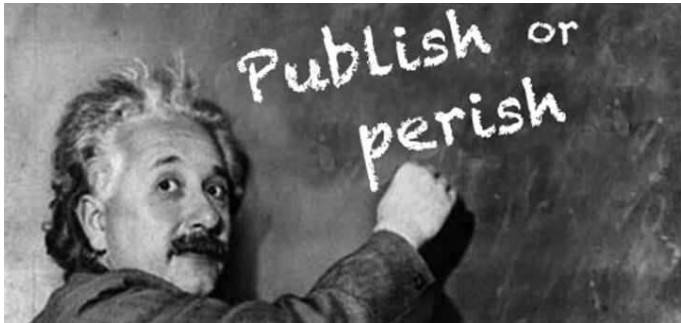
SCHOOL OF BUSINESS AND SOCIAL SCIENCES  
AARHUS UNIVERSITET



# WHY DO FACULTY MEMBERS PLAGIARIZE?

## *"PUBLISH OR PERISH"*

A phrase coined to describe the pressure in academia to continually publish academic work to maintain or evolve a researcher's career. In the academic perception, scholars who publish infrequently may lose ground in competition for available tenure-track positions



George Mason University psychologist June Tangney explains that  
“it's almost like talking about money”

# “OTHER WAYS” (DELIBERATELY MISLEAD THE EDITOR)

## CASE TEXT (ANONYMISED)

Paper A appeared in a foreign language journal, together with an English abstract. Paper B was submitted to us, and one of our referees alerted us to the similar content.

Closer inspection, including retrieval of the original foreign language manuscript and review by a deputy editor with a working knowledge of that language, and inspection of the tables by the editor and another editor, indicated that the two papers contained largely identical data and had a similar content. The foreign language version included slightly more detail on the research setting, methods, and results compared with the English version, while in the English version there were some additional analyses and minor changes in the title and organisation of the content. Despite these differences, the text of the two versions was similar and the main messages and conclusions were the same.

On submission to us, paper B did not make reference to, acknowledge, or cite the previous foreign language publication. The covering letter to the journal stated: “Please note that neither the entire paper nor any part of its content has been published or accepted by another journal. The paper is not being submitted to any other journal”. When asked to supply the earlier paper, the authors included a covering note pointing to some differences (which we believe to be minor) and acknowledged “the possibility of an overlap between the foreign language paper and the submitted manuscript”.

We believe that parallel publication is quite common and acceptable when the purpose is to disseminate data from a foreign language-only paper more widely, but wonder whether the authors should have been more forthcoming or accurate in their citations and covering letter.



Paper-1

Contents lists available at ScienceDirect

## Solar Energy Materials and Solar Cells

Journal homepage: [www.elsevier.com/locate/solmat](http://www.elsevier.com/locate/solmat)



### Ageing effects of perovskite solar cells under different environmental factors and electrical load conditions



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#### ARTICLE INFO

##### Keywords:

Perovskite

Power conversion

Solar cells, ageing behaviour

#### ABSTRACT

Perovskite solar cells have achieved power-conversion efficiency values approaching those of established photovoltaic technologies, making the reliable assessment of their operational stability the next essential step towards commercialization. Although studies increasingly often involve a form of stability characterization, they are conducted in non-standardized ways, which yields data that are effectively incomparable. Furthermore, stability assessment of a novel material system with its own peculiarities might require an adjustment of common standards. Here, we investigate the effects of different environmental factors and electrical load on the ageing behaviour of perovskite solar cells. On this basis, we comment on our perceived relevance of the different ways these are currently aged. We also demonstrate how the results of the experiments can be distorted and how to avoid the common pitfalls. We hope this work will initiate discussion on how to age perovskite solar cells and facilitate the development of consensus stability measurement protocols.

# Systematic investigation of the impact of operation conditions on the degradation behaviour of perovskite solar cells

Konrad Domanski<sup>1\*</sup>, Essa A. Alharbi<sup>1</sup>, Anders Hagfeldt<sup>2</sup>, Michael Grätzel<sup>1</sup> and Wolfgang Tress<sup>1,2\*</sup>

Perovskite solar cells have achieved power-conversion efficiency values approaching those of established photovoltaic technologies, making the reliable assessment of their operational stability the next essential step towards commercialization. Although studies increasingly often involve a form of stability characterization, they are conducted in non-standardized ways, which yields data that are effectively incomparable. Furthermore, stability assessment of a novel material system with its own peculiarities might require an adjustment of common standards. Here, we investigate the effects of different environmental factors and electrical load on the ageing behaviour of perovskite solar cells. On this basis, we comment on our perceived relevance of the different ways these are currently aged. We also demonstrate how the results of the experiments can be distorted and how to avoid the common pitfalls. We hope this work will initiate discussion on how to age perovskite solar cells and facilitate the development of consensus stability measurement protocols.



