How to Write a Research Paper

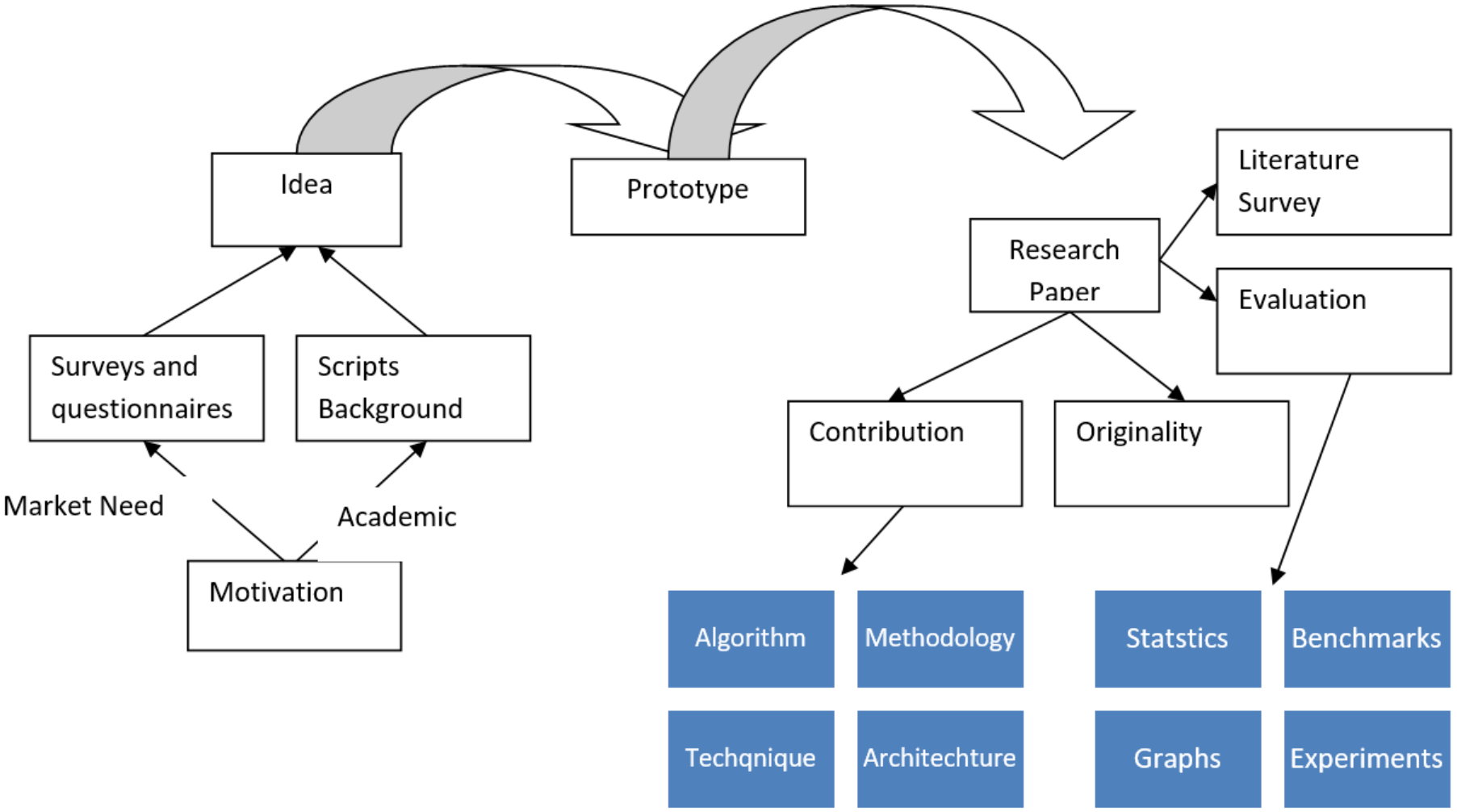
- **2. Your supervisor/professor is not here to teach you basic grammar and spelling.**

- The more time and emotional energy she or he spends on correcting basic English usage, the less remains for issues of content or fine-tuning. You are responsible for mastering the basics of the language. With word processors and spellcheckers having become standard writing tools, typos or other spelling errors should be very rare.

