

EE 350 – Module 4

Ethics in Technical Communication

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Where we are now in the course



Learning Objectives of This Module

- Why study ethics ?
- What are the different types of misconduct in research and academics ?
- Why be ethical ?
- What is “plagiarism” ? Why it is completely unacceptable ?
- What are the legal consequences of unethical academic conduct ?
- What are the ethics related to authorship ?
- What is copyright ? How to avoid copyright violation in academics?

Let's start with two fictitious examples...

Quiz 1

Your best friend recently bought herself/himself a new gadget which she/he is very fond of. You, on the contrary, don't like it at all. She/he asks you for your opinion on the same. What should you do?

1. Say you don't like it at all, because you must be truthful always
2. Say you like it too, because a small "white lie" in this case is acceptable and it would not hurt her/his feelings
3. Be diplomatic/vague in your response

Quiz 2

An old friend recently contacted you to request review of a research manuscript that she/he has written. You identify numerous grammatical and technical mistakes and most importantly, find that the fundamental concept has similarities with a paper you have studied before. What should you do?

1. Point out all the flaws to him including the fact that the fundamental concept has similarities with existing literature, though this would make him look like a dishonest academic and may affect his personal relationship with you.
2. Be diplomatic – say you don't have time. Let peer review take care of everything. This would also affect your personal relationship with him, though.
3. Just point out the grammatical errors and some of the technical errors – this will enable him to submit the paper on time. Let the peer review process take care of the rest.
4. Point out all the grammatical and technical errors to him. This will mean that he will still probably miss the submission deadline, but he will interpret this as an act of sincerity from you, which will help your personal friendship. Intentionally, omit the issue with the fundamental concept, which the peer review process will surely take care of.

Ethics is the branch of study which attempts to answer such “what should we do” questions

Quiz 1

A dilemma in
general ethics

Your best friend recently bought herself/himself a new gadget which she/he is very fond of. You, on the contrary, don't like it at all. She/he asks you for your opinion on the same. What should you do?

1. Say you don't like it at all, because you must be truthful always
2. Say you like it too, because a small "white lie" in this case is acceptable and it would not hurt her/his feelings
3. Be diplomatic/vague in your response

Quiz 2

A dilemma in
research ethics

An old friend recently contacted you to request review of a research manuscript that she/he has written. Upon reading the draft you identify numerous grammatical and technical mistakes. But, most importantly, you find that the fundamental concept has been copied from a classic paper. What should you do?

1. Point out all the flaws to him including the fact that the fundamental concept has been copied, though this would make him look like a dishonest academic and affect his personal relationship with you. But this is your duty as an academic.
2. Be diplomatic – say you don't have time. Let peer review take care of everything. This would also affect your personal relationship with him, though.
3. Just point out the grammatical errors and some of the technical errors – this will enable him to submit the paper on time. Let the peer review process take care of the rest.
4. Point out all the grammatical and technical flaws to him. This will mean that he will still probably miss the submission deadline, but he will interpret this as an act of sincerity from you which will help your personal friendship. Intentionally, omit the issue with the fundamental concept, which the peer review process will surely take care of.

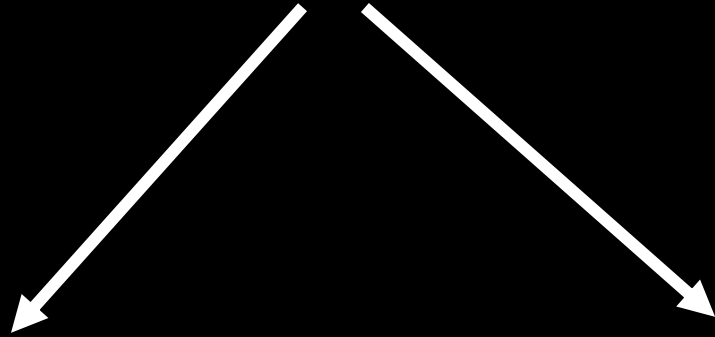
Why is ethics important?...



Image Source: Wikipedia Wikimedia Commons

“A Man Without Ethics Is A Wild Beast Loosed Upon The World” – Albert Camus, French Philosopher

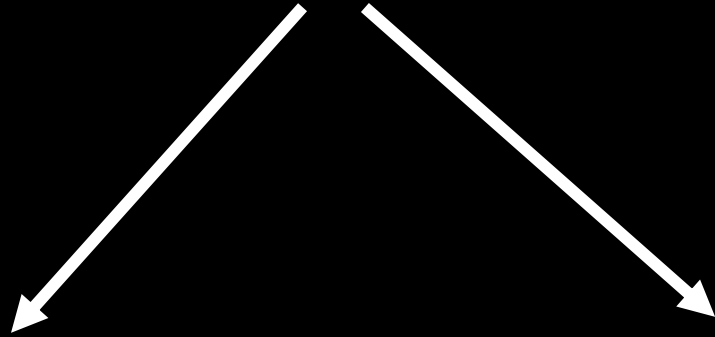
“Academic misconduct”



An ethical perspective

A legal perspective

“Academic misconduct”



An ethical perspective

A legal perspective

Are there “rules” to help deal with ethical dilemmas?...

Theory of ethics

Two broad theories

Absolutism/ Deontology

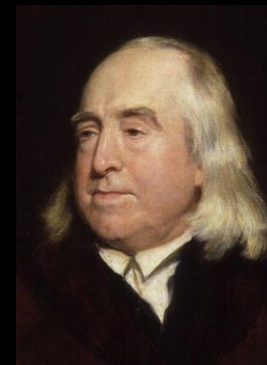
- consequences don't matter;
categorically wrong
- *"the categorical imperative", "...do unto others as you would have them do unto you.."*



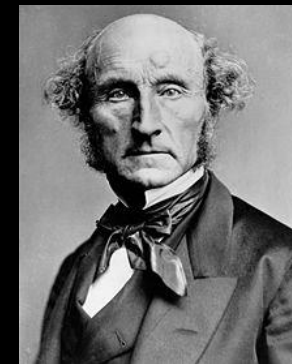
Immanuel Kant

Consequentialism/Utilitarianism

- calculate the consequences; do what maximizes overall "utility" (= happiness - suffering)
- *"... maximize the greatest good for the greatest number.."*



Jeremy Bentham



John Stuart Mill

Theory of ethics

Absolutism

It is *never* ok to

- i. lie (perjury, lack of truthfulness)
- ii. kill (murder)
- iii. steal/rob

Utilitarianism

If *may be conditionally* ok (if it maximizes “utility”) to

- i. lie (in the “white lie” example)
- ii. kill (capital punishment, euthanasia, abortion, Lord Krishna urging Arjuna for war!)
- iii. steal/rob (to help the needy e.g., Robin Hood)

Theory of ethics

Absolutism

It is *never* ok to

- iv. sleep in class (☺)
- v. cheat, practice “unethical” academic practices

Utilitarianism

If *may be conditionally* ok (if it maximizes “utility”) to

- iv. sleep in class (if it maximizes my happiness... but will it really, at the end of the semester ?)
- v. cheat, practice “unethical” academic practices (if it seems to be maximizing some form of “utility” ??...we will see why such utilitarian calculation is wrong..)

Why do some academicians adopt unethical practices?...

Disclaimer : This is by no means, any justification for any sort of unethical practice adopted by anyone

- They are *consequentialists* – unlike Kant, they don't feel the moral “guilt” of adopting unethical academic practices.
- Researchers, particularly students, even when “honest”, are often unaware of many of the finer technical details related to violation of research ethics and the consequent penal actions – *lack of knowledge about possible punishment or “disutility”*.
- All students are under pressure to finish their work in time (need to join job, stipend available for a limited time) – *motivated about grades, job, degree or personal “utility”*.
- For all academicians, the urge of more publications and more citations could mean a faster career progression (“publish or perish”) - *motivated about career growth or personal “utility”*.
- They don't fear consequences. Many cases of academic misconduct often involve repeat offenders – *they do not think the “disutility” matters much*.

Why it is never ethical to adopt such practices?...

(even from a utilitarian point of view)

- According to Mill/ Bentham, the goal is never to maximize one's personal utility or happiness, but overall happiness.
- *Individual acts of academic misconduct do not maximize overall utility* –
 - *society is ill-served if people who are incapable are elevated to important positions* e.g., would you want to be treated by a surgeon who faked one of his/her degrees ?
 - personal acts of academic dishonesty leads to mistrust/ill-will in larger society towards the institution/scientific community

Why it is never ethical to adopt such practices?... (even from a *utilitarian point of view*)



Excerpt from *The Times of India*, 15.12.21.

MUMBAI: A former chief medical officer of the [Vasai-Virar Municipal Corporation](#) was arrested for allegedly possessing a fake degree in medicine and surgery.