# Pioneering Physics Papers Under Suspicion for Data Manipulation

Recent discoveries at Bell Laboratories—the research arm of Lucent Technologies in Murray Hill, New Jersey—said to be of Nobel quality suddenly became mired in questions last week. Outside researchers presented evidence to Bell Labs management on 10 May suggesting possible manipulation of data involving five papers published in *Science*, *Nature*, and *Applied Physics Letters* over 2 years. In response, Bell Labs officials said that they are forming a committee of independent researchers to investigate. Their conclusions may not be known for months, but scientists who have seen the data are already saying that the potential fallout from the investigation could be devastating.

The Bell Labs papers describe a series of different experiments with organic conduc-

Angeles, and director of the California NanoSystems Institute: “It’s hard to understand. I know these people. Most of them are good, careful scientists.” “It’s a little overwhelming,” adds Lydia Sohn, a Princeton University physicist who helped bring some of the discrepancies to light. “It’s just disturbing, and disappointing, and sad.” The noise pattern is particularly disturbing, says Charles Lieber, a chemist and nanoscience expert at Harvard University in Cambridge, Massachusetts: “It’s virtually impossible for me to believe that some of this wasn’t made up.”

Schön himself acknowledges that the similar noise pattern is “difficult to explain.” But others affiliated with Bell Labs suggest privately that a systematic artifact in the measurement equipment might account for



## Retraction

WE WISH TO RETRACT OUR REPORT “CDX2 GENE EXPRESSION AND TROPHECTODERM LINEAGE specification in mouse embryos” (1). Allegations of research misconduct were received by the University of Missouri–Columbia (MU) Provost, and an investigation found that the first author (K.D.) engaged in research misconduct by intentionally falsifying and fabricating digital images in the preparation of Figs. 4I; 4N; 4S; 2G; 3, J to L; S2, V to X; and S6, I to K accompanying the *Science* article. In addition, the original raw image files for the majority of the figures in the paper have not been located (the exceptions being the confocal scanning images in Figs. S1, S3, S4, S5, and S6), raising the possibility that the data they represent may also be suspect. We have decided to withdraw the article in its entirety in view of the fact that the paper was founded at least in part on falsified or fabricated images.

The corresponding author (R.M.R.) takes responsibility for placing excessive trust in his co-worker and for not assuring that a complete set of raw data existed at the time the questions first arose about the paper. We deeply regret any scientific misconceptions that have resulted from the publication of this article.

The first author resigned from MU shortly after the allegations of research misconduct were received and could not be found to sign the retraction.

R. MICHAEL ROBERTS,<sup>1</sup> M. SIVAGURU,<sup>2</sup> H. Y. YONG<sup>3</sup>

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04 February 2018

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**SOUTH KOREA**

## Eighty-two cases of offspring named as co-authors

**Aimee Chung** 29 January 2018 [Issue No:491](#)

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Some 82 cases of professors listing their secondary school offspring as co-authors in academic papers have been unearthed by an investigation by South Korea's ministry of education.

The discovery has prompted referrals to ethics committees at 29 universities – including some of the country's top institutions – where the practice stretching back 10 years was uncovered.

It could lead to disciplinary action in some cases, under Korea's strict research misconduct laws which cover author attribution of research papers.

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# HOW? – PREPARATION AND SUBMISSION OF YOUR WORK:



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Economic Modelling



Volume 89, July 2020, Pages 397-413



## Price volatility spillovers between supply chain and innovation of financial pledges in China

Haiqing Hu <sup>a</sup>, Di Chen <sup>a</sup>, Bo Sui <sup>b</sup>, , Lang Zhang <sup>a</sup>, Yinyin Wang <sup>a</sup>

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<https://doi.org/10.1016/j.econmod.2019.11.012>

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### Highlights

- Firstly, we place more emphasis on the abstract and introduction parts.
- Secondly, we re-write some expressions in the empirical analysis.
- Finally, we have employed a professional English language editor to proofread the writing and format of the paper.

### Highlights

- A very simple proof for the rule by which we calculate probabilities in quantum mechanics.
- It is a really simple proof.
- It is truly an amazingly simple proof.