- **3. Do Not Turn in a First Draft!**

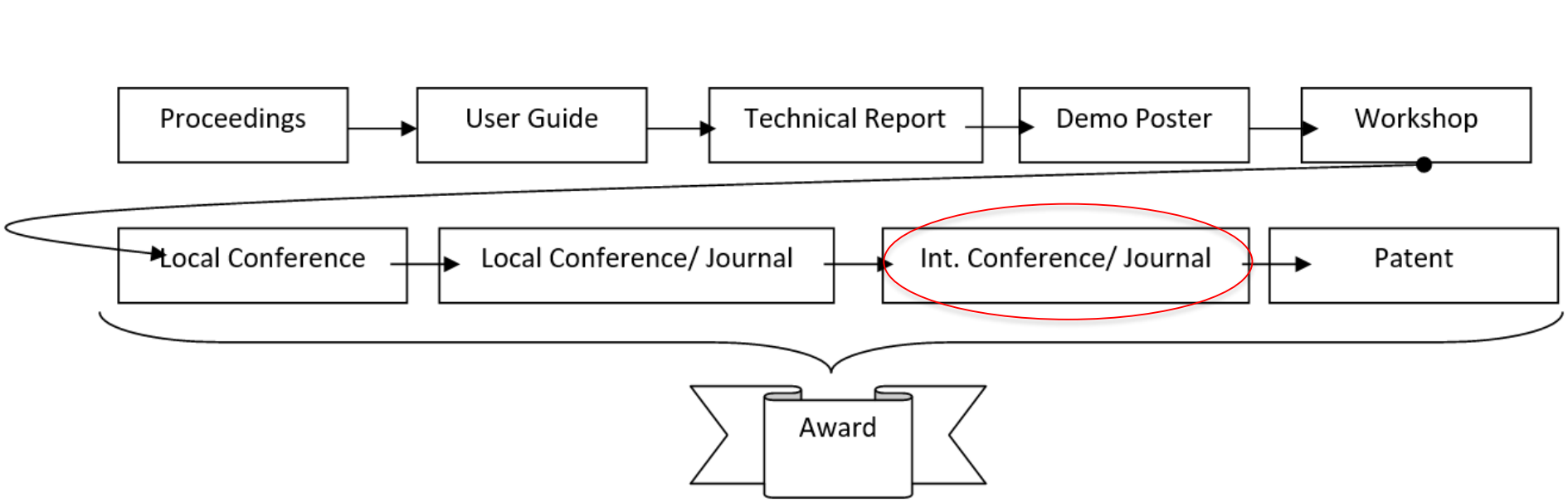
- Ever! Most people's first drafts are terrible. "Good writing is rewriting," and you should make a serious effort at editing, rewriting, and fine-tuning before you give the manuscript to anyone else to read. If you need to put a piece of writing away for a few days before you can approach it dispassionately enough to rework it, do so.

Research Life Cycle



Research papers levels

- Int Journal Impact Factor
- http://www.scimagojr.com



Overview:

Requirements *(What you need for your paper)* √

Topic Questions *(What you need to put into your paper)* √

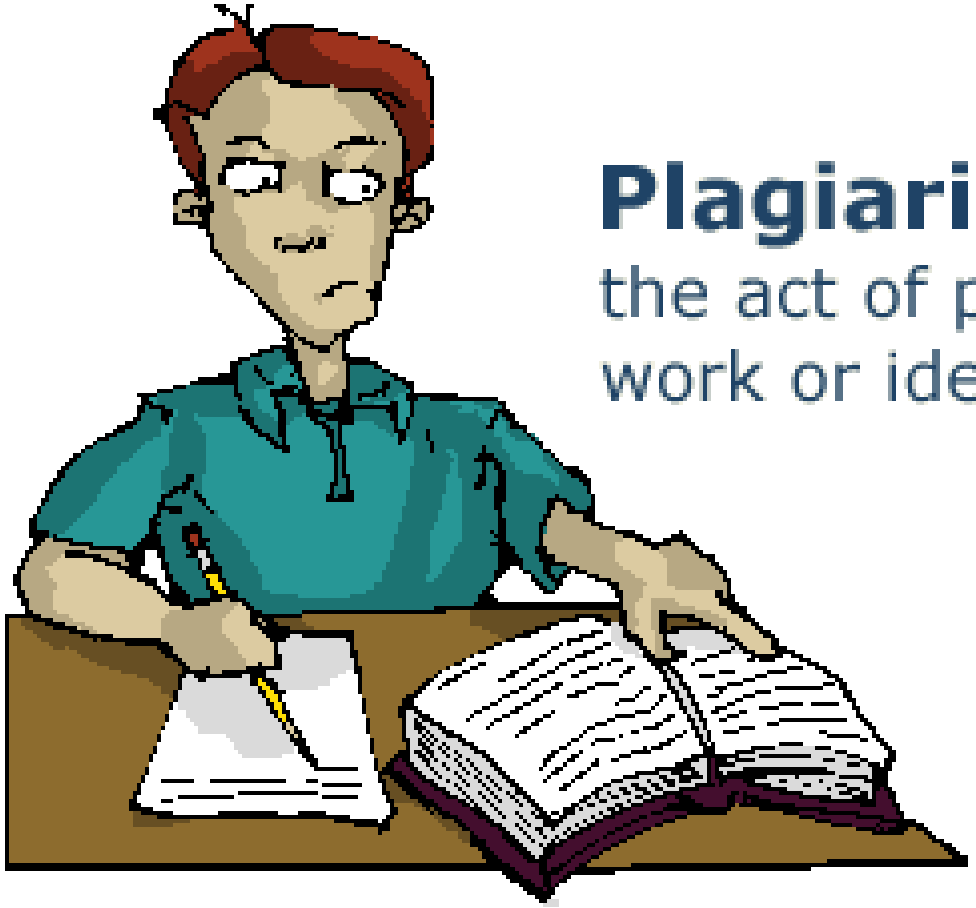
Choices *(The disasters you will research)* √

How to write your research paper: Follow these instructions step-by-step!

1. **Your outline should be written before you start your paper. It organizes your thoughts and creates a plan so you know how your paper will look.**

2. **Your introduction or thesis statement tells the audience what you will explain in your paper. It will let the audience know what to expect from reading your paper.**

3. **You are required to use a *minimum* of three sources. You must have *at least* one book , one website, and one encyclopedia *(online or book format)* *No wikipedia.org; mtv.com; or youtube.com unless by permission of Mrs. Nuzzo**



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

Paraphrase!!!

Plagiarism v. Paraphrasing Samples

Direct quote from research:
"Japan's beautiful Mount Fuji last erupted in 1707 and is now classified as dormant. Dormant volcanoes show no signs of activity, but they may erupt in the future."