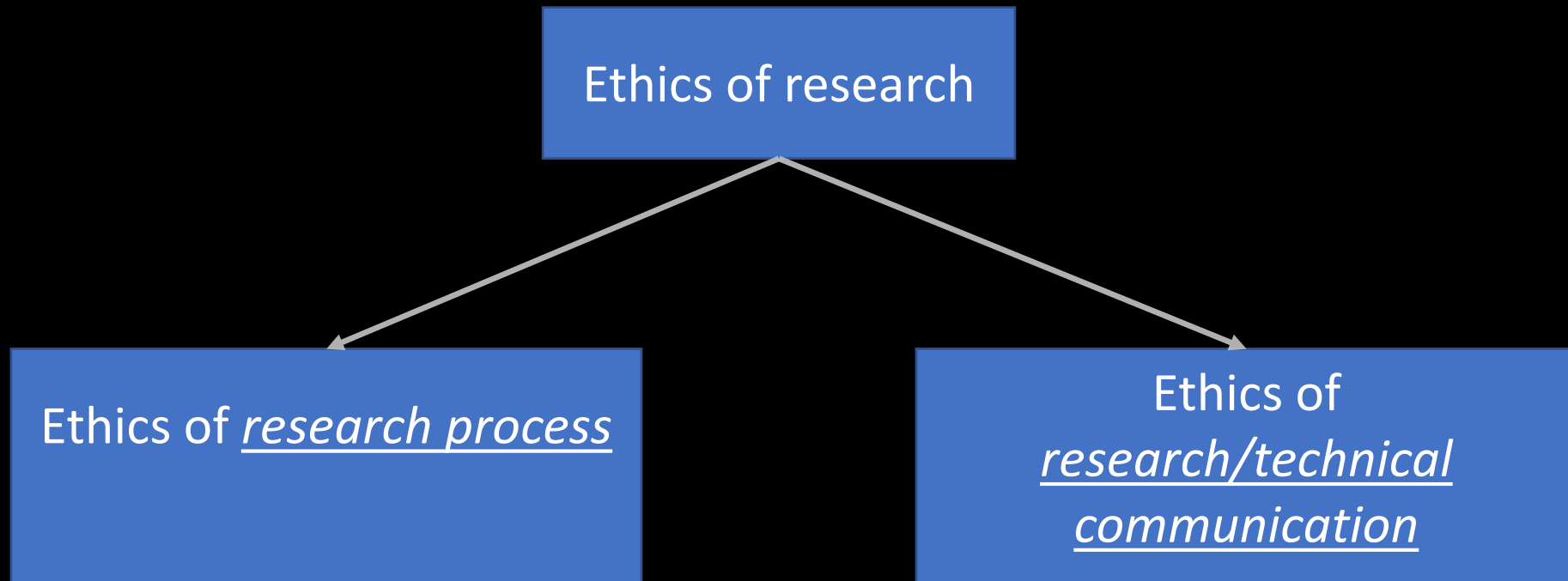
Dr. [Name], who runs two private hospitals in Nalasopara and Virar has been remanded to police custody till Friday by the Vasai court.

Virar police said that [Name], who worked in various government departments for around 20 years, had submitted fake [MBBS](#) certificates to seek the government job. He was the chief medical officer until 2013, when he was sacked following complaints of sexual harassment by his female colleagues.

Another utilitarian view on why to not cheat/plagiarize ?

- A vigilant and “ethical” supervisor, who suspects misconduct of he/his student/colleague will end up spending lot of time and energy in verifying authenticity of data/ideas presented to her/him
- This *reduces quantity* of utility - the research output

Ethics of research



In this course, we will be focusing on this part. But nonetheless, let us talk briefly about the ethics of research process.

Misconduct in the research process

- The worst malpractices
 - Fabrication (making up data, using unverified data of others)
 - Falsification (manipulating data, deleting “inconvenient data”)
 - Statistical mis-representation (“p-hacking”)

“P-value” and statistical mis-representation

- What is “p-value” ?
 - A statistical metric used for testing of a hypothesis
 - It is the *probability that observed data in an experiment arises by random chance*, given that the null hypothesis is true
 - Obtained from data using statistical analysis (e.g., in Excel)
 - *For a hypothesis to be “statistically significant” and thus acceptable, p-value should be low, typically less than 0.05*
- Scientists can use the p-value test wrongly in two ways
 - Stop experimental data collection as soon as $p\text{-value} < 0.05$ is obtained (small sample size, no diversity)
 - Intentionally manipulate design of experiments, such that $p\text{-value} < 0.05$ is obtained
- P-value manipulations can be detected through replication studies
 - Repeat experiments of others to verify their claims
 - Share details of your own experimental/ simulation conditions, theoretical framework

End of Lecture 1

Recap

- Ethical dilemmas
- Two common ethical theories
 - deontology (categorical reasoning)
 - utilitarianism (consequentialist approach)
- Both deontological and utilitarian reasons justify adopting ethical academic behavior
- Malpractices in research process
 - fabrication
 - falsification
 - manipulation of statistical metrics (p-value)

Going ahead ...

- Misconduct in research process
- Misconduct in research communication - plagiarism
- Rules to keep in mind so that you don't plagiarize
- Penal repercussions of plagiarism
- Others forms of unethical behavior in technical communication
- Ethics of authorship
- Copyright-related issues of technical content

Misconduct in the research process

- Some other indiscretions
 - Environmental abuse
 - Mistreating animals, human subjects
 - Bias from funding source

Sponsorship bias

- Manipulating research process/results to favorably project product of funding agency
- Mostly applies to the pharmaceutical/food industry

Sponsorship bias - example

- Industry-sponsored and privately funded studies in the US reached distinctly different conclusions about the *possibility of bisphenol A (BPA) causing cancer**
 - Chemical industry studies reported that BPA in plastic containers is safe when leached into food (0 of 8 industry studies found evidence of any effects)
 - Publicly-funded independent studies reached different conclusions, with over 90 percent of them finding health effects, even from low doses of BPA (94 of 98 government-funded studies found evidence of effects)
- Why the difference ?
 - Industry studies used rats (CD-SD rats), known to be insensitive to small doses of carcinogens
 - Publicly-funded studies used other varieties of rats (male CF1 mouse)

The devil is in the details !

*Source: Reutlinger. A, "What is epistemically wrong with research affected by sponsorship bias? The evidential account", Euro Jnl Phil Sci 10, 15 (2020).

Misconduct in research communication

- Related to violation of intellectual property rights (IPR)
 - Plagiarism (violation of IPR of an author)
 - Authorship
 - Copyright infringement (violation of IPR of publisher or content owner)

Plagiarism

What is plagiarism ?...

- *the act of using another person's words or ideas without giving credit to that person*
- *the use of someone else's prior ideas, processes, results, or words without explicitly acknowledging the original author and source*

Quiz 3

Can you think of an instance of plagiarism you noticed in content you recently came across ?

Quiz 3

Can you think of an instance of plagiarism you noticed in content you recently came across ?

What you just saw in the last slide !

Quiz 3

For verbatim copy, quotation marks must be put, and sources must be mentioned

Can you think of an instance of plagiarism you noticed in content you recently came across ?

- *“the act of using another person's words or ideas without giving credit to that person”-Merriam Webster (www.merriam-webster.com)*
- *“the use of someone else’s prior ideas, processes, results, or words without explicitly acknowledging the original author and source”-IEEE PSPB Manual Sec. 8.2.1.A*

Quiz 4

For which of the following content does plagiarism laws apply?

- (a) Written technical content - reports, papers, thesis, magazine articles, books
- (b) Online content - blogs, articles
- (c) Presentations
- (d) Non-technical (e.g., fiction) articles, books
- (e) Electronic media

- Only (a)
- (a) and (b)
- (a), (b) and (d)
- All of the above

Quiz 4

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- (d) Non-technical (e.g., fiction) articles, books
- (e) Electronic media

- Only (a)
- (a) and (b)
- (a), (b) and (d)
- All of the above

Example of quoting from a source



Excerpt from *NDTV.com* article

It was the Putin the aggressive nationalist, not Putin the Communist, who was preparing the ground for a massive invasion of his smaller neighbour.

As *The Washington Post* put it, Putin was trying to dismiss "Ukraine as a recent creation, an obscure entity that came about after what he described as a struggle between Vladimir Lenin and Josef Stalin over the contours of a national state. He harshly criticized Lenin for pushing for a confederation of supposedly independent states, which then were able to become independent nations after the Soviet Union collapsed in 1991."

