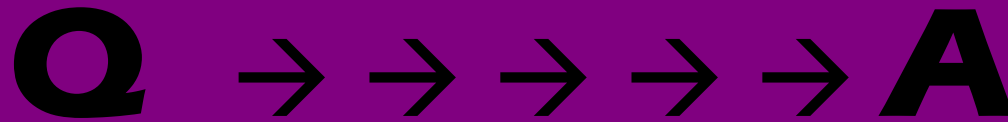


Research and how you should do it

THE BOX – inside and outside



FINDING YOUR: 'Q', →Path→ and 'A'

- 1- RA / staff
- 2- Undergrad students
- 3- Grad students (MS)
- 4- FYP
- 5- PhD students
- 6- Post docs
- 7- Interns / fellows
- 8- Junior scientists
- 9- Independent scientists
- 10- Senior advisors

Creativity and how to be creative

Creativity is the bringing into being of something which didn't exist before. It's *a product, a process or a thought*

- **Invent** something which has never existed before
- Or which exists elsewhere but **you are not aware of**
- Invent **a new process for doing something**
- **Reapply an existing process** or product into a new or different market
- **Develop a new way of looking at something**
(bringing a new idea into existence)
- **Change the way someone else looks at something**

This comes naturally with your research work

“The Box”

The phrase "thinking outside the box" is often used to describe the creative process of coming up with a unique idea or process outside the norm.

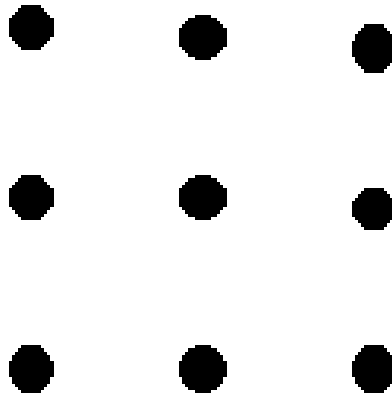
But we must know:

what is the box actually made of?

“Thinking out of the box”

Thinking Outside the Box

*join all the dots by using four straight lines,
without lifting your pen from the paper or going
through each dot more than once*

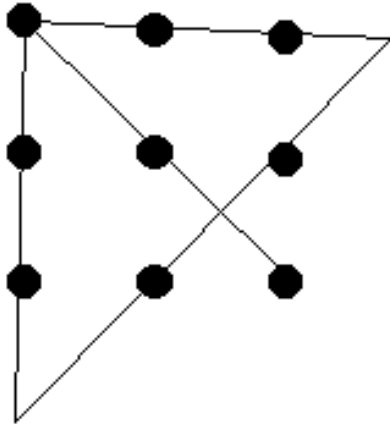


....according to Business Schools and their products: MBA's and management magazines

“Thinking out of the box”