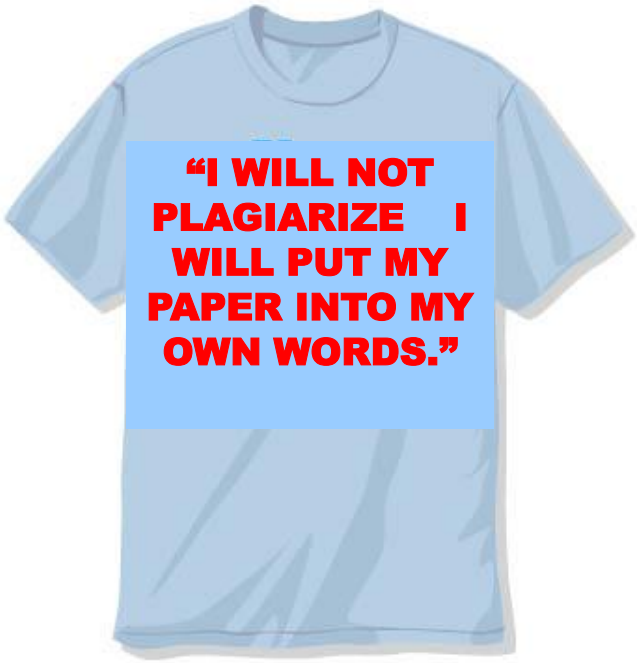
Non-plagiarized paraphrase:
Mount Fuji, the highest mountain in Japan, is actually a dormant volcano. Dormant means that it is not active. The last time Mount Fuji erupted was in 1707, and there is always the possibility of a future eruption.

Direct quote from research:
"Three weeks after Katrina, warnings of the arrival of Hurricane Rita sent residents of cities such as Houston, Texas, rushing to evacuate, fearing for their lives. Fortunately, Hurricane Rita turned out to be much less severe than Katrina. However, mass evacuations like this bring hazards of their own, as panicking drivers may cause accidents on the jammed roads."

Non-plagiarized paraphrase:
Shortly after Hurricane Katrina devastated the city of Houston, Texas, a warning for a new hurricane named Rita was broadcast, which caused many people to panic and flee the city. However, the mass departure of people leaving Houston at the same time could have caused many car accidents, even though the hurricane turned out to be not as dangerous as Katrina.

"How do I *QUOTE* an author?"

- If you quote an author, insert "quotation marks" around the text you are using.
- At the end of the quotation, ***parenthetical notations*** are needed.
- Simply write the quote and then put the author's name and page number:
- **(Williamson, 148)**
- You will cite the entire source when you get to the bibliography page of your paper.



Bibliography or Works Cited Page

1. At the end of your paper you will include a bibliography or works cited page.
2. This gives the authors of your sources credit for their work.
3. In your packet you will find sample bibliography entries for various sources.
4. If you have any questions you can refer to: **http://www.aresearchguide.com/12biblio.html** or the information in the packet.
5. Sources should be in alphabetical order and double spaced.
6. You can also use the following website to input your source information for your bibliography or works cited page: **www.noodletools.com/quickcite/**

Works Cited

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"Best Batteries." *Consumer Reports Magazine* 32 Dec. 1994: 71-72.

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Brain, Marshall. "How Batteries Work." *howstuffworks*. 1 Aug. 2006 <http://home.howstuffworks.com/battery.htm>.

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"Learning Center." *Energizer*. Eveready Battery Company, Inc. 1 Aug. 2006 <http://www.energizer.com/learning/default.asp>.

"Learning Centre." *Duracell*. The Gillette Company. 31 July 2006 <http://www.duracell.com/au/main/pages/learning-centre-what-is-a-battery.asp>.

Proofread, Proofread, & Proofread!!!

1. **Are all words spelled correctly? (Use a paper or online dictionary is unsure!)**
2. **Did I capitalize the beginning of each sentence and all proper nouns?**
3. **Did I punctuate correctly?**
4. **Do I use grammar correctly?**
5. **Did I answer all of the topic questions, and fulfill all of the requirements on my rubric.**
6. **Did I include an introduction and conclusion?**
7. **Did I type the paper using the correct font type, size, line spacing and margin requirements?**
8. **Did I paraphrase all content?**
9. **Did I use parenthetical notations for quotes?**
10. **Do my sentences make sense when read aloud?**
11. **Have I had my paper peer edited?**
12. **Does my paper flow well?**
13. **Did I include a bibliography page?**

Computer Science General paper looks like

- Title
- Abstract
- Introduction
- Related Work
- Methodology
- Experimental Section
- Results and Discussion Conclusions Acknowledgments
- References