Three rules to avoid plagiarism

1. *Never copy-paste anything*
(text, images, figures, tables)

2. For text -

i) always paraphrase AND cite the source

ii) for a verbatim copy, always put inverted commas around the text AND cite the source

3. For images, figures, tables -

i) Redraw images yourself

If not possible

ii) cite source in caption

iii) get permission from the publisher and authors, mention copyright in caption

Rules to avoid plagiarism

| | Always | Never |
|-----------------------|---|-------------------|
| Descriptive Text | <i>i) paraphrase, ii) cite the source</i> | <i>copy-paste</i> |
| Verbatim Text | <i>i) use inverted commas around the text, ii) cite the source</i> | <i>copy-paste</i> |
| Images/Figures/Tables | <i>i) Redraw or ii) get permission from publisher and authors and iii) cite the source in caption</i> | <i>copy-paste</i> |

Some tips on how to paraphrase

- i. Read the text and put it aside
- ii. Write down the key ideas (from memory)
- iii. Write your version; try to rearrange sequence of some of the sentences, phrases etc.
- iv. Compare with the original to identify exactly identical phrases. Try to change them or put quotation marks
- v. Cite the source material

Source: "The Art of Paraphrasing: Avoiding Plagiarism",
<https://www.youtube.com/watch?v=H1qo10dG5Gw>

An example of how to reproduce images

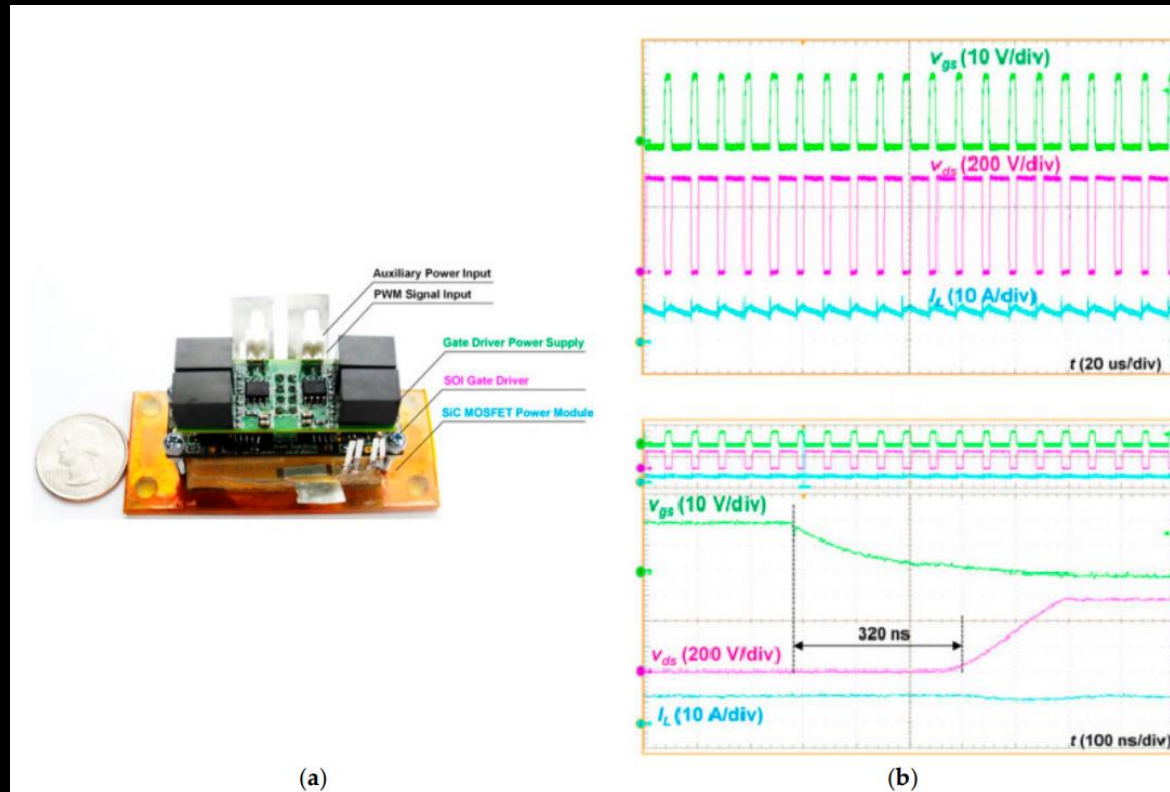
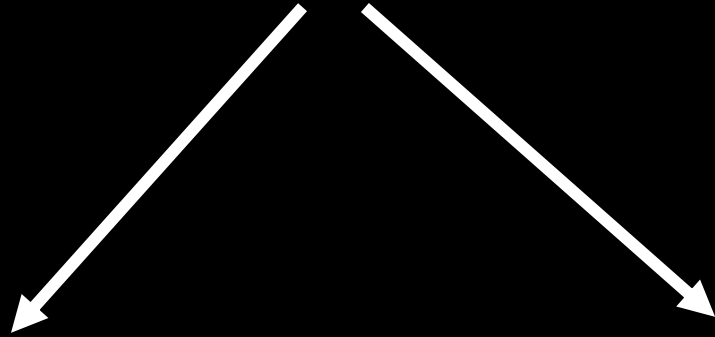


Figure 2. (a) A photograph showing the module developed by Wang et al. [27]; and (b) waveforms showing the operation of the power converter. SOI: silicon-on-insulator; and MOSFET: metal-oxide-semiconductor field-effect transistor. Reprint with permission [4062710688514]; Copyright 2014, IEEE.

“Academic misconduct”...



An ethical perspective

A legal perspective

What happens if you plagiarize ?

A lot of “bad things” follow

The extent of those “bad things” depends
on the extent of plagiarism

There can be different degrees of the **crime** –
Accordingly IEEE defines *five levels of plagiarism*

Level 1 plagiarism

- i. Word-for-word copy of a *full paper* without any attribution to the authors
- ii. Word-for-word copy of a *major portion* (more than 50%, as measured by a plagiarism measuring software) within a single paper, again without attribution
- iii. Word-for-word copy of content within more than one paper by the same set of offending authors with total amount of plagiarized amount exceeding 50%

Level 1 plagiarism - Repercussions

For violations involving only one paper.....

- i. Publication of a notice of violation of Publication Principles, in the IEEE electronic database
- ii. Publication of a notice of violation of Publication Principles in the appropriate IEEE publication where the author(s) and the specific paper have been found to be in violation of IEEE Principles against plagiarism
- iii. **Prohibition of publication in all IEEE-copyrighted publications by the offending individual(s) for three to five years** as determined by PSPB Chair
- iv. Rejection and return of all papers by the author(s) that are currently in review or in any IEEE publication queue (papers may be re-submitted after prohibition term has expired)
- v. Offending individual(s) prepare and submit an apology to the plagiarized author(s) and publication editor(s).
- vi. Publication of the offending author's apology.

Level 2 plagiarism

- i. Word-for-word copy of a *large portion* (greater than 20% and up to 50%) within a paper, without any attribution to the authors
- ii. Word-for-word copy of content within more than one paper by the same set of offending authors with total amount of plagiarized amount exceeding a *large portion* (greater than 20% and up to 50%)

Level 2 plagiarism - Repercussions

For violations involving only one paper.....

- i. Publication of a notice of violation of Publication Principles, in the IEEE electronic database
- ii. Publication of a notice of violation of Publication Principles in the appropriate IEEE publication where the author(s) and the specific paper have been found to be in violation of IEEE Principles against plagiarism
- iii. Prohibition of publication in all IEEE-copyrighted publications by the offending individual(s) for one to three years as determined by PSPB Chair
- iv. Rejection and return of all papers by the author(s) that are currently in review or in any IEEE publication queue (papers may be re-submitted after prohibition term has expired)
- v. Offending individual(s) prepare and submit an apology to the plagiarized author(s) and publication editor(s).
- vi. Publication of the offending author's apology.

Level 3 plagiarism

Word-for-word copy of *individual elements (paragraph(s), sentence(s), illustration(s), etc.) resulting in a significant portion (up to 20%)* within a paper, without any attribution to the authors.

Level 3 plagiarism - Repercussions

- i. Offending individual(s) **prepare and submit an apology to the plagiarized author(s)** and to the **editor of the publication** where the plagiarized work was submitted
- ii. **Publication of a notice of violation of Publication Principles**, as specified in Section 8.2.4.E, in the IEEE electronic database as part of the article's bibliographic record.

If the offending authors fail to apologize, the following penal actions will be taken

- iii. **Prohibition of publication in the IEEE publication** where the offense took for the next **one or two years** of the publication or, if appropriate, the **next one or two volumes of the conference proceedings**, as determined by the editor
- iv. **Rejection and return of all papers for that publication by the author(s) that are currently in review** or the queue for that publication (papers may be re-submitted after prohibition term has expired).
- v. Optionally, offending author's apology may be published

Level 4 plagiarism

Uncredited improper paraphrasing of images or paragraphs

What are some instances of “improper paraphrasing” ?

- i. Only few words or phrases changed
- ii. Only original sentence sequence changed
- iii. Credit notice or reference missing

Level 4 plagiarism - Repercussions

- i. Offending individual(s) **prepare and submit an apology to the plagiarized author(s) and publication editor**
- ii. **Publication of a notice of violation of Publication Principles**, as specified in Section 8.2.4.E, in the IEEE electronic database as part of the article's bibliographic record.

If the offending authors fail to apologize, the following penal actions will be taken

- iii. **Prohibition of publication in the IEEE publication** where the offense took for the next **one year** of the publication or, if appropriate, the **next one volume of the conference proceedings**
- iv. Optionally, offending author's apology may be published

Level 5 plagiarism

Credited word-for-word copying of large portions without clear delineation

What are some instances of level 5 plagiarism ?

