

About the Quantropy.org eprint repository

Stephen Lee*

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Abstract

Quantropy™ is an eprint repository which allows anyone to post and get feedback on a paper. I explain why people should think of posting their work to Quantropy and discuss the benefits this repository might bring

1 Quantropy

The Quantropy.org eprint repository is intended to fill the gap between informal discussion of an idea and the publishing of a paper in an academic journal. If you have a new idea which you think might be worth publishing, then it can be difficult to get appropriate feedback if you do not have an academic position. Quantropy.org is here for you to submit your idea, written up in the style of an academic paper. The hope is then that constructive advice will be offered on how you should move forward.

As well as advisors' comments, there is other information available on Quantropy about a paper and its author. On the abstract page it is possible to link to a blog or internet forum on which the paper can be discussed (there are no plans to allow general discussion on the Quantropy site itself - see below for the reasons for this). A paper can be marked as a commentary on another paper in the repository, in which case there will be a link on the abstract page of each paper to the other. It is also possible to add a link to supplementary material, for instance data or a computer program on the author's website. The user page lists other papers an author has deposited in the repository and can have a link to the author's website. I feel that this information is important for those reading your work so that they can put it in context, and judge whether or not a paper worth reading. In particular it will help advisors to judge what advice is appropriate. If you don't have someone whose job it is to look at your work, then anyone looking at your work deserves a lot of context, and in particular should be able to see the comments that others have made about your work.

All papers are to be submitted as pdf files. This might be slightly more work for the author, but I feel it is better for the readers. In particular a properly laid out pdf document is easy to scan through to judge whether it is worth reading in more detail.

Each page of the repository also has a list of related books at the right of the screen. On the abstract page the author can list any books referenced in the paper and other books that are relevant to the topic. Advisors can list books relevant to their advice. On the user pages, members can list books they find interesting, and in particular books which they have written.

2 So you've got this idea...

In this section I look at some of the alternatives you have in putting forward your new idea.

*stephen@quantropy.org

2.1 Carry on studying

One piece of advice you may well receive is that you need to learn a lot more before you think of doing original work. While there is much in favour of this point of view - you probably need a doctorate to be able to do anything significant - I don't think that it's the whole story. Such a path can take many years, and it can be hard to see the point when there is no end in sight. Trying to come up with original ideas can be a strong motivation for your learning. If you were learning a musical instrument then you would expect to give performances and maybe even trying to compose something yourself while you were doing so. It would be silly to feel you had to learn on your own for years and years before you were qualified to perform. Why shouldn't the same be true for writing an academic paper. [1]

Mastering a subject, like mastering a musical instrument is likely to take 10,000 hours of study or more [2]. Such mastery is likely to be necessary to be able to quickly identify how a new idea fits into a subject, and to recognise ideas that are known not to work, but I don't see any reason to assume that such mastery is necessary for working on an original idea.

2.2 Discuss it before writing it up

You may also be advised to discuss the idea before spending time writing it up. The trouble with this is that if you start trying to talk about your idea, people will bring preconceptions of what you are trying to say and whether it is correct or not. To quote Wiiio's first law: 'Communication usually fails, except by accident.' [3]. It makes more sense to have something written up beforehand, so you don't get tangled up in trying to explain it.

2.3 Public rather than private

It is important for you to consider at this stage whether you want to make your idea public. Those people who put details of their lives on social networking sites presumably won't have a problem with this, but others might be more cautious about letting others see their work, especially if they are hoping to improve it. If it is something which might have commercial value, e.g. a patentable idea, then you will want to keep it to yourself until you have found out how to proceed, otherwise I think that it is reasonable to let the world see it. Making it widely available maximizes the chance that you will reach someone who is able to give useful advice. In addition, the advice given to you may also help other people who have similar ideas.

My assumption is that people will use their real names and give some information about themselves when they submit a paper to Quantropy, rather than simply being an anonymous username as is the case on many internet discussion forums. Keeping your identity secret won't mean that your paper will be rejected, but anonymous users are more likely to stay as a 'Member' rather than 'Full member', and so what they can do on the site may be less (in particular the facility to link to other sites). In the end I think it's more straightforward if people don't try to hide their identity.

2.3.1 Someone might steal my idea if I make it public

I sometimes see people with this worry, but it seems strange to me, since making your work publicly available with your name attached would seem to be the best way of preventing others from claiming that they thought of it. Indeed, I would recommend this prior to sending it to other people.

2.4 What to do with your paper

So, you've decided to write up your idea and make it public - how are you going to do this? Clearly you want some feedback, but how to get such feedback isn't at all clear.