# CASE

## Hypothesis:

---

You are a student's supervisor. The Head of the MSc programme gives you the data the student needs to work with. The student's work is so good that you (the supervisor) decide to prepare his work for a journal publication. You include in the authors the name of the Head of the MSc programme asking him if he wants to be included. He never replies, even after several emails you send him. Will you keep his name in the co-authors?

# A MASSIVE CASE OF FRAUD

**C&EN**  
CHEMICAL & ENGINEERING NEWS

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Home » Science & Technology » A Massive Case Of Fraud

**SCIENCE / TECHNOLOGY**

FEBRUARY 18, 2008 | VOLUME 86, NUMBER 07 | PP. 37-38

## A Massive Case Of Fraud

Journal editors are left reeling as publishers move to rid their archives of scientist's falsified research

William G. Schultz

A CHEMIST IN INDIA has been found guilty of plagiarizing and/or falsifying more than 70 research papers published in a wide variety of Western scientific journals between 2004 and 2007, according to documents from his university, copies of which were obtained by C&EN. Some journal editors left reeling by the incident say it is one of the most spectacular and outrageous cases of scientific fraud they have ever seen.

The culprit, sources say, is chemistry professor Pattim Chiranjeevi of Sri Venkateswara University in Tirupati, India. SVU conducted an investigation into Chiranjeevi's work after a journal editor presented evidence to university officials that the professor had plagiarized and possibly falsified several manuscript submissions. Chiranjeevi, who communicates through a wide variety of e-mail addresses, has not responded to multiple requests for comment by C&EN.

Chiranjeevi retains his teaching position at SVU, according to a university source who has requested anonymity. "He is a permanent employee of the university, and the administration cannot fire him easily," the source says. Instead, Chiranjeevi has been barred from research and research supervision and from holding any administrative post at the university.



**A CHEMIST IN INDIA** has been found guilty of plagiarizing and/or falsifying more than 70 research papers published in a wide variety of Western scientific journals between 2004 and 2007, according to documents from his university, copies of which were obtained by C&EN. Some journal editors left reeling by the incident say it is one of the most spectacular and outrageous cases of scientific fraud they have ever seen.

# RESEARCH ETHICS

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Before going to plagiarism (which means publishing) other values are required:

- Honesty
- Objectivity
- Integrity
- Carefulness
- Openness
- Respect for Intellectual Property
- Confidentiality
- Social Responsibility
- Responsible Mentoring
- Non-Discrimination
- Legality
- Human Subjects Protection

# DUPLICATE AUTHORS SAY (ACCORDING TO A RECENT STUDY)

- 
- 28% denied any wrongdoing,
  - 35% admitted to having borrowed previously published material
  - 22% were from coauthors claiming no involvement in the writing of the manuscript.
  - 17% claimed they were unaware that their names appeared on the article

93% of the original authors were not aware of the duplicate's existence.

# CONFIDENTIALITY

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**A TS1 project was strictly  
confidential**

**All info was classified**





# SOCIAL RESPONSIBILITY (OF BUSINESSES)

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Well known scandals:

**Nestlé boycott (baby milk scandal)**

**Enron scandal (California electricity crisis): state of emergency for more than 2 years**

**Volkswagen scandal**

# RESPECT FOR INTELLECTUAL PROPERTY (IP)

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IP includes patents, copyrights, and other forms of intellectual property.

Do not use unpublished data, methods, or results without permission. Give credit where credit is due.

**EU policy stresses the importance on IP rights (IPR)**

[https://ec.europa.eu/growth/industry/intellectual-property\\_en](https://ec.europa.eu/growth/industry/intellectual-property_en)



## A SCUFFLE OVER STRIPES



In 1994, Adidas and Payless got into a scuffle over stripes. Adidas had used its three-stripe mark as a logo of sorts since 1952, and had recently registered it as a trademark. But Payless was selling confusingly similar athletic shoes with two and four parallel stripes. The two companies hashed out a settlement, but by 2001, Payless was again selling the look-alikes. Fearing that the sneakers would dupe buyers and tarnish its name, Adidas America Inc. demanded a jury trial. The trial lasted seven years, during which 268 pairs of Payless shoes were reviewed. In the end, Adidas was awarded \$305 million—\$100 million for each stripe, as the Wall Street Journal's Law Blog calculated.