- i. Sections of an original paper copied from another paper
- ii. Credit notice provided but quotation marks missing

Level 5 plagiarism - *Repercussions*

- i. Offending individual(s) **prepare and submit an apology to the plagiarized author(s) and publication editor**
- ii. Offending individual(s) **prepare correction or retraction and submit this document to the editor**

If the offending authors fail to apologize, the following penal actions will be taken

- iii. **Prohibition of publication in the IEEE publication** where the offense took for the next **one year** of the publication or, if appropriate, the **next one volume of the conference proceedings**
- iv. Optionally, offending author's apology may be published

Summary of different plagiarism levels

| | When ? | Major repercussion |
|---------|--|--|
| Level 1 | <i>Verbatim copy of a full or major portion (more than 50%)</i> | <i>Publication ban of 3-5 years, present papers returned</i> |
| Level 2 | <i>Verbatim copy of a large portion (more than 20% and less than 50 %)</i> | <i>Publication ban of 1-3 years, present papers returned</i> |
| Level 3 | <i>Verbatim copy of individual elements adding up to a significant portion (less than 20%)</i> | <i>Submit apology, ban of 1-2 years if apology not submitted</i> |
| Level 4 | <i>Uncredited improper paraphrasing</i> | <i>Submit apology, ban of 1 year if apology not submitted</i> |
| Level 5 | <i>Credited verbatim copy without delineation</i> | <i>Submit apology, ban of 1 year if apology not submitted</i> |

Plagiarism-related penalties specific to India

- The University Grants Commission (UGC) defines degrees of plagiarism and lists corresponding penal actions*
- “Penalties in case of plagiarism in submission of **thesis and dissertations**
 - i. *Level 0: Similarities upto 10%* - Minor Similarities, no penalty.
 - ii. *Level 1: Similarities above 10% to 40%* - Such student shall be asked to submit a revised script within a stipulated time period not exceeding 6 months.
 - iii. *Level 2: Similarities above 40% to 60%* - Such student shall be debarred from submitting a revised script for a period of one year.
 - iv. *Level 3: Similarities above 60%* - Such student registration for that programme shall be cancelled.”
- If plagiarism proved on a date later than the date of award of degree, then **degree shall be put in abeyance**

* Source : UGC notification, “Promotion Of Academic Integrity And Prevention Of Plagiarism In Higher Educational Institutions) Regulations, 2018” July 2018, The Gazette of India.

Some real examples of plagiarism

Example 1

Excerpt from *The Telegraph*, 21.02.12.

Available Online.
<https://www.telegraphindia.com/india/science-s-cut-and-paste-curse-pm-s-council-chief-apologises-after-rookie-copies-four-sentences/cid/449916>

Science's cut-and-paste curse - PM's council chief apologises after rookie copies four sentences

Read more below

G.S. MUDUR | Published 21.02.12, 12:00 AM

New Delhi, Feb 20: Two senior Indian scientists, including [REDACTED], who heads the scientific advisory council to the Prime Minister, have apologised for plagiarism but they are being seen as victims of a cut-and-paste culture prevalent among students and rookie researchers in India.

[REDACTED] a materials science professor at [REDACTED] have apologised to a scientific journal after plagiarism-detection software revealed that their research paper of July 2011 had four sentences reproduced from a 2010 paper by scientist from Indian and the US.

The plagiarised sentences in the introductory section of the paper in the journal *Advanced Materials*, discuss the importance of a material called graphene oxide and do not in any way affect the scientific content or the research value of the paper, according to scientists familiar with the case.

A PhD student at [REDACTED] who is among the paper's four co-authors had copied the four sentences without realising it was wrong to do so, [REDACTED] told **The Telegraph**. "It was an oversight, but it should not have happened," he said.

"We apologised to the original paper's authors and offered to withdraw our paper from the journal when we learnt that this had happened. But the journal's editors decided to retain the paper as the transgression was minor," [REDACTED] said.

Their apology in *Advanced Materials* in November 2011, regrets the reproduction of text from the earlier paper in the journal *Applied Physics Letters*, co-authored by physicist Surajit Ghosh from Vidyasagar University, Midnapore, and his colleagues at the University of Central Florida.

Sections of India's scientific community believe [REDACTED] have become victims of a culture of copying-without-attribution prevalent among school and college students that they carry with them when they enter research laboratories. "Students in high schools and colleges are encouraged to download from the Internet, without proper emphasis on mentioning the sources," said

[REDACTED] a materials engineering professor at [REDACTED]

Quiz 5

In the example we just saw, which of the following plagiarism levels apply ?

- Level 2
- Level 3
- Level 4

Quiz 5

In the example we just saw, which of the following plagiarism levels apply ?

- Level 2
- Level 3
- Level 4

Quiz 6

In the example we just saw, how do you think the incident of plagiarism occurred?

Example 2

"Prof. xxx was the vice-chancellor of abc University, India in 2002 when various physicists in India started a website alleging that some of his papers claimed authorship of work, reported earlier by other researchers.[9] The principal allegation was that a paper published by xxx entitled "Axion-dilaton black holes with $SL(2,Z)$ symmetry through APT-FGP model" in Europhysics Letters, Vol. 57, No. 5, was entirely copied from a six-year-old paper by Renata Kallosh of Stanford in Physical Review D, Vol 54, No. 8.[10] However, the campaign very soon included three other papers by Prof. xxx and colleagues as plagiarised papers. One of these papers "BPS Spectra of Dyons in Four-Dimensional $N = 2$ Supersymmetric Theories" was later recalled by the journal Progress of Theoretical Physics.[11]

On publication of the site, Prof. xxx threatened to take legal action against the website, maintaining that the paper was written by Mr. yyy, one of his students, without prior approval from him. [12] However, the site was endorsed by over 40 Indian physicists. In addition, seven physicists including Nobel Laureate, S. Chu, R. Laughlin and D. Osheroff wrote to the president of India, APJ Abdul Kalam requesting an investigation in this matter.[13] The situation became murkier when Prof zzz, head of the Physics department at abc University claimed that she was suspended by the university as she brought this issue to the public.[14]

In midst of all this blame game, the president of India asked the Governor of Uttaranchal who was also the chancellor of the abc University to institute an enquiry to investigate the case.[15] The committee led by a retired judge of Allahabad high court Justice S.R. Singh consisted of Prof K.B. Powar, former chief of the Association of Indian Universities, New Delhi, Prof Indira Nath, former secretary of the Society of Scientific Values and AIIMS faculty member and physicist Prof R. Rajaraman of JNU. The committee presented its report in February 2003 upholding the plagiarism charges. [16] Prof. xxx maintained that he has personally done no harm and it was his student's fault. However, he resigned from Vice-chancellorship immediately after the report.[17]"

Quiz 7

A,B,C, and D had submitted a paper to a journal which got accepted. Six months after the paper was published, all the authors get an e-mail from the journal's editor that written content of some parts of the paper appear to have been plagiarized from a previously published article and level 1 plagiarism charges are being initiated. A and B are students, C is a post-doctoral associate and D is a Professor. A did most of the theoretical work. B and C did most of the experimental work and writing of the manuscript. D supervised the work and guided the overall writing of the manuscript. *Whom will be the plagiarism charges be brought against?*

- B and C
- B, C and D
- A, B, C, and D

Quiz 7

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- B and C
- B, C and D
- A, B, C, and D