2.4.1 Submit to an academic journal

This might seem an obvious option, since if your paper is accepted then it has the endorsement of peer review and if it is rejected then you should be told a reason for this. As I see it, though, there are several problems with this approach. Firstly, there are a large number of possible journals to submit to. Even if you have read papers related to your work it can be difficult to know which journal is most appropriate. Secondly, the feedback you receive may well not be particularly helpful in guiding your next move. Probably the worst problem is the time it will take, it may be some months before you get a reply, and so it may be years before you get anywhere.

Another problem is that the peer review system is by no means perfect[4]. Hawking's paper on black hole radiation was initially rejected [5], as was one of Peter Higgs papers on the workings of the Higgs boson as being "of no obvious relevance to physics" [6].

I've also come across cases where an author has had a paper accepted by a journal which is not subscribed to by many libraries. The copyright has been transferred to the journal and the author is not allowed to have a version anywhere else. Hence rather than making the paper available to a wider audience, publication in the journal makes it less accessible.

2.4.2 Discuss it on the internet

You might think that the internet connects you to so many people that you are bound to find someone who can give you feedback on your idea. Well, if you're lucky you may do so, but you may well run into the problem that there are lots of people who are willing to give advice, but few who have sufficient knowledge of a subject to give useful advice. People may know enough to realise that your idea disagrees with the accepted ideas, but not know enough to explain precisely what's wrong with it.

In addition, a discussion on an internet forum can easily turn into an argument, where you are trying to persuade other people of your point of view any they are trying to persuade you of theirs - in this sort of argument neither side usually learns anything. Even worse, you might be tempted to respond to criticism by giving modifications to your argument in the discussion, rather than modifying your paper. This rapidly descends into a total mess.[7]

2.4.3 Send it to someone you know

You may well know academics who work in the subject area of your paper, so surely you should see what they think. Well if you know them well enough then of course you should discuss what you are doing, but those who you don't know so well may be reluctant to get into what might turn into an open ended process of helping you. In addition, I wouldn't assume that just because someone works in a related area that they would have sufficient expertise to give useful advice on you paper. For instance, when I was at school I invented devices which broke the Second Law of Thermodynamics. It was several years before I came across someone who could tell me exactly why they wouldn't work.

2.4.4 Send it to an expert

You may think it best to send your paper to someone who has sufficient mastery of the subject to be able to give you useful advice. But such people are likely to be busy, and may not reply, or may give a standardised, non-committal reply. If they don't reply, how long do you wait before trying something else?

2.4.5 Send paper to lots of people, on the hope that at least one will read it

Spamming people like this seems to be the most direct way of getting yourself a bad name. It's a waste of effort if several people look at your paper and give the same advice, and they won't be pleased when they realise that this is what you are doing.

2.5 Other online repositories

2.5.1 arxiv.org

This may require endorsement, which gets back to the problem above of getting someone to read your work. And what then? arxiv.org has no mechanism for giving further feedback, but neither does it signal that your work has been accepted by the academic community.

2.5.2 philica.com

This has a requirement that those submitting papers have an academic position, although they do allow 'Independent Researchers' who have sufficient credentials. Quantropy.org tries to avoid this problem of having your work rejected on the basis of who you are - what you write in your paper is the most important thing.

Philica have a process of peer review, but I don't think that this is particularly useful. Any member is able to peer review an article, and so it does not represent the judgement of experts in a subject.

2.5.3 vixra.org

This is closest in spirit to quantropy, in that anyone is allowed to post a paper, but doesn't have any way of giving feedback to the author or any way of indicating which papers are likely to be worth reading.

2.6 Quantropy

I hope that I've persuaded you of the benefits of submitting your work to Quantropy, possibly as one of a number of options. My aim is that Quantropy will give you an answer to the question "where should I take it from here?".

3 The role of the advisor

Advisors should give advice to the author of a paper on how it can be improved. Now it may well be that the advisor thinks that the paper is wrong, but pointing this out can lead to a never-ending argument in which the author constantly comes up with new defenses. I am trying to avoid this, and so I would encourage advisors to try to imagine that the paper might have something going for it. The question is then not whether it is right or wrong, but why the paper is unpersuasive. Note that it is up to the author to make their argument as persuasive as possible. *It is not the advisor's job to persuade the author about anything.*

If someone (not necessarily an advisor) does want to argue that a paper is wrong, then this is best done by submitting a paper to Quantropy, which can then be linked to the original paper. (Of course, if its a case of pointing out an obvious error then this would be better done as an advisor's comment)

The following subsections give some examples of advice which might be given

3.1 General advice

These don't need any specific knowledge of the subject

- Are the spelling and grammar correct?
- Is the argument well presented?
- Does the paper have appropriate citations - in particular is a citation given for anything that the author is arguing against?

This raises the question: should something like incorrect spelling put people off reading an article, when it might contain an important idea? Well there's no point in fixating on minor errors, but for obvious errors which make it harder to read the paper, my answer would be yes. Readers need to be very selective in what they read, and errors such as this can signal a lack of care by the author. Also, the intention of writing a paper is that it is written once but will be read many times. On this basis it is important for the author to make extra effort to reduce the effort required by the readers.