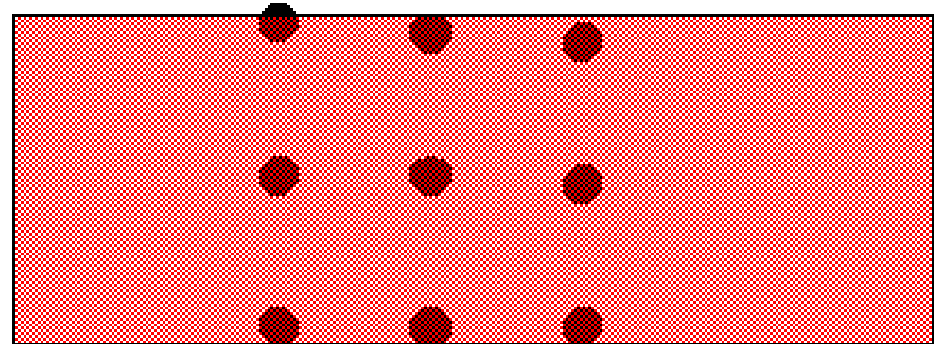
Thinking Outside the Box

*solution one - by taking the lines
outside the box it's easy!*



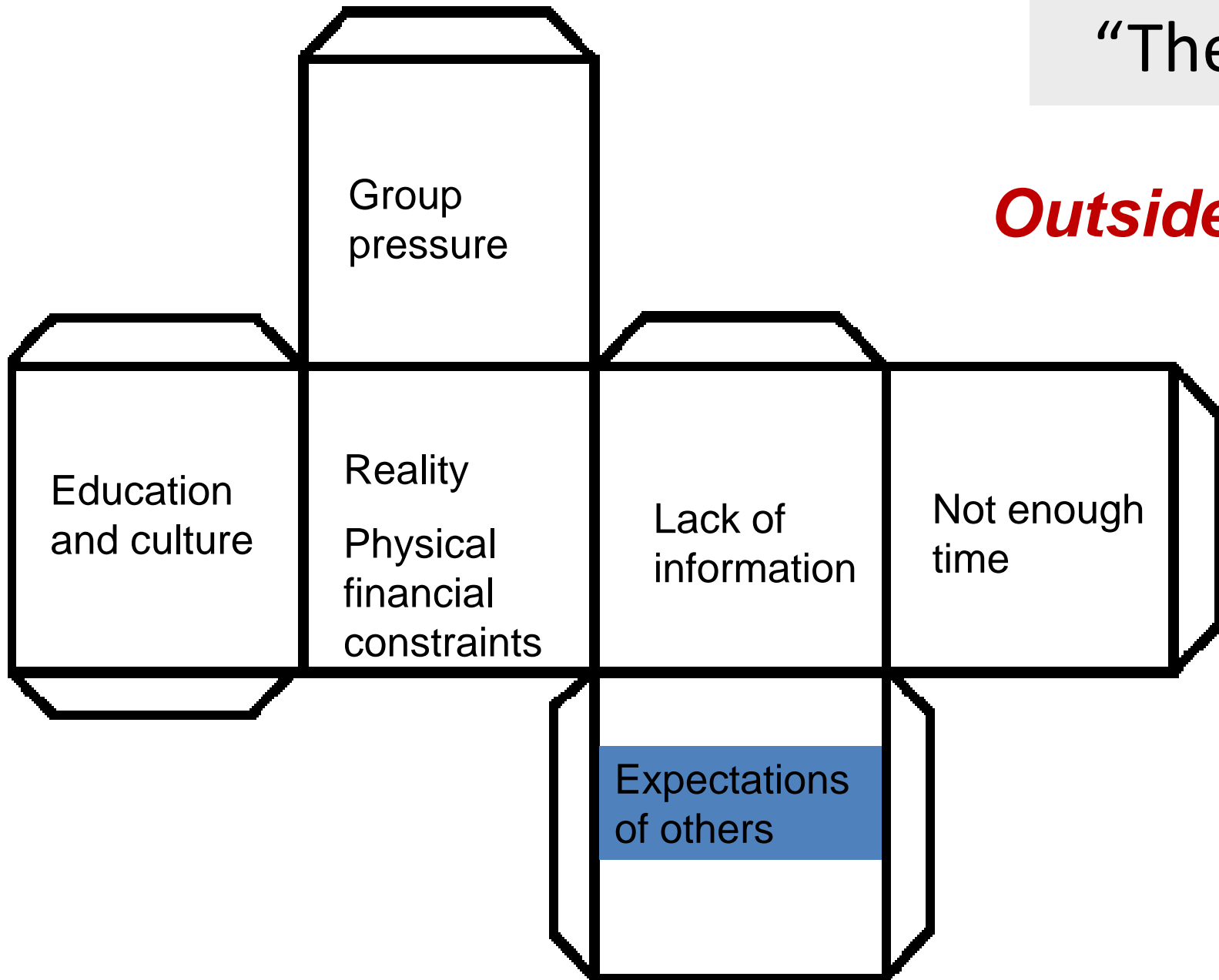
Thinking Outside the Box
solution two - one thick line!

