Academic Paper Writing

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Content

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- How to cite the references

Part II – Preparing the Text

How to Prepare the Title?

First impressions are strong impressions; a title ought therefore to be well studied, and to give, so far as its limits permit, a definite and concise indication of what is to come.

—T. Clifford Allbutt

Part II – Preparing the Text

How to Prepare the Title?

1. **Importance of Title**

- Salient Fact: This title will be read by thousands of people.
- The most common error in defective titles, and certainly the most damaging one in terms of comprehension, is faulty syntax.
- A good title is defined as the fewest possible words that adequately describe the contents of the paper. [Clarity]
- Indexing and abstracting services depend heavily on the accuracy of the title, as do individual computerized literature-retrieval systems.
- Never ever sacrifice clarity in an attempt to be witty.

Part II – Preparing the Text

How to Prepare the Title?

2. **Length of Title**

- Too short title cannot provide much information to the potential readers, like “Studies on Brucella”. [Because it is too general]
- If you really want to use a rather short title, that means you systematically investigated something, including anything. [Need for Specific Titles]
- Ironically, long titles are often less meaningful than short ones.
- Consider this one from 1705: “A Wedding Ring Fit for the Finger, or the Salve of Divinity on the Sore of Humanity with directions to those men that want wives, how to choose them, and to those women that have husbands, how to use them”. This title appeared on a miniature book.

Part II – Preparing the Text

How to Prepare the Title?

2. **Length of Title**

- Most excessively long titles contain “waste” words.
- These waste words appear right at the start of the title, words such as “Studies on,” “Investigations on,” and “Observations on”.
- An opening A, An, or The is also a waste word.
- Such words are useless for indexing purposes.
- Suggestion: ***** Method/Design/Approach for *** based on/through ****
- Case A: Self-Assembly Magnetic Chain Unit for Bulk Biomaterial Actuation
- Case B: Simultaneous Precision Assembly of Multiple Objects through Coordinated Micro-robot Manipulation

Part II – Preparing the Text

How to Prepare the Title?

3. **Need for Specific Titles**

- Case study: “Action of Antibiotics on Bacteria”.

  The title means “Test the effect of all antibiotics on all kinds of bacteria”

- Most titles that are too short because they include general rather than specific terms. Such titles are essentially meaningless, and normally will be rejected immediately by the journal editor, because you are exaggerating.
- Title Clarity essentially means using the least words to express exactly what you did.
- Suggestion: ***** Method/Design/Approach for *** based on/through ****

Part II – Preparing the Text

How to Prepare the Title?

4. **Importance of Syntax**

- In titles, be especially careful of syntax. Most of the grammatical errors in titles are due to faulty word order.
- Case Study:
- Mechanism of Suppression of Nontransmissible Pneumonia in Mice Induced by Newcastle Disease Virus
- vs.
- Mechanism of Suppression of Nontransmissible Pneumonia Induced in Mice by Newcastle Disease Virus

Part II – Preparing the Text

How to Prepare the Title?

4. **Importance of Syntax**

- In titles, be especially careful of syntax. Most of the grammatical errors in titles are due to faulty word order.
- Syntax error causes unclarity.
- And Syntax error normally turns out to be immediate rejection by EIC.

- Suggestion: ***** Method/Design/Approach for *** based on/through ****

Part II – Preparing the Text

How to Prepare the Title?

5. **The title as A Label**

- The title of a paper is a label.
- It normally is not a sentence.
- Title does not follow subject-verb-object arrangement.
- And thus the order of the words becomes even more important.
- A few journals do permit a title to be a sentence. An example of such a title: “Fruit Flies Diversify Their Of spring in Response to Parasite Infection” (Science 349:747, 2015).
- Such titles are called Assertive Sentence Title (AST).

Part II – Preparing the Text

How to Prepare the Title?

5. **The title as A Label**

- ASTs are “improper and imprudent” because “in some cases the AST boldly states a conclusion that is then stated more tentatively in the summary or elsewhere” and “ASTs trivialize a scientific report by reducing it to a one-liner”.
- Title as a label, the terms in the title should be those that highlight the significant content of the paper.
- The maximum character count is likely to be stated in the journal’s instructions to authors.

Part II – Preparing the Text

How to Prepare the Title?