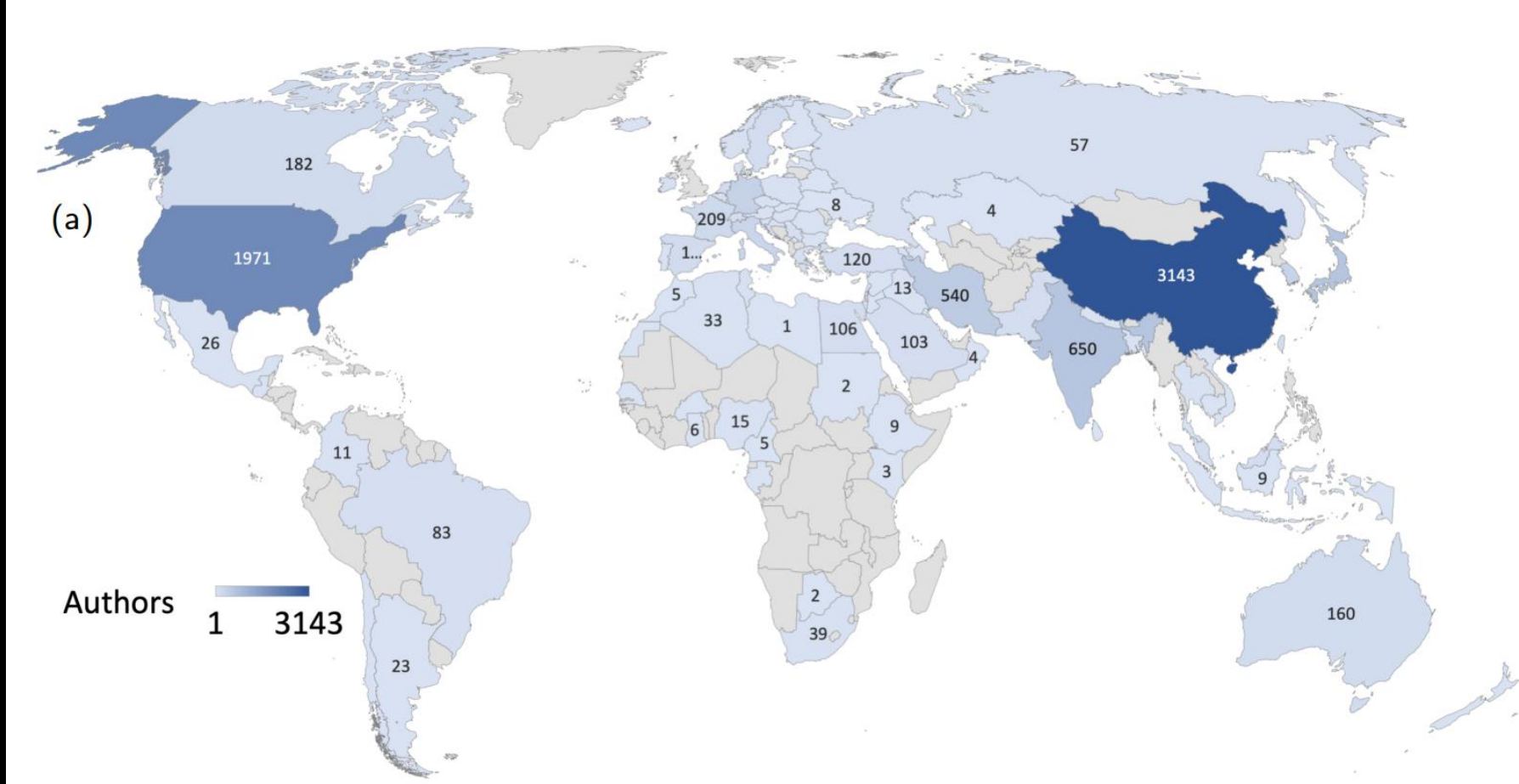
Some other examples of plagiarism – fiction writing

- Novelist Kavya Viswanathan alleged to have plagiarized large parts of her book from multiple sources.

| Original source | Viswanathan's book |
|---|---|
| "... but <i>in a truly</i> sadomasochistic dieting <i>gesture</i> , they chose <i>to buy</i> their <i>Diet Cokes</i> at Cinnabon." | " <i>In a truly masochistic gesture</i> , they had decided <i>to buy Diet Cokes</i> from Mrs. Fields ..." |
| "Sabrina was the <i>brainy</i> Angel. <i>Yet another example of how every girl had to be one or the other: Pretty or smart</i> . Guess which one I got. You'll see where it's gotten me." | "Money Penny was the <i>brainy</i> female character. <i>Yet another example of how every girl had to be one or the other: smart or pretty</i> . I had long resigned myself to category one, and as long as it got me to Harvard, I was happy. Except, it hadn't gotten me to Harvard. |
| " <i>If from</i> speed <i>you get your thrill / take precaution—make your will</i> ." | " <i>If from</i> drink <i>you get your thrill, take precaution—write your will</i> ." |

Plagiarism around the world

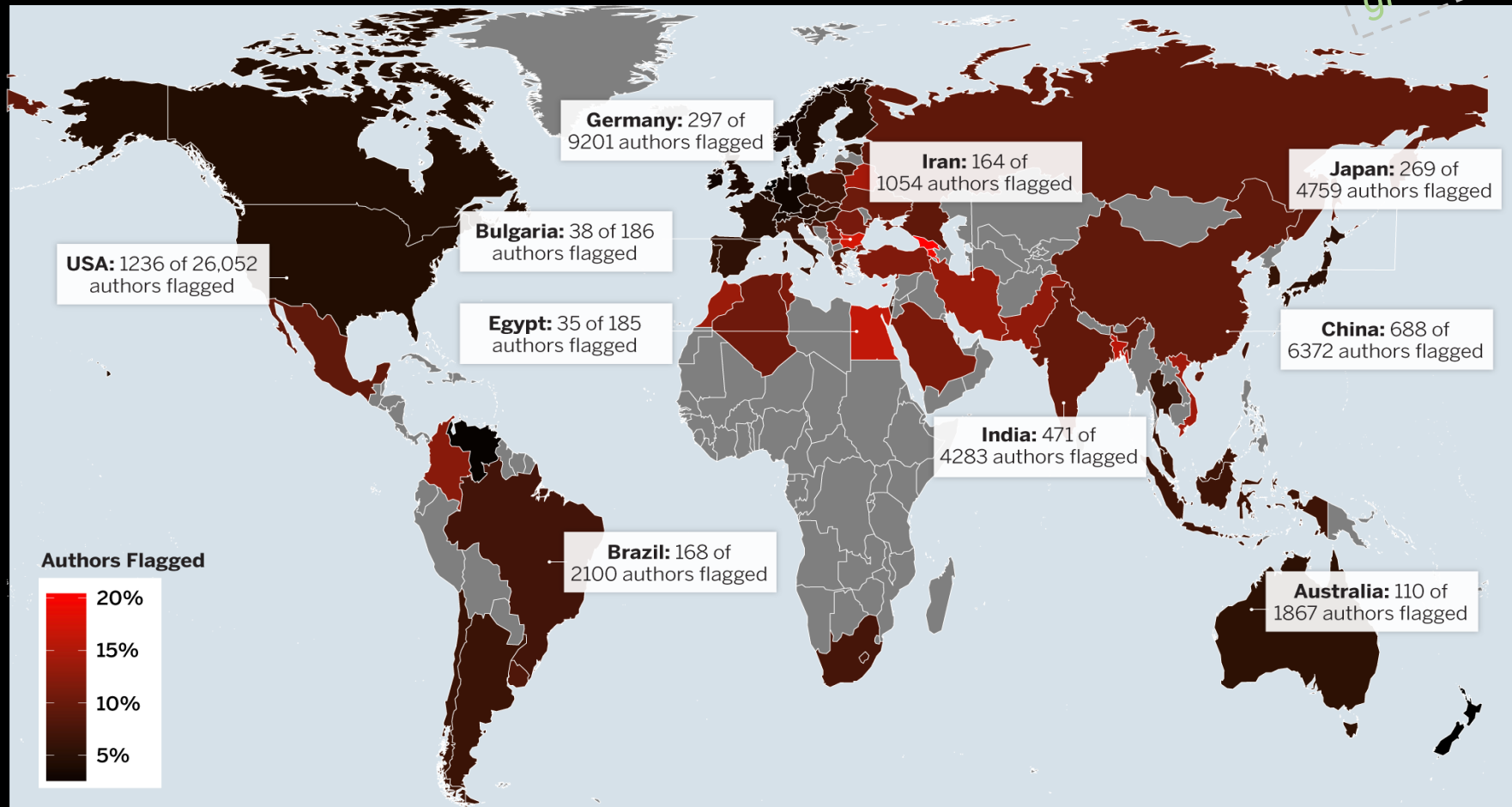
Geolocation of authors with paper retractions in a given time period



Plagiarism around the world

Geolocation of authors with flagged papers in preprint archives

Clearly India is not doing great in this aspect.



End of Lecture 2

Recap

- Misconduct in research process – environmental abuse, mistreating animals & humans, sponsorship bias
- Plagiarism
- Three rules to prevent plagiarism
 - never copy-paste
 - for text – paraphrase + cite, use quotation marks + cite for verbatim replication
 - for images – redraw, if possible, else cite + seek permission from author + publisher
- Different degrees of plagiarism (five levels defined by IEEE) and corresponding severe punishments

Today's agenda

- Other types of unethical academic conduct
- Ethics of authorship
- Copyright, copyright licenses
- Using images and other copyright protected material of others
- Copyright transfer and sharing of technical articles
- Summary - key things to remember

Some other forms of unethical conduct

Some other forms of unethical conduct

1. Including irrelevant citations – *Just like it's unacceptable to omit attribution to relevant literature, citing irrelevant literature is also a form of unethical conduct*

Quiz 8

Why do you think some authors include references which are not relevant to technical content?

- Lazy writing of the manuscript/ poor scholarship
- Want to cite their previous papers to improve their citation metrics
- To influence potential reviewer and/or editor of the journal of the manuscript to accept the paper by citing their papers
- All the above

Quiz 8

Why do you think some authors include references which are not relevant to technical content?

- Lazy writing of the manuscript/ poor scholarship
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- To influence potential reviewer and/or editor of the journal of the manuscript to accept the paper by citing their papers
- All the above

Some other forms of unethical conduct

2. **Self-plagiarism** – Replicating complete sections, paragraphs of one's previous papers and passing it off as a new, "original" work

- Many publications allow and in fact encourage authors to submit preliminary work in a conference paper and later submit a "more complete" journal version of the *same* work
- In such a case however, each journal has clear guidelines on maximum similarity percentages between the two manuscripts (typically 30 %)
- In addition, the authors need to clearly mention in footnote that the second work is the improved version of the same first work and not a completely new work

Some other forms of unethical conduct

3. **Duplicate submissions** – Submitting the same manuscript to two different journals or conferences around the same time

Ethics of authorship

Who qualifies as an author ? What does the rule book say ?