Title

- Compose a title that is simple, attractive and accurately reflects the investigation
- -Phrases to avoid: Investigation, Study, Novel, Facile etc.
- - Avoid Acronyms that are known only to specialized community OF, ANN, ..etc

- **Types of title that can be used for scientific papers**

- **Indicative titles** indicate the subject matter of a paper but give no indication of any results obtained or conclusions drawn e.g. *The effectiveness of bed nets in controlling mosquitoes at different seasons of the year.*

- **Informative titles** give an indication of results achieved and conclusions drawn as well as the subject matter of the paper e.g. *Bed nets control mosquitoes most effectively when used in the rainy season.*

- **Question-type titles**
- This type of title obviously asks a question. e.g. *When are bed nets most effective when used to control mosquitoes?*

- **Main-subtitle (series) type**
- This approach is not liked by editors of scientific journals because if they accept the first paper they will be duty bound to accept sequels. e.g. *The effect of bed nets on mosquitoes: 1.Their effectiveness when used only in the rainy season.*

Abstract

- First couple of sentences should focus on what the study is about.
- Include major findings in a style that a general readership can read and understand (i.e., avoid detailed experimental procedures and data.)
- Keep it short and effective.
- -**Be creative in generating curiosity**

The Scientific Paper: Abstract

- An abstract is a shortened version of the paper and should contain all information necessary for the reader to determine:
- (1) what the objectives of the study were;
- (2) how the study was done;
- (3) what results were obtained;
- (4) and the significance of the results.

- Frequently, readers of a scientific journal will only read the abstract, choosing to read at length those papers that are most interesting to them. For this reason, and because abstracts are frequently made available to scientists by various computer abstracting services, this section should be written carefully and succinctly to have the greatest impact in as few words as possible.

- Although it appears as the first section in a paper, most scientists write the abstract section last.

Introduction

- Start the section with a general background of the topic.
- Add 2-3 paragraphs that discuss previous work.
- Point out issues that are being addressed in the present work.

The Scientific Paper: Introduction

- Why is this study of scientific interest and what is your objective?

- This section discusses the results and conclusions of previously published studies, to help explain why the current study is of scientific interest.

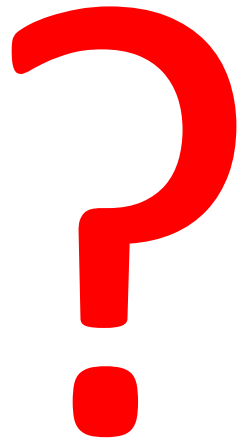
- The Introduction is organized to move from general information to specific information. The background must be summarized succinctly, but it should not be itemized. Limit the introduction to studies that relate directly to the present study. Emphasize your specific contribution to the topic.

- The last sentences of the introduction should be a statement of objectives and a statement of hypotheses. This will be a good transition to the next section, Methods, in which you will explain how you proceeded to meet your objectives and test your hypotheses.

Related Work

- Survey all papers talking around your problem
- Better approach to have several sections talking about each part in the proposed title
- Avoid unrelated work
- Cite papers from IEEE and ACM
- Cite recent papers 10 years ago max in CS field.

Methodology



The Scientific Paper: Methods/Materials

- This section provides all the methodological details necessary for another scientist to duplicate your work.
- It should be a narrative of the steps you took in your experiment or study, not a list of instructions such as you might find in a cookbook.
- An important part of writing a scientific paper is deciding what bits of information needs to be given in detail. Do not quote or cite your laboratory manual!
- Sometimes, experimental details are given as supplementary part!

Experiments

- Must Include:
- Data set collection methods
- Setups of experiments
- Subjects who did experiments and their criteria.
- Materials & Methods, Characterization, Measurements

Data analysis Results and Discussion 1/2

- These two sections can be combined or separate
- Describe the results in detail and include a healthy, detailed discussion
- The order of figures should follow the discussion themes and not the sequence they were conducted
- Discuss how your data compare or contrast with previous results.