Use one thick line instead of 4



“The box”

Outside



Culture influences the way research is perceived, conducted and supported

Culture has a lot to do with Research - be aware of it

- Collision with traditional beliefs
- Threatening clerical and worldly authorities
- Hollywood: “Mad scientist”
- Anxieties in societies
- Scholarly tradition or not
- Perception of manual work

Scientific Culture

Questions

- facts
- teachers
- authoritative figures
- scientific data

Values

- manual skills
- free flow of information
- Honesty
- Curiosity
- Open -mindedness

Accepts

- negative data
- failures as an important teacher
- confident presentation of data

Tolerates

- conflicting data
- confrontation

“The box”

Inside

Intellectual
lazyness
 (“dunno”)

Untrained
imagination

Obedience,
dependence
on other’s
opinions

Fear of
making
decisions

Lack of
knowledge

Lack of
courage
Low self-
esteem

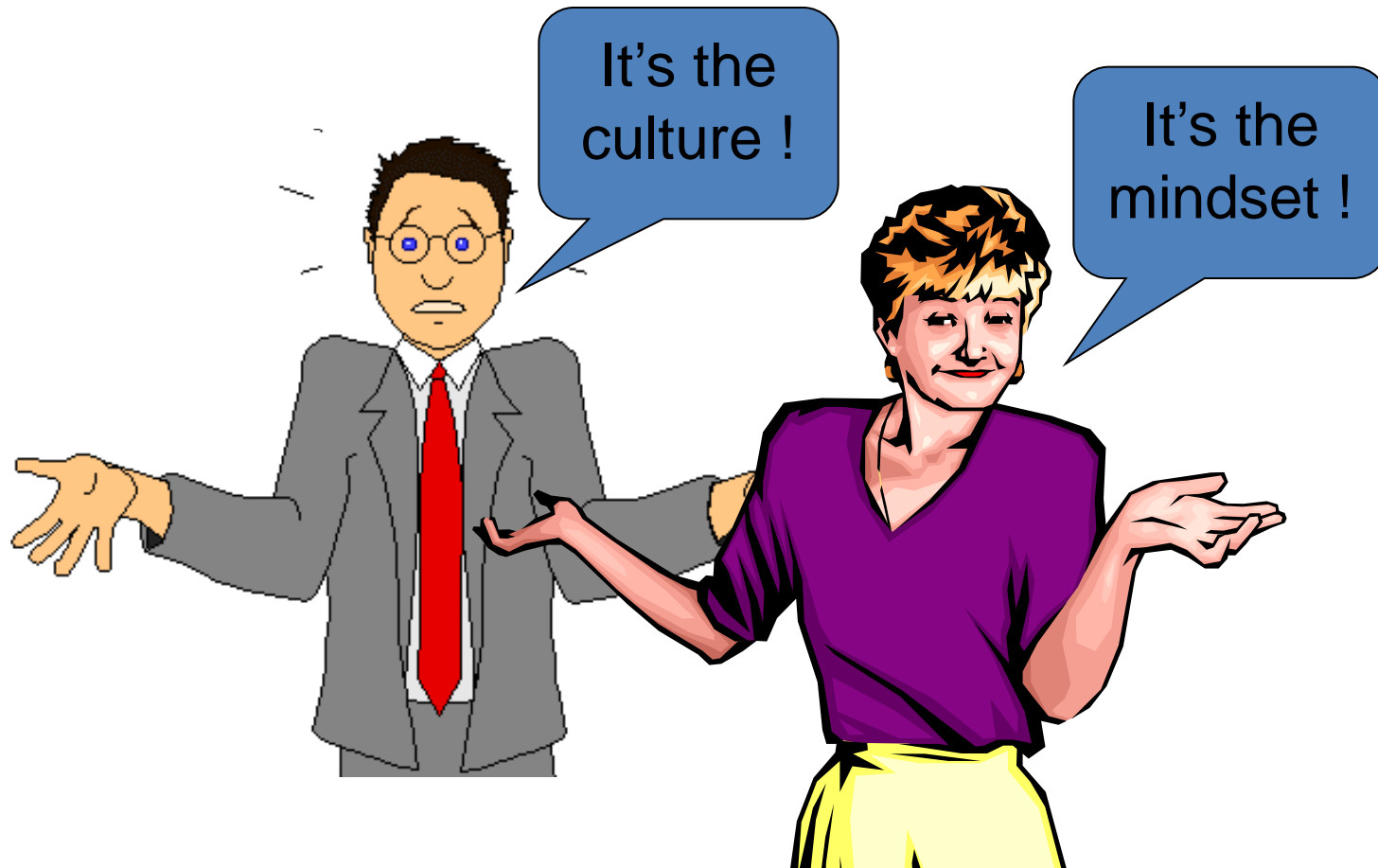
Expressing criticism/disagreement

- If you feel, something is missing or is wrong, **talk to your supervisor**
- How to address an issue might depend on the **cultural background of your supervisor**
- Criticism should **be constructive**: i.e. coupled with an alternative, nobody likes to be criticised
- True **scientists love the dispute**, even if your supervisor is taken aback *momentarily*

Scientific Culture meets national culture