- IEEE PSPB Manual Section 8.2.1.A.1 clearly spells out the eligibility criteria for authorship on a paper....

“The IEEE affirms that **authorship credit must be reserved for individuals who have met each of the following conditions:**

1. Made a **significant intellectual contribution** to the theoretical development, system or experimental design, prototype development, and/or the analysis and interpretation of data associated with the work contained in the article.
2. **Contributed to drafting the article** or reviewing and/or revising it for intellectual content.
3. **Approved the final version** of the article as accepted for publication, including references.”

- Contributors partially fulfilling some of the above criteria may be credited in the Acknowledgement section of the paper, but cannot be granted authorship

Other forms of unethical conduct related to authorship

- Ghost authors

- Excluding authors who had legitimate contributions (as defined in the last slide)
- Why would people do that ?

- Gift authors

- Including authors who had no legitimate contributions
- Why would people do that ?

- Outsourcing of authorship

- Outsource entire thesis writing to some third-party
- Acceptable for non-native English speakers to seek professional help only for English grammar and language

The dark side of the publication world – [predatory journals](#) !

- A “predatory journal” is a publication entity which prioritizes its financial incentives without any regard for scientific rigour and integrity.

How they operate ?

- They get “official” approval as a publisher by getting an ISSN and ISBN number from UGC
- They are generally open access journals, meaning the authors are required to pay on acceptance of the paper to cover article processing charges (thus there is an incentive for the journal to accept the manuscript)
- They operate by severely lowering the acceptance threshold of the review process – issues like blatant plagiarism go unnoticed
- If a case of plagiarism is pointed out, they just put a retraction notice

The dark side of the publication world – predatory journals !

BEALL'S LIST

OF POTENTIAL PREDATORY JOURNALS AND PUBLISHERS

[PUBLISHERS](#) • [STANDALONE JOURNALS](#) • [VANITY PRESS](#) • [CONTACT](#) • [OTHER](#)

Potential predatory scholarly open-access publishers

Instructions: first, find the journal's publisher – it is usually written at the bottom of the journal's webpage or in the "About" section. Then simply enter the publisher's name or its URL in the search box above. If the journal does not have a publisher use the [Standalone Journals](#) list.

All journals published by a predatory publisher are potentially predatory unless stated otherwise.

Original list

This is an archived version of the Beall's list – a list of potential predatory publishers created by a librarian [Jeffrey Beall](#). We will only update links and add notes to this list.

- [1088 Email Press](#)
- [2425 Publishers](#)
- [The 5th Publisher](#)
- [ABC Journals](#)
- [A M Publishers](#)
- [Abhinav](#)
- [Academe Research Journals](#)

[GO TO UPDATE](#)

Useful pages

- [List of journals falsely claiming to be indexed by DOAJ](#)
- [DOAJ: Journals added and removed](#)
- [Nonrecommended medical periodicals](#)
- [Retraction Watch](#)
- [Flaky Academic Journals Blog](#)
- [List of scholarly publishing stings](#)

Conferences

- [Questionable conferences \[archive\]](#)
- [How to avoid predatory conferences](#)

- Similarly, there are suspect conferences !
- A list prepared by Jeffrey Beall, a librarian at University of Colorado, Denver lists these suspects
- A list also published by the University Grants Commission Consortium for Academic and Research Ethics (UGC-CARE)
- If you see a journal or conference listed on these lists, you double-check before submitting your paper there

The dark side of the publication world

- The “Retraction Watch Database” (www.retracniondatabase.org) contains a detailed list of retracted papers, reason for retraction etc.

Version: 1.0.6.0
ISSN 2692-465X

The Retraction Watch Database
Please see this [user guide](#) before you get started

| | | | | | |
|---------------------------|--|------------------|---|-----------------------------|---|
| Author(s): | <input type="text" value="Type to search"/> | Country(s): | <input type="text" value="India"/> | Original Paper | |
| Title: | <input type="text" value="Type to search"/> | From Date: | <input type="text" value="01/01/2021"/> | To: | <input type="text" value="01/01/2022"/> |
| Reason(s) for Retraction: | <input type="text" value="+Plagiarism of Data"/> | | | PubMedID: | <input type="text" value="mm/dd/yyyy"/> |
| Subject(s): | <input type="text"/> | Article Type(s): | <input type="text"/> | DOI: | <input type="text"/> |
| Journal: | <input type="text"/> | | | Retraction or Other Notices | |
| Publisher: | <input type="text"/> | | | From Date: | <input type="text"/> |
| Affiliation(s): | <input type="text"/> | | | PubMedID: | <input type="text" value="mm/dd/yyyy"/> |
| Notes: | <input type="text"/> | | | DOI: | <input type="text"/> |
| URL: | <input type="text"/> | | | Nature of Notice: | <input type="text"/> |
| | | | | Paywalled: | <input type="text"/> |

[Clear Search](#)

Copyright, Sharing of Technical Content

Copyright – the basics

Disclaimer: The issue of copyright violation is deeply technical. I am not a legal expert and the recommendations in the upcoming slides should not be taken as legal advice!

What is copyright ?

- A type of intellectual property right (IPR), which protects the interests of the copyright holder and the authors of the work by granting them exclusive privileges like sharing, copying, selling etc. (*“all rights reserved”*)

What comes under copyright protection?*

- Written works like books, articles
- Musical compositions, movies, videos, plays
- Visual works like paintings, posters, advertisements
- Software, video games

Copyright – the basics

How does a creator ensure her/his work is copyright protected ?

- Copyright protection sets in automatically, as soon as the author creates the new work!
- Creator can ensure extra protection through copyright registration

How long is the protection valid?

- Typically, the lifetime of the creator + 70 years... after this the work is in “public domain”
 - *you can safely use Mona Lisa as your facebook DP!...but not “Persistence of Memory” by Salvador Dali (famous Spanish painter, died 1989)*

What are some other forms of IPR?*

- Trademarks – covers brand logos, slogans etc.
- Patents – covers inventions (which have been filed for intellectual protection by inventors)

Quiz 9

You bought the hard copy of a recently-published book recently. Which one of these actions would amount to a violation of copyright?

- (a) Lending the book to a friend for a few weeks
- (b) Making photocopies of a chapter of the book
- (c) Re-sell the book

- (a) and (b)
- (b) only
- (b) and (c)
- All of the above

Quiz 9

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- (a) and (b)
- (b) only
- (b) and (c)
- All of the above

Can you directly use images from Google search in your work ?

Google search results for "neural networks". The interface shows various image thumbnails and snippets. A red dashed circle highlights a copyright notice on the IBM snippet: "Images may be subject to copyright. Learn More".

Search results include:

- Neural Network Definition - investopedia.com
- What are Neural Networks? | IBM ibm.com
- Neural network - Wikipedia en.wikipedia.org
- Neural Networks From Scratch ... victorzhou.com
- What is a Neural Network? | TIBCO Software tibco.com
- Deep Neural Network
- What are Neural Networks? | IBM
- Related images

The copyright notice is circled in red, indicating a warning about using images from Google search without proper attribution or permission.

Can you directly use images from Google search in your work ?

- **Short answer – No!** Not without the permission of the copyright holder
- Google is just a search engine... **the image results may not be available for free use**
- *What should you do ideally? Use Google search to visit the original website and contact the owner to seek permission for using it*
- This seems cumbersome...*Does this mean you can never use Google search images in your presentations or reports ?*

- One exception to the need of seeking permission. Relates to the “fair-use” doctrine*.

“...Fair Use of a copyrighted workfor purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright.”



- However, whether “fair-use” applies in a given case could be up for legal argument (depends on factors like **non-profit usage, nature and portion of work used, effect on business of copyright owner**) and thus could be challenged by the copyright owner

What else can you do for using internet resources ?

- For images, consider using free “stock” images from sites like*
 - *pixabay.com, canva.com, pexels.com*
- Use content from resources which are free and open to use due to “copyright licenses” issued by the owner

What is a copyright license?