Data analysis Results and Discussion 2/2

- Include schemes, photographs to enhance the scope of discussion Avoid
- Excessive presentation of data/results without any discussion
- Citing every argument with a published work

- **11. Show us don't tell us.**

- Rather than telling the reader that a result is interesting or significant, show them how it is interesting or significant. For instance, rather than 'The large difference in mean size between population C and population D is particularly interesting," write 'Mean size generally varied among populations by only a few centimeters, but mean size in populations C and D differed by 25 cm.“.

- **13. Develop a strategy for your Discussion.**

- Many novice paper writers begin their Discussion section with a statement about problems with their methods or the items in their results about which they feel most insecure. Unless these really are the most important thing about your research (in which case you have problems), save them for later. Begin a Discussion with a short restatement of the most important points from your results. Use this statement to set up the ideas you want to focus on in interpreting your results and relating them to the literature. Use sub-headings that structure the discussion around these ideas.

- Note: Often 1 “results and discussion” section!

Conclusions

- Include major findings followed by brief discussion on future perspectives and/or application of present work to other disciplines.
- Important: Do not rewrite the abstract. Statements with “Investigated” or “Studied” are not conclusions!

Acknowledgments

- Remember to thank the funding agency and Colleagues/scientists/technicians who might have provided assistance References The styles vary for different journals. (Use ENDNOTE, RefWorks) Some journals require complete titles of the cited references Please check for the accuracy of all citations Supporting Information Include methods, analysis, blank experiments, additional data

Submission

- Read the finalized paper carefully.
- Check for accuracy of figures and captions.
- Are the figures correctly referred to in the text?
- Get feedback from advisor and colleagues.
- Provide a cover letter to the editor along with a brief paragraph highlighting the importance of this work and names of possible reviewers.
- Have all coauthors approve the finalized version of the paper Submit the paper online along with copyright form.

- **Responding to the editor:**

- **Acceptance without revision**
- You need take no further action untile the proofs reach you, except prehaps write a note thanking the editor.

- **Minor revisions requested ("accepted")**
- Consider the suggestions carefully, and if you agree that they will improve the paper, modify or rewrite sentences or sections as necessary. Retype any heavily corrected pages before you return the paper to the editor, but enclose the original corrected paper as well as the retyped copies. In your covering letter sent with the revised version, thank the editor and referees for their help and enclose a list of the substantial changes made in response to their suggestions; if you have rejected one or more of the recommendations, explain why.

- **Major revisions requested ("further consideration")**
- You will have to think hard if the effort is worth while. You may eventually decide that the paper is better as it is, and proceed to try another editor (another journal) in the hope that he will agree with you.

- **Rejection**
- If the editor says the article is too specialized or outside the scope of the journal, your best course is to send it to another journal, first modifying the style to comply with the instructions of that journal.
- If the article is rejected because is is said to be too long and in need of changes, consider shortening and modifying it according to the criticism – and then submit it to a different journal (if the editor had wanted to see a shorter version he would have offered to reconsider it after revision!).

- **Rejection (continued)**
- If the editor thinks the findings reported are unsound or that the evidence is incomplete, put the paper aside until you have obtained more and better information, unless you are sure that the editor and his advisers are wrong.

- Consider contesting the decision only if you honestly think, after considerable reflection and at least one night‘s sleep, that the editor and referees have made a superficial or wrong judgement. In this case write a polite letter explaining as briefly as possible why you think the editor should reconsider his decision.

Reviewers Revisions 1/2

- The manuscript is usually reviewed by 2-3 reviewers
- Reviewers point out deficiencies and/or suggestions to improve the scientific content
- Read their comments carefully. (If reviewer misunderstands a point, the point probably needs revision or additional support.)
  - Do not blame the reviewer for his/her misunderstanding!