- Know the values of the **international scientific culture** and adopt it in the lab & research community
- Depending on your cultural background this might afford “**switching gears**” when doing research work in “your lab” and **communicating with your supervisor**
- This does not come automatically, you have to **make an effort**, again awareness is key

Intellectual lazyness

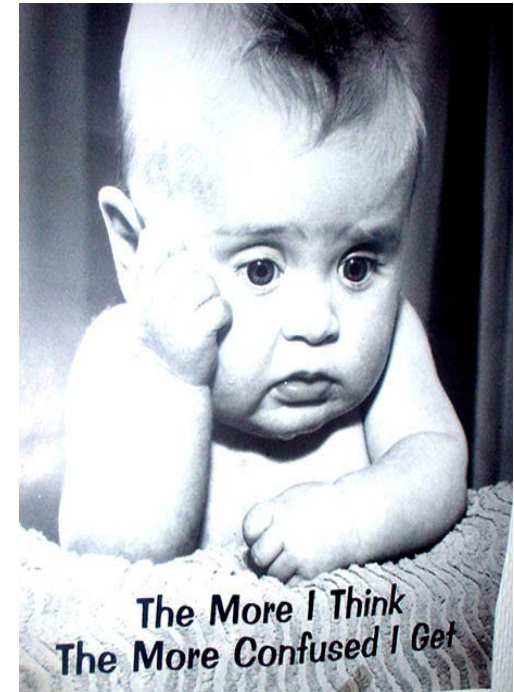


Good News and Bad News: Culture and Mindset can be changed, but you have to **Do It Yourself**

How to Write an Abstract and Authorship Issues

What is an Abstract

- An abstract is a condensed version of a full scientific paper.
- It states the purpose and/or background, methods, findings and conclusions of your research project



Four 'C's

- Complete — it covers the major parts of the project/case
- Concise — it contains no excess wordiness or unnecessary information.
- Clear — it is readable, well organized, and not too jargon-laden.
- Cohesive — it flows smoothly between the parts.

Title and Author Information

Create a winning title

- Should be convincing
- Appealing

Following the title, the names of all authors and their institutional affiliations are listed

Prior to Submission

Check Yourself, did you :

Follow the instructions!!!!

Include headings *exactly as stated* in the instructions/template?

Use short, clear sentences; one idea per sentence?

Limit your abstract to the word count/character count requirement?