- Enables copyright holder to grant special privileges to others to use their work
- Essentially from “*all rights reserved*” -> “*some rights reserved*”
 - (Why would copyright owners do that ?)
- One of the most popular copyright license is the **creative commons** license




Types of Creative Commons Licenses

- Seven types of Creative Commons (CC) licenses






- Based on a combination of the following conditions
 - BY: Attribution – User must cite source
 - SA: Share Alike – Changed content must follow same license terms as original
 - NC: Non-commercial use only
 - ND: No Derivs – Changed content cannot be shared

Types of Creative Commons Licenses

- Type 1 - CC BY (Attribution) 
 - Privileges: “*Distribute, remix, adapt, and build upon*” creator’s work, *even commercially*
 - Conditions: User must credit the creator
 - Most accommodating of all licenses
- Type 2 - CC BY-SA (Attribution-Share Alike) 
 - Privileges: “*Distribute, remix, adapt, and build upon*” creator’s work, *even commercially*
 - Conditions: User must credit the creator and license the new creation under similar terms
 - This is the license used by Wikipedia; any content taken from Wikipedia must follow these terms
- Type 3 - CC BY-ND (Attribution-No Derivs) 
 - Privileges: “*Reuse the work for any purpose, including commercially*” (includes sharing of original work)
 - Conditions: User must credit the creator and any adapted (changed) form can't be shared

Types of Creative Commons Licenses

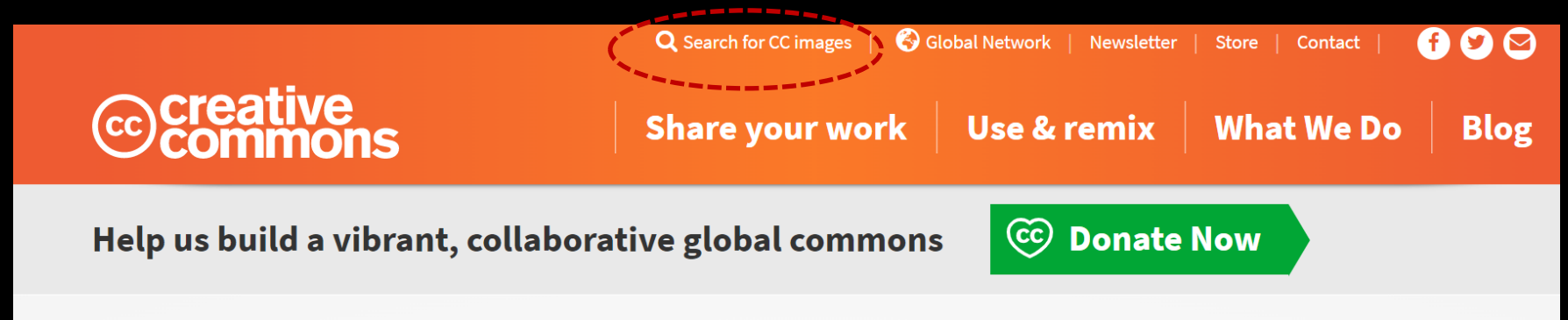
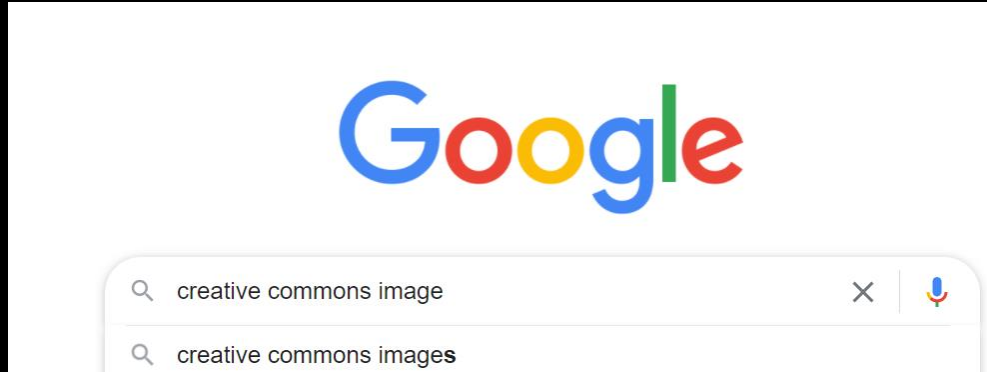
- Type 4 - CC BY-NC (Attribution-Non Commercial) 
 - Privileges: User can “*distribute, remix, adapt, and build upon*” creator’s work, but only *non-commercially*
 - Conditions: User must credit the creator but need not license the new creation under similar terms
- Type 5 - CC BY-NC-SA (Attribution-Non Commercial-Share Alike) 
 - Privileges: “*Distribute, remix, adapt, and build upon*” creator’s work, but only *non-commercially*
 - Conditions: User must credit the creator and license the new creation under similar terms
- Type 6 - CC BY-NC-ND (Attribution-Non Commercial-No Derivs) 
 - Privileges: Only “*download and share*” creator’s work *non-commercially*
 - Conditions: User must credit the creator and no adaptation (change) is allowed

Types of Creative Commons Licenses

- Type 7 – CC0 (No copyright/“No rights reserved”)
 - Privileges: User can “*distribute, remix, adapt, and build upon*” creator’s work, *even commercially without permission or attribution*
 - Conditions: No restrictions, content is in “public domain”

If you are using creative commons content, make sure it has the right license

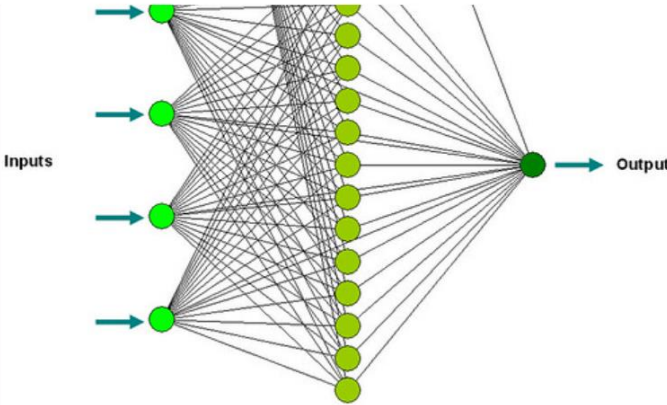
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neural networks



Inputs

Output

Neural Network
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rev. 020711

Quiz 10

A and B are students working under the supervision of C. C secured funding for the work from funding agency D. The paper was recently accepted in an *IEEE Transactions*. When submitting the final files for the paper, the authors also signed and submitted the mandatory electronic copyright transfer form. Who is the owner of the paper?

- A and B, because the work was done by them
- C, because he secured funding for the work
- D, because it is the funding agency
- IEEE, because the copyright transfer form was signed by the authors

Quiz 10

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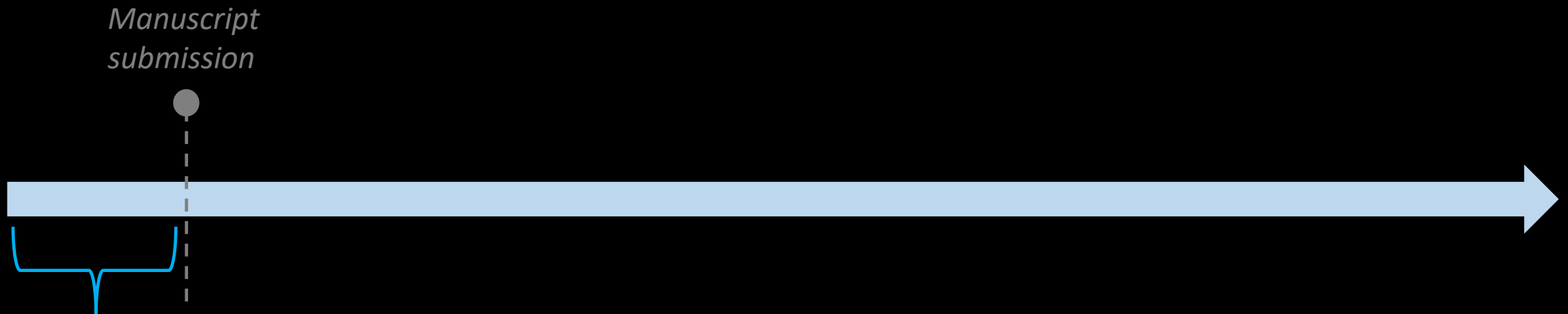
- A and B, because the work was done by them
- C, because he secured funding for the work
- D, because it is the funding agency
- IEEE, because the copyright transfer form was signed by the authors

Quiz 11

A and B wrote a paper, which was accepted in an IEEE Transactions ten months back. Two weeks ago, the fully-edited final version of the paper appeared on IEEE's online database (IEEE Explore). A downloaded this paper from IEEE explore using his Institution's IEEE account and posted it under his CV page on his website. Has A any cause for concern for a potential copyright violation?