6. **Abbreviations and Jargon**

- Titles should almost never contain abbreviations, chemical formulas, proprietary (rather than generic) names, jargon, and the like.
- If the paper concerns an effect of hydrochloric acid, should the title include the words “hydrochloric acid,” or should it contain the much shorter and readily recognizable “HCl”?
- By far the best rule for authors (and editors) is to avoid abbreviations in titles. And the same rule should apply to proprietary names, jargon, and unusual or outdated terminology.

Part II – Preparing the Text

How to Prepare the Title?

6. **Regarding Title Format**

- Many editors are opposed to main title-subtitle arrangements.
- Many editors believe that it is important, especially for the reader, that each published paper "present the results of an independent, cohesive study; thus, numbered series titles are not allowed". . (What happens when IV is accepted but III is rejected or delayed in review?)
- Hanging title is not favored. .(Example: "Environmental Science in the Media: Effects of Opposing Viewpoints on Risk and Uncertainty Perceptions" Science Communication 37:287, 2015)

Part II – Preparing the Text

How to List Authors and Addresses?

The list of authors establishes accountability as well as credit.

—National Academies Committee
on Science, Engineering,
and Public Policy

Part II – Preparing the Text

How to List Authors and Addresses?

1. **The Order of The Names**

- “If you have co-authors, problems about authorship can range from the trivial to the catastrophic” (O’Connor 1991, p. 10).
- The easiest part of preparing a scientific paper is simply entering the bylines: the authors and addresses.
- Unfortunately, there are no agreed-upon rules or generally accepted conventions.
- In the filed of mathematics, listing author names alphabetically appears to be a standard.

Part II – Preparing the Text

How to List Authors and Addresses?

1. **The Order of The Names**

- Some pairs of researchers who repeatedly collaborate take turns being listed first.
- If allowed by the journal, sometimes papers include a note indicating that the first two authors contributed equally to the research.
- A general tendency is to list the head of the laboratory (or, more generally, the head of the research group) as an author whether or not he or she actively participated in the research.
- Often, the “head” was placed last.

Part II – Preparing the Text

How to List Authors and Addresses?

1. **The Order of The Names**

- The terminal spot of the author list is to acquire prestige.
- The prestige-seeking author would want the first or last position, but not the one in between.
- Suggestion: Always put your PI's name on the last spot of the author list the first time you show your manuscript.
- Commonly, the first author is the person who played the lead role in the research. And Qualification to be listed first does not depend on rank.

Part II – Preparing the Text

How to List Authors and Addresses?

1. **The Order of The Names**

- Multiple authors may then be listed approximately in order of decreasing contribution to the work.
- The head of the laboratory is still often listed last, in which case this position may continue to command particular respect.
- In general, all those listed as authors should have been involved enough to defend the paper or a substantial aspect thereof.
- Suggestion: Don’t agree to list your name in the author list unless you really contribute to the paper.

Part II – Preparing the Text

How to List Authors and Addresses?

1. **The Order of The Names**

- There is often a tendency to use the laundry-list approach, naming as an author practically everyone in the laboratory.
- In addition, the trend toward collaborative research is steadily increasing. Thus, the average number of authors per paper is on the rise.
- For example, a paper by F. Bulos and others (Phys. Rev. Letters 13:486, 1964) had 27 authors and only 12 paragraphs.
- Personal Suggestion: Don’t let the author list length exceeds 5. Longer author list, particularly one with authors from different affiliations, is considered playing tricky thing in the review process.

Part II – Preparing the Text

How to List Authors and Addresses?

2. **Definition of Authorship**

- An author of a paper should be defined as one who takes intellectual responsibility for the research results being reported.
- It is often incredibly difficult to analyze the intellectual input to a paper.
- The sequence of authors on a published paper should be decided, unanimously, before the research is started.
- It is foolish to leave this important question of authorship to the very end of the research process.

Part II – Preparing the Text

How to List Authors and Addresses?

3. **Specific Contribution**

- Some journals require a list of which author or authors did what—for example, who designed the research, who gathered the data, who analyzed the data, and who wrote the paper.
- Requiring this list of contributions can have at least two advantages. First, it helps ensure that everyone listed as an author deserves to be listed—and that no one who ought to be listed has been left out. Second, if the list is published, it can help readers determine which author to contact for which type of information.

Part II – Preparing the Text

How to List Authors and Addresses?