Edit, edit, edit

Check grammar, syntax and punctuation

Some Writing Tips

- Usually active voice is preferable to passive voice
 - “We studied 15 patients with liver cirrhosis” is much better than
“Fifteen patients with liver cirrhosis were studied.”
- Always use the full term before you refer to it by acronym [for example, Total Joint Replacement (TJR)]
- Write only one thought per sentence (long vs short sentences)
- Eliminate unnecessary words
- Ensure that verb tenses are consistent and correct

Authorship issues

To be eligible for authorship, most policies require that a person:

- Make a major contribution to concept, design, analysis and/or interpretation of the work
- Participate in drafting the article or revising it critically for important content
- Have a voice in the final version submitted for publication
- Accept responsibility as well as credit for the work
- Be able to present, discuss, interpret, and defend the work, analysis, and conclusions

Publish and perish

“The Five Deadly Sins”

1. Data manipulation, falsification
2. Plagiarism
3. Duplicate manuscripts
4. Author conflicts of interest
5. Animal/Human subjects

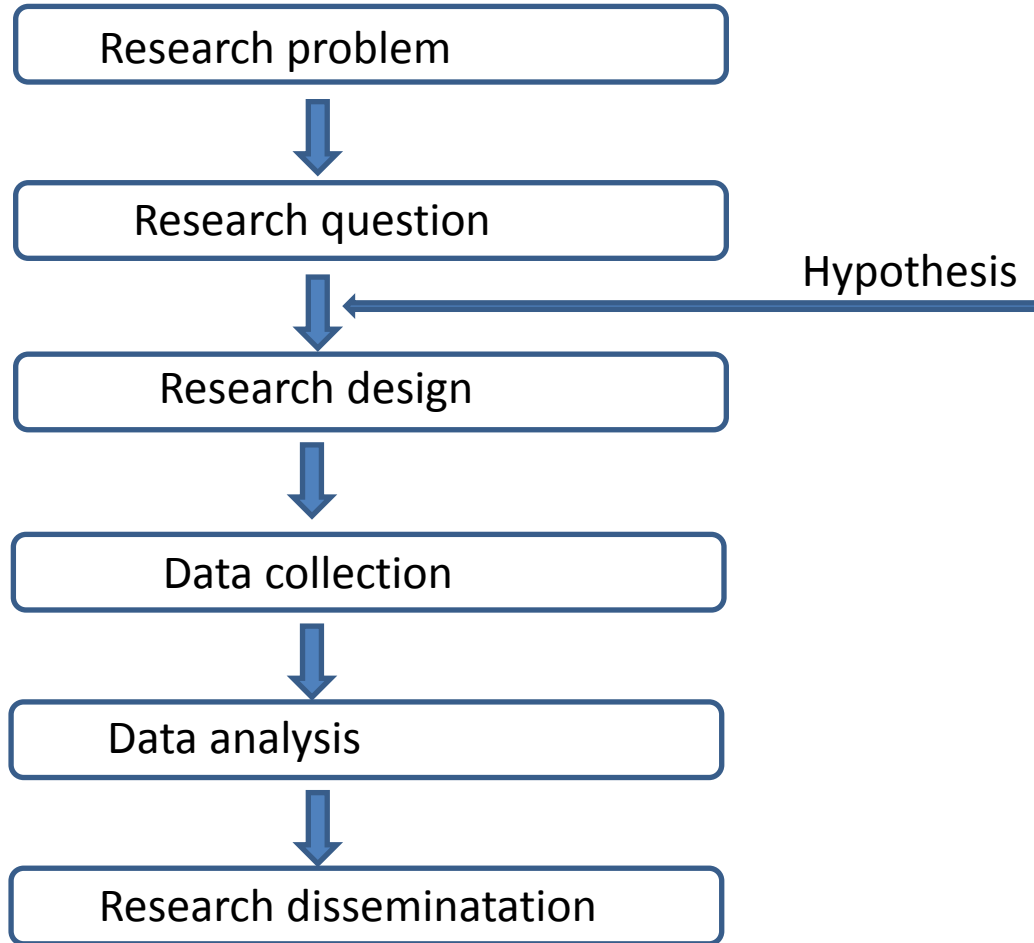
Paraphrase!!!



Plagiarism:

the act of presenting another's work or ideas as your own.