3.2 Specific advice

The most useful advice will probably come from advisors who have knowledge of the subject area.

- Has similar work been published in the past? Whilst Quantropy does not insist on originality of ideas as a condition of acceptance, it is expected that the author should add citations to similar work.
- If similar ideas have been published in the past, then they may have been rejected. What arguments have been raised against them. The author should take such arguments into account in the paper.

3.3 Where to go next

The advisor may think that the work has potential, and give advice on:

- Improvements to the paper and ideas for further work
- Possible journals for publication

3.4 Who will be advisors?

Note that the advice of 3.1 could be done by anyone used to reading academic work, that of 3.2 would be better done by an expert, but could probably be done by someone who is experienced at searching academic literature. I think that of 3.3 does need an expert.

To begin with it will just be me giving advice, but I would hope to find others who are willing to do this. I'll try to make it so that giving advice takes up as little time as possible. Advisors will generally be those with an academic position who seem likely to give advice in the ways listed. In particular if you are an academic to whom people like to send their revolutionary theories, why not recommend that they submit them to Quantropy. That way, rather than feeling guilty (are you one of the $76 \pm 12\%$ [8] of professors who are reluctant to turn away such people?) about not answering, or else worrying about getting into an open ended argument about their work, you can spend just a short amount of time giving advice on their work.

4 Trisectors

Since Quantropy allows anyone to submit a paper, and you might be thinking that it will just fill up with junk. Well it may well get a lot of poor quality papers, but it is my intention to have ways for the reader to exclude papers below a given quality and only see what is worth reading. Also, it is hoped that the advice given will encourage authors to learn more about a subject and to improve what they have written. Some authors, however, may be reluctant to listen to advice - they like to think that they can do what no one else has done. One example is finding a ruler and compass construction for trisecting an angle, and I'll use the word *trisector* as a general term for such people.[9]

Will trisectors be a problem for Quantropy? Well the first thing to note is that Quantropy gives no opportunity to get into the sort of never-ending argument that trisectors seem to delight in. If they ignore the advice given, then that is it. Secondly, trisectors are going to try to publicise their work,

and Quantropy is an obvious place to submit it to (and if they don't do so then one wonders what they are afraid of). Those wishing to look at the work can then comment on it in a structured way, rather than spending time getting into an open ended argument. Thirdly, the idea of Quantropy is not just to tell authors that their work is wrong, but to show that such work has been tried in the past and the arguments which have been made against it. One would hope that trisectors might then move on to work which is more likely to have a positive result. If a well educated person has shown willingness to work for free, and to do so for years on end with little reward then one thinks they may well be able to make useful contributions.

5 Publication elsewhere

It is understood that some authors will be looking to have their work published in a peer reviewed journal, and may be worried that submitting it to Quantropy will prevent them from doing this. The intention is that this should not be the case, that submitting a work to Quantropy should be seen as the equivalent of academics discussing their work before it is published, rather than counting as publication in its own right.

It is true that top journals such as *Science* or *Nature* have a policy that authors of some papers should keep their work secret in the run up to publication, but my impression is that this is not the norm for publishing in most journals, for which such secrecy is not required.

Journals have differing policies on whether authors are allowed to have a copy of their paper online. The APS states the following [10]

'The author has the right to post and update the article on a free-access e-print server using files prepared and formatted by the author.'

which would appear to allow for a paper to be available on Quantropy. For those journals with more strict policies, it will be possible to delete the paper from Quantropy when it is published (but to leave a link on Quantropy to the published paper). There might also be cases where the advice given about a paper on Quantropy leads to the author producing a substantially different paper for publication, in which case it's hard to see that there would be a problem with the original paper remaining on Quantropy.

It's possible that at some time in the future Quantropy may have sections which are more like a peer reviewed journal, and that acceptance into one of these then that might be seen as publication, but these will always be clearly distinguished from the main part of Quantropy as an eprint repository.

6 Summary

Quantropy, then, is a repository where authors can submit papers in order to get feedback on how to take their work further. Many of the authors are likely to be those who haven't published work elsewhere, but I would hope that others would also consider submitting their papers to Quantropy, in cases such as the following:

- Academics who have published in one subject area, but think that they have something of interest in a different subject area.
- Those who think their papers have been rejected unfairly, and want to see what other people think
- Papers on topics which might not be published as they are in an area of research which isn't currently fashionable.
- Reworking of a result which someone else has published. Sometimes the best way to understand a new result is to work it out for yourself, and you may then think that your way of looking at it has new insights which would be useful to others

- Papers which, although they don't contain any new results, give a summary of the current state of a subject area.
- Papers written as part of an extended discussion, benefitting from Quantropy's rapid acceptance and the ability to link papers together.

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