4. **Proper and Consistent Form**

- To names of authors, the preferred designation normally is given name, middle initial, surname.
- It is not recommended to use initials in the author list. If dozens of people published under the name J. B. Jones, the retrieval services have a hopeless task in keeping things neat and tidy.
- Many scientists resist the temptation to change their names (for example, after marriage) at least in part to avoid confusion in the literature.

Part II – Preparing the Text

How to List Authors and Addresses?

4. **Proper and Consistent Form**

- Whatever name format a scientist chooses, he or she should use it consistently in English-language scientific papers—rather than, for example, using Shou-Chu Qian on some papers, and Shouchu Qian on others.
- In general, scientific journals do not print degrees after authors' names and do not include titles such as Dr. (You know what "B.S." means. "M.S." is More of the Same. "Ph.D." is Piled Higher and Deeper. "M.D." is Much Deeper) , other than medical journals.

Part II – Preparing the Text

How to List Authors and Addresses?

5. **Listing the Address**

- Authors are always supposed to be connected with address.
- With one author, one address is given.
- If, before publication, the author has moved to a different address, the new address should be indicated in a “present address” footnote.
- When two or more authors are listed, each in a different institution, the addresses should be listed in the same order as the authors.
- Clear identification of authors and addresses has been important to several of the secondary services. Only when authors could be properly identified could their publications be grouped together in citation indexes.

Part II – Preparing the Text

How to List Authors and Addresses?

5. **Listing the Address**

- Example

S. Liu* (corresponding author) and Yuyu Jia are with ShanghaiTech Automation and Robotics Center, School of Information Science and Technology, ShanghaiTech University, Shanghai 201210, China (email: liusong@shanghaitech.edu.cn, jiayy1@shanghaitech.edu.cn).

Y. F. Li is with the Department of Mechanical Engineering, City University of Hong Kong, Kowloon, Hong Kong (email: meyfli@cityu.edu.hk).

Y. Guo is with the Institute of Medical Robotics, Shanghai Jiaotong University, Shanghai 200240, China (email: guoyao@sjtu.edu.cn).

H. J. Lu is with the State Key Laboratory of Industrial Control and Technology, and Institute of Cyber-Systems and Control, Zhejiang University, Hangzhou 310027, China (email: luhaojian@zju.edu.cn).

Part II – Preparing the Text

How to List Authors and Addresses?

6. **Listing the Address: A Solution – ORCID**

- Even with addresses, authors can be difficult to distinguish from one another— for example, if two scientists with the same name work at the same institution.
- Also, some scientists move from one institution to another or do not state their names the same way on all their papers over the years, and so their work is hard to track.
- This mechanism is ORCID, which stands for “Open Researcher and Contributor ID.”

Part II – Preparing the Text

How to List Authors and Addresses?

6. **Listing the Address: A Solution – ORCID**

- An ORCID identifier is a persistent identification number that you can obtain and include with your research communications.
- Many journals now ask authors to supply their ORCID identifiers.

A Novel Dual-Probe-Based Micrograsping System Allowing Dexterous 3-D Orientation Adjustment

Song Liu, You-Fu Li, *Senior Member, IEEE*, and Xue-Wei Wang

Part II – Preparing the Text

How to List Authors and Addresses?

7. **Purpose of the Address**

- Address serves two purposes. It helps to identify the author; it also indicates how to contact him or her.
- Scientists now communicate largely by email, an email address generally should be included.
- Suggestion: Don’t use a QQ or 163 or 126 email address. It is wired.
- The author who should receive inquiries is called the corresponding author, who takes full responsibility of the paper.
- Journals ask that a corresponding author be designated for each paper.

Part II – Preparing the Text

How to Prepare the Abstract?

1. **Definition**

- An abstract should be viewed as a miniature version of the paper.
- The abstract should provide a brief summary of each of the main sections of the paper: introduction, materials and methods, results, and discussion.
- “A well-prepared abstract enables readers to identify the basic content of a document quickly and accurately, to determine its relevance to their interests, and thus to decide whether they need to read the document in its entirety”.
- PS: Abstract is quite useful for readership, but not critical for review process.

Part II – Preparing the Text

How to Prepare the Abstract?

1. **Definition**

- The abstract should not exceed the length specified by the journal (commonly, 250 words).
- Some journals, however, run “structured” abstracts consisting of a few brief paragraphs, each preceded by a standardized subheading.
- The abstract should (1) state the principal objectives and scope of the investigation, (2) describe the methods employed, (3) summarize the results, and (4) state the principal Conclusions.