Issue of Multiple first Authors and Author sequence



Research attributes

Integrity

Responsibility

competence

beneficence

Privacy

Autonomy

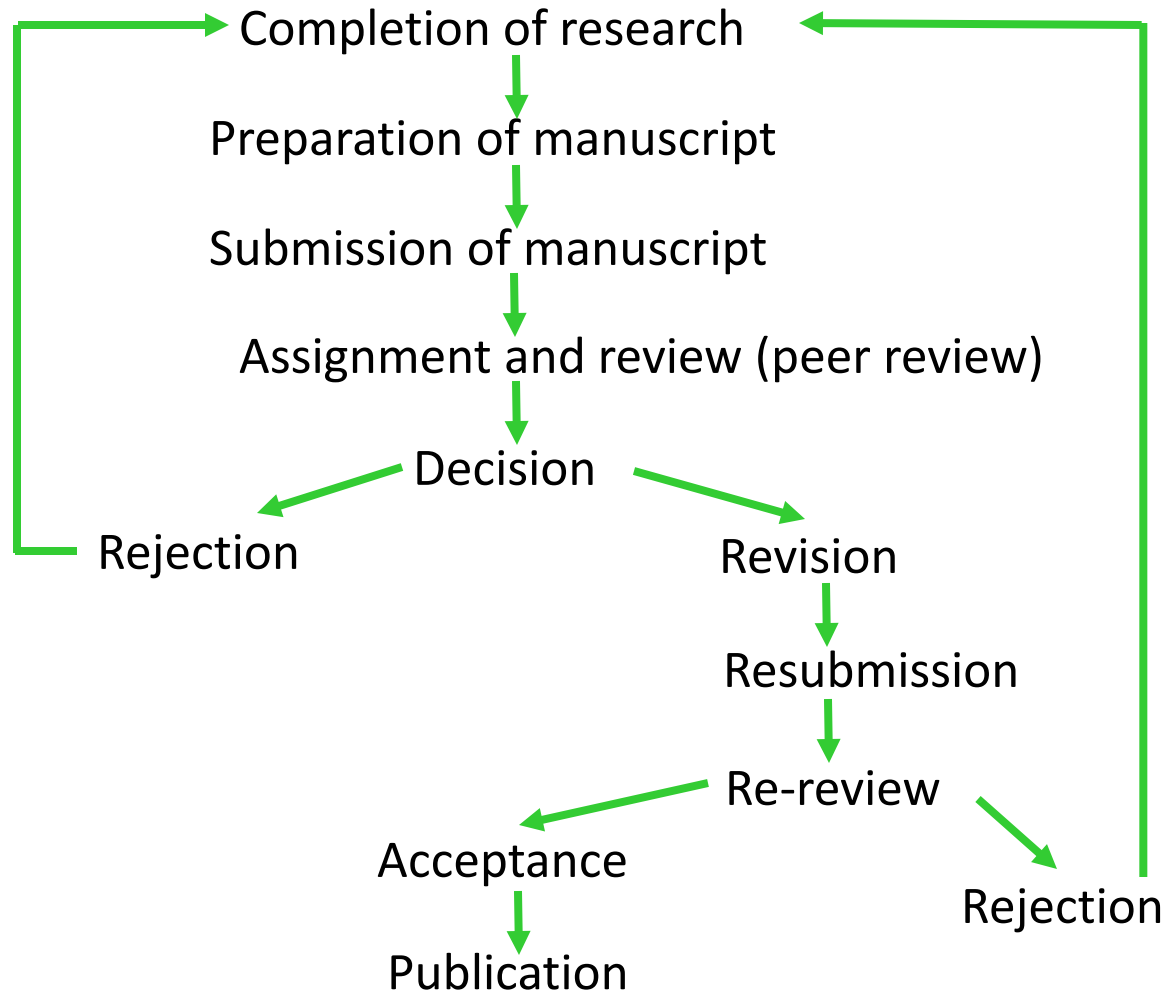
Honesty

Confidentiality

Justice

Dignity

Process of Research



Finished!!! You did it!!!



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