- Yes, because he used his institution's IEEE account to download the paper
- No, because he has exclusive right to his paper
- Yes, since he had signed the copyright the form at the time of submitting the final paper and that precludes him from the option of sharing and posting the final version of his paper
- No, because he used his institution's account (an official IEEE account) to download the paper

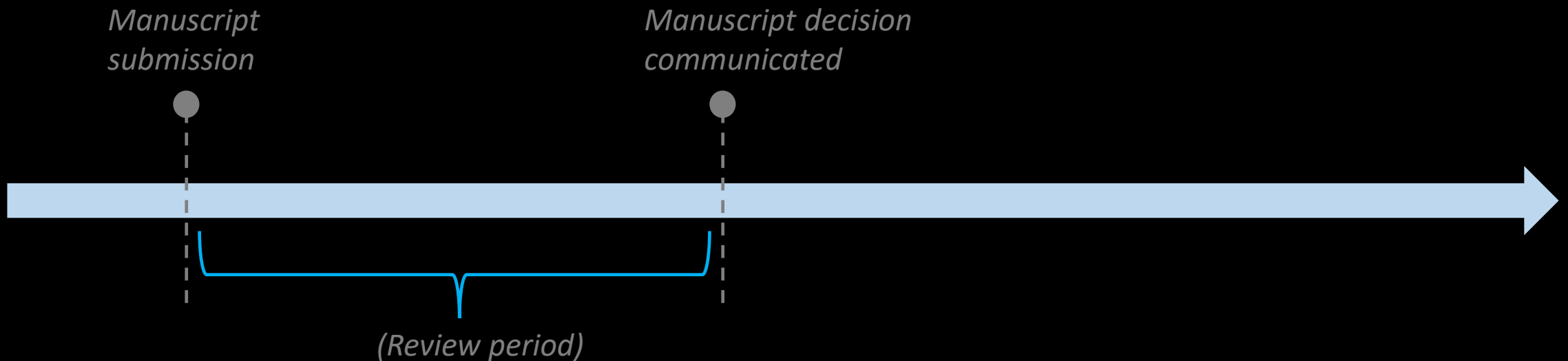
What can be shared at various stages of a research publication without any IPR violation ?



Authors may share or post their *preprints* on

- The authors' personal website or their employers' website
- "TechRxiv" or "ArXiv"

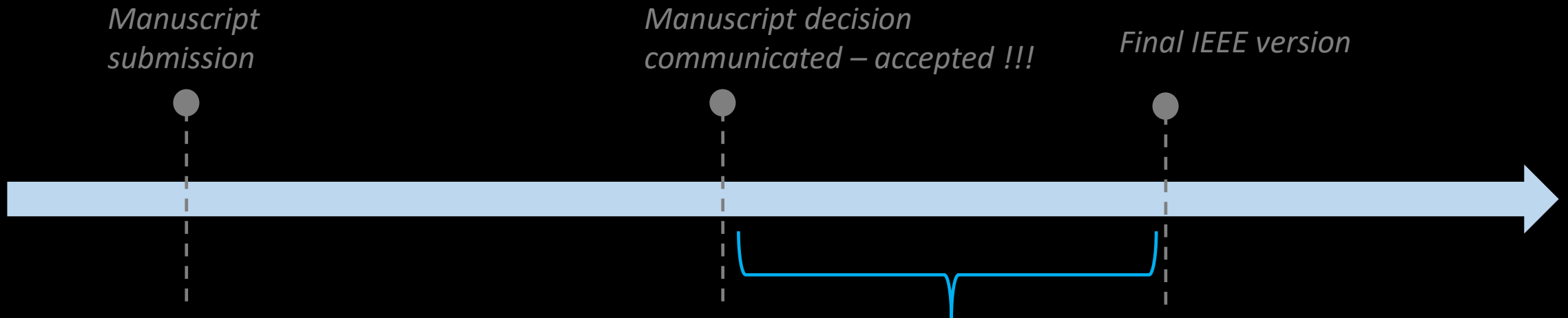
What can be shared at various stages of a research publication without any IPR violation ?



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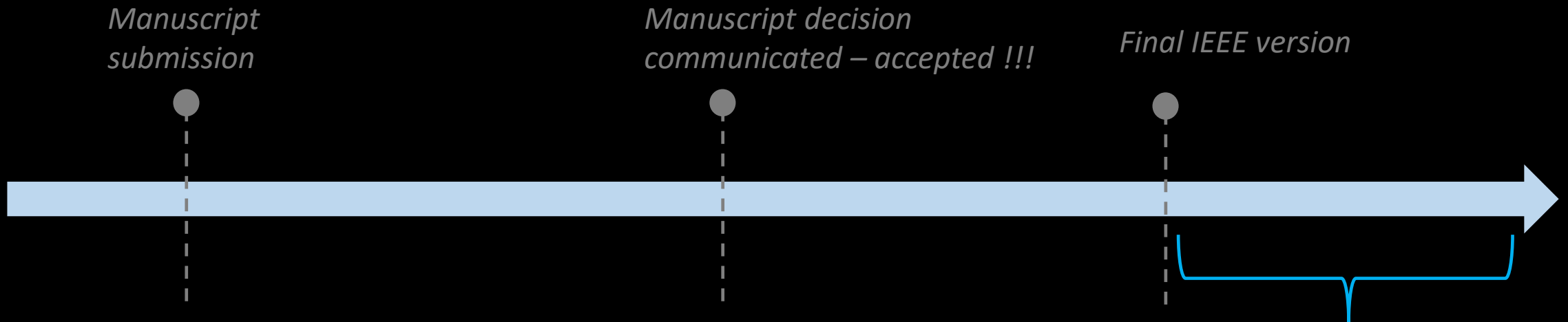
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- On institutional repositories
- In authors' own classroom use
- On Scholarly Collaboration Networks (SCNs)

What can be shared at various stages of a research publication without any IPR violation ?



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 - On the authors' personal website or their employers' website
 - "TechRxiv" or "ArXiv"
 - In a funder's repository

What can be shared at various stages of a research publication without any IPR violation ?



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 - May share copies for *individual personal use*
 - May use in their own classroom with permission from IEEE
 - May use in their own thesis or dissertation
- Third-party reuse would require IEEE permission

Quiz 11

A and B wrote a paper, which was accepted in an IEEE Transactions ten months back. Two weeks ago, the fully-edited final version of the paper appeared on IEEE's online database (IEEE Explore). A downloaded this paper from IEEE explore using his Institution's IEEE account and posted it under his CV page on his website. Has A any cause for concern for a potential copyright violation?

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- No, because he used his institution's account (an official IEEE account) to download the paper

Summary – key things to remember

- Both deontological and utilitarian reasons to always be ethical in one's academic conduct
- Unethical academic practices are bad for you (severe punishment if caught) and bad for society at large
- Plagiarism applies to all publicly distributed content
- 3 simple tips to prevent plagiarism in technical communication
 - Never copy-paste anything
 - Always paraphrase AND cite; use quotation marks for verbatim replication AND cite
 - Redraw images; if not possible, seek permission from publisher and authors and cite in caption
- Must follow strict ethical norms for authorship ; avoid ghost authors, gift authors, outsourcing of writing
- Stay away from predatory journals !
- If you use some images from the web, make sure copyright license permits you to do so; always cite source
- If you sign a copyright transfer form, there are restrictions on how you can share your own paper!

Acknowledgements

- Prof. D Manjunath for various valuable input and suggestions
- Section 4 TAs Kavitha and Rahul for help in setting up the quizzes

References/ Suggested supplementary content

■ YouTube Videos

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Available Online. https://www.youtube.com/watch?v=IV_G7weU6Vs&t=2992s
- “*Research ethics and plagiarism*”, David Alexander, University College of London, IRDR.
Available Online. https://www.youtube.com/watch?v=Sz_vclBzfnE
- “*Publishing Ethics & Plagiarism*”, TLR CONSULT & ELSEVIER.
Available Online. https://www.youtube.com/watch?v=IV_G7weU6Vs&t=2992s
- “*Ethical Theories and Principles*”, Lincoln Center for Applied Ethics.
Available Online. <https://www.youtube.com/watch?v=L-rR99EaEFg&t=88s>
- “*Justice: What’s The Right Thing To Do?*”, Michael Sandel, Harvard University
Available Online. <https://www.youtube.com/watch?v=kBdfcR-8hEY>
- “*Scientific Studies: Last Week Tonight with John Oliver (HBO)*”
Available Online. <https://www.youtube.com/watch?v=0Rnq1NpHdmw>
- “*P-value in statistics: Understanding the p-value and what it tells us - Statistics Help*”
Available Online. <https://www.youtube.com/watch?v=eyknGvncKLw>
- “*The Art of Paraphrasing: Avoiding Plagiarism*”, University of Maryland, Baltimore Writing Center
Available Online. <https://www.youtube.com/watch?v=H1qo10dG5Gw>
- “*What is Copyright and the Creative Commons Licence?*”
Available Online. <https://www.youtube.com/watch?v=cpZYDa03VMg>

■ IEEE IPR Tutorial Series Presentations

- “*Plagiarism*”, IEEE IPR Tutorial series presentations.
Available Online. <https://www.ieee.org/publications/rights/rights-tutorials.html>
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Available Online. <https://www.ieee.org/publications/rights/rights-tutorials.html>
- “*Permissions*”, IEEE IPR Tutorial series presentations.

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- “*Academic Integrity and Cheating: Why is it wrong to cheat?*”, Philip A. Pecorino., The CUNY-Wide Conference on Academic Integrity, Sep. 29, 2017.
Available Online. <https://www.qcc.cuny.edu/SocialSciences/ppecorino/Academic-Integrity-cheating.html>