Part II – Preparing the Text

How to Prepare the Abstract?

1. **Definition – Regarding the Conclusion**

- The importance of the conclusions is indicated by the fact that they are often given three times: once in the abstract, again in the introduction, and again (in more detail, probably) in the discussion.

Part II – Preparing the Text

How to Prepare the Abstract?

1. **Definition**

- Most or all of the abstract should be written in the past tense because it refers to work done. – from “How to Write and Publish a Scientific Paper”
- The abstract should never give any information or conclusion that is not stated in the paper.
- Literature must not be cited in the abstract.
- Normally the abstract should not include or refer to tables and figures.

Part II – Preparing the Text

How to Prepare the Abstract?

2. **Types of Abstracts**

- The abstract we mentioned in last section is called *informative abstract*, which is designed to condense the paper.
- Without such abstracts, scientists would not be able to keep up in active areas of research.
- This is the type of abstract that precedes the body of the paper (thus serving as a “heading”) in most journals.
- Another type of abstract is the *indicative abstract*, which is designed to indicate the subjects dealt with in a paper, much like a table of contents.

Part II – Preparing the Text

How to Prepare the Abstract?

2. **Types of Abstracts**

- Indicative abstract can seldom serve as a substitute for the full paper.
- Thus, indicative abstracts should not be used as “heading” abstracts in research papers, but they may be used in other types of publications, such as review papers, conference reports, and government reports.
- When writing the abstract, remember that it will be published by itself, and should be self-contained. That is, it should contain no bibliographic, figure, or table, references. . . . The language should be familiar to the potential reader. Omit obscure abbreviations and acronyms. Write the paper before you write the abstract, if at all possible”.

This article proposes a two-finger-based micrograsping system with high compliant borosilicate 3.3 glass probes and the corresponding sensing and control algorithms, which enables the orientation manipulation of microparts in three-dimensional (3-D) space. Compared with the existing research, the novelty of this article relies on three aspects: 1) the end-effector of the microgripper is designed to be with high compliance so that the squeeze force exerted on microparts can be more accurately regulated and the proposed microgripper is capable of manipulating fragile microparts; 2) the micrograsping system is endowed the capability to fully manipulate microparts' orientation without recurring to auxiliary probes or rotary stages; and 3) the vibration characteristic of the grasping arm is investigated as cantilever beam for gasping stability analysis and squeeze force maintaining. In specific, taking spherical microparts with dimensions in the range from tens to hundreds of micrometers as target, the grasping system configuration, and the contact model between the probe and the microparts are first presented. Afterward, kinematics-based motion control strategy for position adjustment and orientation manipulation of microparts is clarified. Then, squeeze force regulation strategy is proposed, including adhesive force evaluation, vision-based squeeze force estimation, and the micropart releasing method. Finally, the vibration characteristic of the grasping arm is investigated as cantilever beam for gasping stability analysis and the squeeze force maintaining. The reliability and availability of the proposed micrograsping system is validated by well-designed experiments.

Indicative Abstract or Informative Abstract? How to Choose?

Part II – Preparing the Text

How to Prepare the Abstract?

3. **Economy of Words**

- "Very often, the reviewer may be perilously close to a final judgment of your manuscript after reading the abstract alone." – from "how to write and publish a scientific paper".
- Story: A scientist once had some terribly involved theory about the relation of matter to energy. He then wrote a terribly involved paper. However, the scientist, knowing the limitations of editors, realized that the abstract of his paper would have to be short and simple if the paper was to be judged acceptable. So, he spent hours and hours honing his abstract. He eliminated word after word until, finally, all of the verbiage had been removed. What he was left with was the shortest abstract ever written: "$E = mc^2$."

Part II – Preparing the Text

How to Prepare the Abstract?

3. **Economy of Words**

- Every word counts! If you can tell your story in 100 words, never use 200.
- Of more importance to you, the use of clear, significant words will impress the editors and reviewers.
- But never write abstract like this!
- Example: M. V. Berry and colleagues (J. Phys. A: Math. Theor. 44:492001, 2011). The title of the paper: “Can apparent superluminal neutrino speeds be explained as a quantum weak measurement?” The abstract: “Probably not.”
- Suggestion in all: Write a neutral abstract! Never try witty thing.

