

Editorial Policy of the Journal of Unsolved Questions

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1 Aim and Scope

JUnQ is a new platform to gather null-result research. It is a medium to communicate projects, which just did not work, ambiguous data without exaggeration and unfinished investigations, where the desired outcome could not be achieved.

Our vision is to establish the publication of null-results as an important cornerstone for the advancement of knowledge and scientific understanding in all disciplines thus contributing to overcome biases and fraud in research. We want to achieve this goal by making “negative” and “null”-results from all fields of science available to the scientific community. This means that we publish scientific articles about projects where a research hypothesis is neither confirmed nor rejected, where a standard opinion in science cannot be reproduced or where the desired outcome was not achieved. Most research projects produce ambiguous results, in our opinion this should be visible in publishing media.

Furthermore, we want to foster interdisciplinary thinking by publishing short essays about open questions in science that have not been solved yet but that are of importance to the scientific community. We believe that for the advancement of science asking the right questions is just as important as finding answers.

Besides publishing articles and open questions, we want to create a platform for reflecting on the day-to-day business in science from a meta-perspective: Is the current scientific practice optimal for the gain of knowledge? How could we overcome prejudices that hinder objective judgement in research? What is the philosophical foundation of science? These are questions every scientist should ask him- or herself, we want to provide the facilities to do so through various formats (lectures, discussions, essays in the journal, contributions to other journals etc.).

2 Definition of Negative Results

For the Journal of Unsolved Question a “negative result” comprises two scenarios:

1. Falsification of a research hypothesis.

Example 1: A chemical reaction looks plausible on paper and existing theories suggest that it can be put to practice. However, experiment shows that this reaction does not work

Example 2: The theory of fluctuating symmetry states that animals with symmetric features are more likely to mate. However, this theory could not be reproduced in our study.

2. Ambiguous or inconclusive results

Example 1: A new type of chemical reaction was proposed but it could not be conclusively established whether or not it works. Sometimes the desired product was obtained but sometimes we did not get the desired product. We have investigated several factors that might influence the outcome but could not find the crucial one.

We have conducted two studies on fluctuating symmetry with two different species. For the first species our results show that this theory is valid. For the second species our results contradict the theory. More studies should be conducted.

3 Content of the Journal of Unsolved Questions

One issue of the Journal of Unsolved Questions includes

- A front matter part
- Articles
- Open Questions.

The website of the Journal of Unsolved Questions additionally publishes Questions of the Week as a weekly blog.

3.1 Front Matter Part

Each issue of the Journal of Unsolved Questions has a journalistic part that is mainly written by the editorial board. This part is usually composed with a specific motto or topic in view, which is formulated by the editorial board. Previous topics were:

- Honesty in Science
- Walls and JUnQtions: Communicating Science to the Public
- Science under Pressure
- Scientific Labour

External contributions are accepted for this part, too, as long as they match the topic.

Furthermore, the front matter part includes

- An editorial note written by one of the members of the editorial board.
- A selection of “Questions of the Week”, the Journal of Unsolved Questions weekly blog on <http://junq.info>. The Questions of the Week that are included in the issues are selected based on their popularity on Facebook and Twitter.

All contributions to the front matter part are reviewed by the editorial board to ensure the quality.

3.2 Articles

Articles are short communications about scientific projects with negative results. For a definition of negative results see above. The length of an article should roughly be 5 pages (including pictures and references) in our usual format. If the subject requires the article to be much longer or shorter, the authors should inform us about the reason at the time of submission.

Articles usually have the following outline:

1. Title and Abstract – The negative result should be evident from the abstract
2. Introduction – A short review of previous studies and a short explanation why the present study was conducted
3. Methods – Which methods were used and why?
4. Results and Discussions – What are the results? What do the results suggest?
5. Conclusion – A short summary of the most important points of the papers stressing what the negative result of the paper is

Sample articles can be found here: <http://http://junq.info/?p=1245>, <http://http://junq.info/?p=1103>

The articles are subject to peer review. Every article is assigned to one editor of the editorial board. It is the editor’s responsibility to find two suitable and competent referees and to handle the manuscript.

Articles should fulfill the following criteria to be accepted by the Journal of Unsolved Questions:

- Novelty: The negative result presented should not have been presented elsewhere (exceptions are conference abstracts, lectures, pre-publishing servers like arXiv, and Ph.D./Master/Bachelor theses)
- Reproducibility: The experiments or investigations presented in the article have to be reproducible. It is the authors’ responsibility to provide all information that enable other researchers to repeat the experiments or investigations.