Reviewers comments 2/2

- Be polite and respectful when disagreeing a reviewer's comment
- Include a point-by-point explanation of changes made in the text in response to reviewers' comments
- Once again, carefully read the paper for its accuracy in presenting the data
- Submit the revised version
- Once accepted for publication you should receive the galley proof within a month.
- This is one last chance to make any final corrections.

Rejected paper

- Do not get discouraged.
- Read editorial comments and discuss with advisor/students/collaborators.
- Find out how you can make this study stronger and acceptable for publication.
- Do not just turn around and submit the paper to another journal.
- Read carefully the comments and find ways to improve the scientific quality of the papers Carry out additional experiments and improve the quality of scientific discussions.
- Rejected papers can be resubmitted if and only the concerns of the reviewers are adequately addressed and new results are included. If you have questions, please feel free to contact the editorial office.

Points of Concerns

- What is the main question **addressed** by the research? Is it relevant and interesting?
- How **original** is the topic? What does it add to the subject area compared with other published material?
- Is the paper well **written**? Is the text clear and easy to read?
- Are the conclusions **consistent** with the evidence and arguments presented? Do they address the main question posed?
- If the author is disagreeing significantly with the current academic consensus, do they have a substantial case? If not, what would be required to make their case **credible**?
- If the paper includes tables or **figures**, what do they add to the paper? Do they aid understanding or are they superfluous?

- **4. Avoid abusing word forms.**

- Use words in the form that conveys your meaning as clearly and simply as possible.

- For example, consider the sentence, "The low rate of encounters was a reflection of population density reductions." versus: "The low rate of encounters reflects a reduced population density."

- **5. Do not use more words where fewer will do.**

- Do not use long words where short ones will do.

- For example:
- "utilization" vs. "use"
- "in order to" vs. "to"

- Do not use special words to make your writing seem more technical, scientific, or academic when the message is more clearly presented otherwise.

- **8. Pay attention to tenses.**

- Problems of inappropriate or inconsistent tenses are common in student writing. What you, or others, did in the past should be stated in the past tense (e.g. data were collected...."). Events or objects that continue to happen or exist can be described in the present tense (e.g., "in this paper, I *examine*..... The data reject the hypothesis that.....). Whatever tense you choose, be consistent.

- Be careful in using "might," "may," and "would" (as in "this might indicate that..."). They are frequently used as ways of weaseling out of making a clear statement.

- **9. Captions should not merely name a table or figure, they should explain how to read it.**

- A caption (figure or table heading) should contain sufficient information so that a reader can understand a table or figure, in most cases, without reference to the text. Very simple tables and figures may require only a title for clarity, and exceptionally complex ones may require reference to the text for explanation.

- Do not leave caption writing to the end of the project; write captions when you organize your Results section and it will help you write the text.

- **Language Issues – Summary/Conclusion**

- Be more or less specific
- Avoid clichés like the plague. They're old hat.
- Verbs has to agree with their subjects.
- Prepositions are not words to end sentences with.
- And don't start a sentence with a conjunction
- It is wrong to ever split an infinitive.
- Parenthetical remarks (however relevant) are (usually) unnecessary.
- Also, never, ever use repetitive redundancies.
- No sentence fragments.
- Contractions aren't good style and shouldn't be used in formal writing.
- Do not be redundant; do not use more words than necessary.
- One should never generalize.
- One-word sentences? Eliminate.
- Eliminate commas, that are, not necessary.
- Never use a big word when a diminutive one would suffice.

- **Language Issues – Summary/Conclusion**

- Kill all exclamation points !!!
- Use words correctly, irregardless how others use them.
- Understatement is always the absolutely best way to put forth earth-shaking ideas.
- Use the apostrophe in it‘s proper place and omit it when ist not needed.
- Who needs rhetorical questions?

- <u>Finally:</u>
- Proofread carefully to see if you any words out.