Part II – Preparing the Text

How to Prepare Introduction?

1. **Guidelines**

- PS: Introduction is the most important part of a paper in regard to the review process. It is the introduction that determines whether the manuscript can go to a second-round review.
- It is wise to begin writing the paper while the work is still in progress. This makes the writing easier because everything is fresh in your mind.
- So, be grateful to your PI if your PI asks you to update your research by slides or work report.
- Furthermore, the writing process itself is likely to point to inconsistencies in the results or perhaps to suggest interesting sidelines that might be followed.

Part II – Preparing the Text

How to Prepare Introduction?

1. **Guidelines**

- PS: Introduction is the most important part of a paper in regard to the review process. It is the introduction that determines whether the manuscript can go to a second-round review.
- The purpose of the introduction is to supply sufficient background information to allow the reader to understand and evaluate the results of the present study without needing to refer to previous publications on the topic.
- You should state briefly and clearly your purpose in writing the paper.
- Choose references carefully to provide the most important background information.

Part II – Preparing the Text

How to Prepare Introduction?

1. **Guidelines**

- PS: Introduction is the most important part of a paper in regard to the review process. It is the introduction that determines whether the manuscript can go to a second-round review.
- Much of the introduction should be written in present tense because you are referring primarily to your problem and the established knowledge relating to it at the start of your work.

Part II – Preparing the Text

How to Prepare Introduction?

1. **Guidelines for a good introduction**

- (1) The introduction should present first, with all possible clarity, the nature and scope of the problem investigated. For example, it should indicate why the overall subject area of the research is important.
- (2) It should briefly review the pertinent literature to orient the reader. It also should identify the gap in the literature that the current research was intended to address.
- (3) It should then make clear the objective of the research. In some disciplines or journals, it is customary to state here the hypotheses or research questions that the study addressed. In others, the objective may be signaled by wording such as "in order to determine."

Part II – Preparing the Text

How to Prepare Introduction?

1. **Guidelines for a good introduction**

- (4) It should state the method of the investigation. If deemed necessary, the reasons for the choice of a particular method should be briefly stated.
- (5) Finally, in some disciplines and journals, the standard practice is to end the introduction by stating the principal results of the investigation and the principal conclusions suggested by the results.

Part II – Preparing the Text

How to Prepare Introduction?

2. **Reasons for the Guidelines**

- The guidelines for a good introduction need little discussion, being reasonably well accepted by most scientist-writers, even beginning ones.
- The first rule (definition of the problem) is the cardinal one. If the problem is not stated in a reasonable, understandable way, readers will have no interest in your solution, and reviewers and editors will reject your manuscript.
- In the introduction, you should have a "hook" to gain the reader's attention focusing on two whys. Why did you choose that subject, and why is it important?

Part II – Preparing the Text

How to Prepare Introduction?

2. **Reasons for the Guidelines**

- The second, third, and fourth guidelines relate to the first. The literature review, specification of objective(s), and identification of method should be presented in such a way that the reader will understand what the problem was and how you tried to resolve it.
- Do not keep the reader in suspense; let the reader follow the development of the evidence. Never try to surprise the readers using descriptions like “Go the following to find the details”. The interest should be the stated problem and the mentioned method to solve it.

Part II – Preparing the Text

How to Prepare Introduction?

3. **Reasons for the Guidelines**

- Never try holding back their more important findings until late in the paper. If so, you are playing witty thing. And readers and editors plus reviewers are not patient enough to play with you.
- The problem with the surprise ending is that the readers become bored and stop reading long before they get to the punch line.
- In short, the introduction provides a road map from problem to solution. This map is so important that a bit of redundancy with the abstract is often desirable.

Part II – Preparing the Text

How to Prepare Introduction?

3. **Exceptions**

- The literature review in the introduction typically should be brief and selective.
- Journals in some disciplines favor an extensive literature review, almost resembling a review article within the paper.
- Some journals even make this literature review a separate section after the introduction—yielding what might be considered an ILMRAD structure.