- Validity of methods: The methods used in the article should be suitable for the problem that was studied
- Sufficient data: A sufficient amount of data should be collected by the authors to back up their claims
- Honesty and rigor: The research question, results, methods should be presented in an honest and rigorous way. This includes the discussion of possible shortcomings of methods or of data. To JUnQ it is very important that the presentation is honest. Do not hedge shortcomings, negative results, or possible mistakes, honestly discuss them!
- Importance of research question: The presented research should be important to other scientists in the field.

3.3 Open Questions

Open Questions are short essays (roughly two pages of length in the final format) about a research question that has not been answered yet. They are designed to appeal to a broad audience of scientists and laymen. Open Questions can be seen as a chance for authors to write about a topic that they are interested in but that is not from their field of research. Open Questions are subject to review by the editorial board. Each open question submitted to JUnQ will be assigned to one member of the editorial board. This editor is responsible for judging whether or not the Open Question fulfills the quality standards of JUnQ. If this editor feels like external advice would be helpful he or she is free to consult other researchers.

Open Questions should fulfill the following criteria to be accepted by the Journal of Unsolved Questions:

- Novelty: The Open Question presented in the manuscript should be novel, which means that the question and/or the way it is asked is not obvious and has not been extensively described before. Ideally, Open Questions should present an unconventional thought or an unconventional way of looking at a problem.
- Relevance: The Open Question should be relevant to the researchers in the field and optimally should be interesting for a broad audience.
- Clear and comprehensible presentation: Since Open Questions appeal to a broad audience, special care should be taken for the presentation of an Open Question.

4 Responsibilities of Editors

The editorial board consists of at least two graduate students, researchers, or professors from the Johannes Gutenberg-University. However, external researchers can become editorial members as well. Editorial board members are representatives of the Journal of Unsolved Questions and commit to the journal's philosophy and policy.

The formal procedure of admission to the editorial board is as follows: Every new candidate has to be recommended by an editorial board member. The recommending board member acts as an advocate for the candidate. The editorial board discusses the candidate at an editorial board meeting and then has to decide unanimously about the application.

Apart from committing to the journal's philosophy, every member of the editorial board has the following responsibilities:

- Attending editorial board meetings
- Handling manuscripts
- Reviewing Open Questions
- Regularly submitting Questions of the Week
- Contributing to the front matter part
- Find researchers who submit contributions to JUnQ
- Organizational support of JUnQ
- Keeping up cooperations, e.g., with detektor.fm

If an editorial board member repeatedly fails to complete his or her responsibilities he or she will be kindly asked to move to the advisory editorial board instead. The advisory editorial board is a committee of people that help JUnQ with its editorial tasks and that give advice to JUnQ. Members of the advisory board are not entitled to make decisions for JUnQ. Decisions about the content and organization of JUnQ are entirely in the hands of the editorial board.

Within the editorial board there is no formal hierarchy. However, one or two persons are selected every half year to take responsibility for the next issue. This person (the "responsible editor") is responsible to call for editorial meetings, for keeping the overview, and – most importantly – for getting the next issue together.

4.1 Editorial Board meetings

Editorial Board meetings take place every month. The responsible editor invites to the editorial meeting in due time. An editorial meeting can be attended via skype. Editorial board members have to regularly participate in editorial board meetings. If they have other commitments on the date of the editorial meeting, they should excuse themselves in due time.

4.2 Handling manuscripts

Every contribution sent to JUNQ is handled with absolute confidentiality. Each contribution is assigned to one editor that is most experienced in the given field of research. The editor is obliged to send a confirmation email to the authors upon receipt of the article informing the authors about the rough time frame of the review process and about the editorial policies. The editor keeps in touch with the authors and keeps the authors and the editorial board (especially the responsible editor) informed about the advance of the manuscript. If the two referees disagree on the quality of an article, the handling editor is entitled to make the final decision. In difficult cases the editorial board should be consulted. In handling manuscripts, editors are referred to our flow-charts about the editorial process.

4.3 Questions of the Week

Questions of the Week are short blog entries (roughly 150-300 words long) about interesting questions in science. Ideally, these questions should be unanswered, but they do not have to be. Questions of the Week are published every week on our website. Editorial board members take turns in submitting Questions of the Week. The editorial board in general and the responsible editor in particular is responsible for assuring the quality of the Questions of the Week.

5 Refereeing for JUNQ

Articles contributed to JUNQ are subject to a formal referee process. Every article is reviewed by two referees. At least one referee has to be from an institution that is not situated in Mainz. We kindly ask referees to send us their reports within three weeks. If referees are not able to review the manuscript we kindly ask them to tell us so as soon as possible. There is a review form that the referees are asked to fill out. Referees should keep in mind that JUNQ has slightly different criteria when it comes to judging the quality of a manuscript. We especially attach importance to honesty and reproducibility. We are aware of the fact that it is difficult to judge the quality of a negative result and we are thankful to our referees to take the special scope of JUNQ into account when refereeing manuscripts.