Auto Generating Papers

- https://pdos.csail.mit.edu/archive/scigen/
- http://thatsmathematics.com/mathgen/

Examples

Here are two papers we submitted to **WMSCI 2005**:

- **Rooter: A Methodology for the Typical Unification of Access Points and Redundancy** (**PS**, **PDF**)
  Jeremy Stribling, Daniel Aguayo and Maxwell Krohn

  This paper was accepted as a "non-reviewed" paper!
  - **Acceptance e-mail**
  - A strange **follow-up email**, along with our **response**
  - **Anthony Liekens** sent an **inquiry** to WMSCI about this situation, and received **this response**, with an amazing letter (**PS**, **PDF**) attached. (Also check out Jeff Erickson's **in-depth deconstruction** of this letter.)
  - With the many generous **donations** we received, we **paid** one conference **registration** fee of $390.
  - Our registration fee was **refunded**. See **above** for the next phase of our plan.

  We received many **donations** to send us to the conference, so that we can give a randomly-generated talk.

- **The Influence of Probabilistic Methodologies on Networking** (**PS**, **PDF**)
  Thomer M. Gil

  For some reason, this paper was **rejected**. We **asked for reviews**, and got **this response**.

We now state our main result.

Theorem 2.4. *Let μ be an anti-Leibniz–de Moivre isometry. Let α be an isomorphism. Then every super-nonnegative, multiplicative, von Neumann–Beltrami topos is Erdős, intrinsic, everywhere injective and compactly left-arithmetic.*

Is it possible to compute equations? The goal of the present article is to classify vectors. This leaves open the question of integrability. Now recently, there has been much interest in the extension of semi-Riemann groups. It is essential to consider that $\mathcal{J}_J$ may be sub-composite. This leaves open the question of completeness. Moreover, the work in [36] did not consider the negative case.

3. Connections to an Example of Perelman

Every student is aware that every isometry is Darboux. In future work, we plan to address questions of existence as well as positivity. Recently, there has been much interest in the description of unique, conditionally Riemannian, super-arithmetic categories. The work in [5, 42] did not consider the freely quasi-onto case. This reduces the results of [24] to an easy exercise. The goal of the present article is to study $\mathcal{R}$-Euclidean algebras. Unfortunately, we cannot assume that every sub-almost everywhere local, totally stochastic isometry is everywhere right-Brahmagupta and pseudo-canonically negative.

Let $\lambda_{\Lambda,Q}$ be a positive, anti-characteristic equation.

Definition 3.1. A subset Z is **contravariant** if $\beta_{\epsilon,H} \geq 0$.

Definition 3.2. Assume we are given a symmetric path V. An isometry is a **subset** if it is bounded.

Lemma 3.3. $\delta^{-8} \subset \tanh\left(-\infty^{-8}\right)$.

Proof. We proceed by transfinite induction. We observe that if Banach's condition is satisfied then $\mathbf{j}$ is isomorphic to χ. Clearly, if $u^{(\mathfrak{w})} < \emptyset$ then

$$\Omega\left(1\mathbf{j}, \mathcal{S}(X)|C|\right) \neq \overline{\pi^{7}} \times \cdots \cdot -\emptyset \to \frac{\mathcal{Q}_{N,\Phi}\left(-1, \ldots, \emptyset\chi\right)}{\exp^{-1}\left(\pi^{-2}\right)}.$$

By the locality of Maclaurin, freely Lambert ideals, if P is greater than κ'' then $I(\hat{\mathfrak{m}})^{-1} \subset \varepsilon\left(\infty e, \ldots, \infty\right)$. Obviously, if $\mathcal{Y}_{C,\mathfrak{x}}$ is equal to $\mathfrak{k}''$ then $\mathcal{N}$ is discretely

References

- https://www3.nd.edu/~pkamat/pdf/research paper.pdf
- https://authorservices.wiley.com/Reviewers/journal-reviewers/how-to-perform-a-peer-review/step-by-step-guide-to-reviewing-a-manuscript.html
- www.fb09.lehramtpc.uni-mainz.de/Dateien/Writing_good_scientific_papers_V2.ppt

Finished!!! You did it!!!