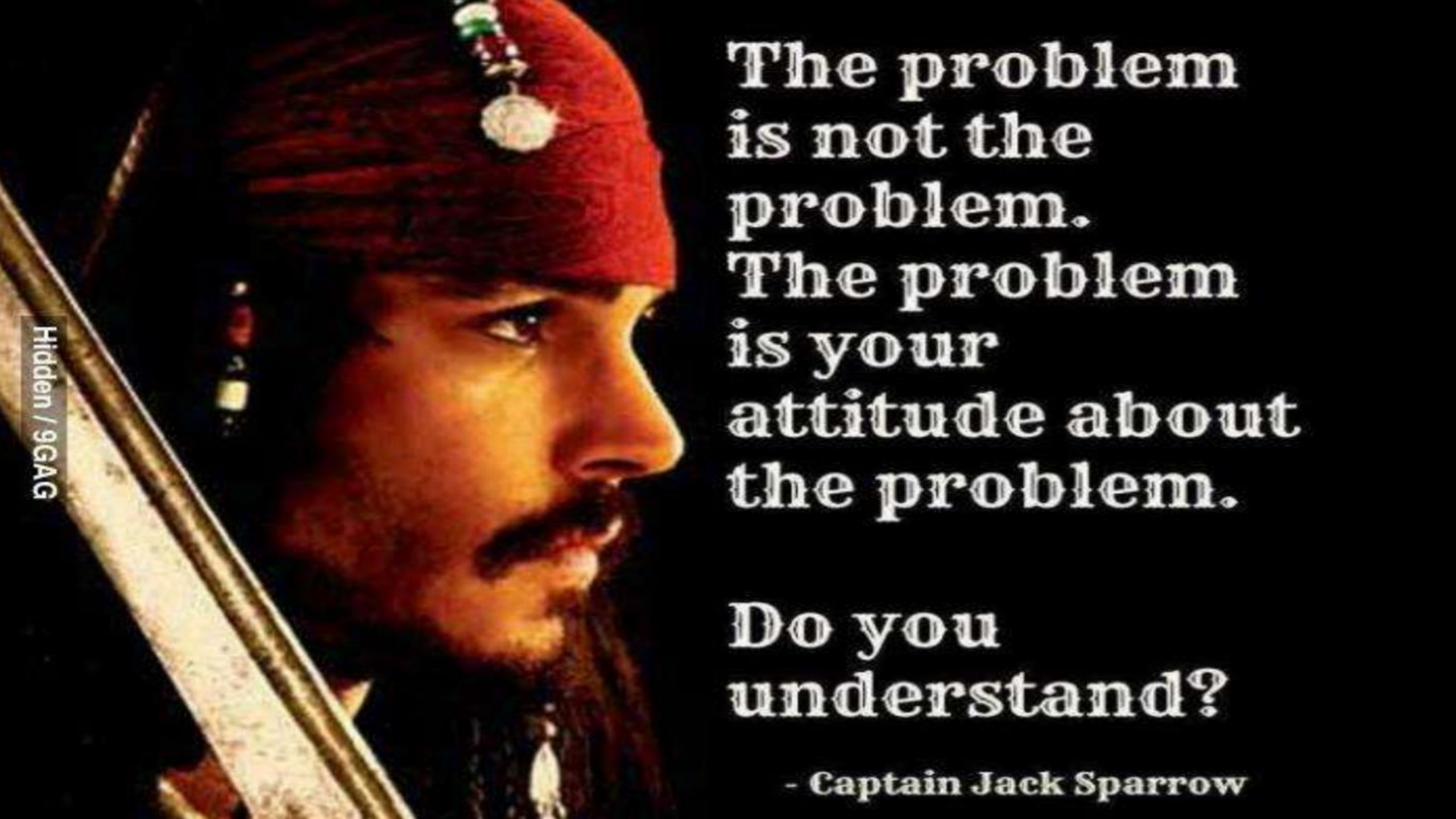
- Anyway, the conventions in your field and the requirements of your target journal take precedence.

Part II – Preparing the Text

How to Prepare Introduction?

4. **Citations and Abbreviations**

- If you have previously published a preliminary note or abstract of the work, you should mention this (with the citation) in the introduction.
- If closely related papers have been or are about to be published elsewhere, you should say so in the introduction, customarily at or near the end.
- keep in mind that your paper may well be read by people outside your narrow specialty. (this is the reason why it is so important!)
- In general you should define in the introduction any specialized terms or abbreviations that you will use to avoid confusion.


The problem is not the problem. The problem is your attitude about the problem.
Do you understand?
- Captain Jack Sparrow
Hidden / 9GAG