# RESPONSIBLE MENTORING & LEGALITY

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Mentoring: Help to educate, mentor, and advise students. Promote their welfare and allow them to make their own decisions

Legality: Know and obey relevant laws and institutional and governmental policies

# EU RESEARCH

## Declarations

1) The coordinator declares to have the explicit consent of all applicants on their participation and on the content of this proposal.	<input checked="" type="checkbox"/>
2) The information contained in this proposal is correct and complete.	<input checked="" type="checkbox"/>
3) This proposal complies with ethical principles (including the highest standards of research integrity — as set out, for instance, in the <a href="#">European Code of Conduct for Research Integrity</a> — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct).	<input checked="" type="checkbox"/>
4) The coordinator confirms:	
- to have carried out the self-check of the financial capacity of the organisation on <a href="http://ec.europa.eu/research/participants/portal/desktop/en/organisations/lfv.html">http://ec.europa.eu/research/participants/portal/desktop/en/organisations/lfv.html</a> or to be covered by a financial viability check in an EU project for the last closed financial year. Where the result was "weak" or "insufficient", the coordinator confirms being aware of the measures that may be imposed in accordance with the H2020 Grants Manual (Chapter on Financial capacity check); or	<input type="radio"/>
- is exempt from the financial capacity check being a public body including international organisations, higher or secondary education establishment or a legal entity, whose viability is guaranteed by a Member State or associated country, as defined in the H2020 Grants Manual (Chapter on Financial capacity check); or	<input checked="" type="radio"/>
- as sole participant in the proposal is exempt from the financial capacity check.	<input type="radio"/>
5) The coordinator hereby declares that each applicant has confirmed:	
- they are fully eligible in accordance with the criteria set out in the specific call for proposals; and	<input checked="" type="checkbox"/>
- they have the financial and operational capacity to carry out the proposed action.	<input checked="" type="checkbox"/>
The coordinator is only responsible for the correctness of the information relating to his/her own organisation. Each applicant remains responsible for the correctness of the information related to him/her and declared above. Where the proposal to be retained for EU funding, the coordinator and each beneficiary applicant will be required to present a formal declaration in this respect.	

## 5. Ethics and security

### 5.1 Ethics

No Ethics issues have been identified.

### 5.2 Security

Please indicate if your project will involve:

- Activities or results raising security issues: NO
- 'EU-classified information' as background or results: NO

# HUMAN SUBJECTS PROTECTION - EU RESEARCH

## 4 - Ethics issues table

1. HUMAN EMBRYOS/FOETUSES	
Does your research involve <a href="#">Human Embryonic Stem Cells (hESCs)</a> ?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Does your research involve the use of human embryos?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Does your research involve the use of human foetal tissues / cells?	<input type="radio"/> Yes <input checked="" type="radio"/> No
2. HUMANS	
Does your research involve human participants?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Does your research involve physical interventions on the study participants?	<input type="radio"/> Yes <input checked="" type="radio"/> No
3. HUMAN CELLS / TISSUES	
Does your research involve human cells or tissues (other than from Human Embryos/ Foetuses, i.e. section 1)?	<input type="radio"/> Yes <input checked="" type="radio"/> No
4. PERSONAL DATA	
Does your research involve personal data collection and/or processing?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Does your research involve further processing of previously collected personal data (secondary use)?	<input type="radio"/> Yes <input checked="" type="radio"/> No

5. ANIMALS	
Does your research involve animals?	<input type="radio"/> Yes <input checked="" type="radio"/> No
6. THIRD COUNTRIES	
In case non-EU countries are involved, do the research related activities undertaken in these countries raise potential ethics issues?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Do you plan to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Do you plan to import any material - including personal data - from non-EU countries into the EU?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Do you plan to export any material - including personal data - from the EU to non-EU countries?	<input type="radio"/> Yes <input checked="" type="radio"/> No
In case your research involves <a href="#">low and/or lower middle income countries</a> , are any benefits-sharing actions planned?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Could the situation in the country put the individuals taking part in the research at risk?	<input type="radio"/> Yes <input checked="" type="radio"/> No

# HUMAN SUBJECTS PROTECTION

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Research involving vulnerable persons, which may include

- ▶ children,
  - ▶ persons with developmental or cognitive disabilities,
  - ▶ persons who are institutionalized,
  - ▶ the homeless or those without legal status,
- also raises unique issues in any research context.

# CODES OF ETHICS

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There are several other Codes of Ethics for engineers in the various technical and scientific societies;

examples are codes established by the

- ▶ Institute of Electrical and Electronics Engineers [IEEE, 2011],
- ▶ the American Society of Mechanical Engineers [ASME, 2011],
- ▶ and the Biomedical Engineering Society [BMES, 2011].



# CONFLICT OF INTEREST

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A situation in which the concerns or aims of two different parties are incompatible.

E.g. I am a research proposals reviewer and I submit proposals to be evaluated under the same call

# THANKS QUESTIONS?

