

How to handle abuse of power by PhD supervisors: A workshop on early career researcher's needs.

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The scientific ecosystem is transforming. Following the so-called replication crisis since the 2010s (e.g., Macleod et al., 2014; Open Science Collaboration, 2015; Prinz et al., 2011), it has now become a widespread opinion that researchers need to shift their workflows towards more openness and transparency, in order to increase the trustworthiness of their work. These measures have been subsumed under the umbrella term 'Open Science' (Crüwell et al., 2019). While many initiatives have been proposed in this regard, parts of the discussion have also focused on how incentive structures at institutions need to be changed (e.g., Begley et al., 2015).

This rapid, ongoing culture change in science, combined with the inherent dependence of PhD students from their supervisors, provides a lot of potential for conflicts. The brief report presented here is the result of a workshop that was held at the Berlin Early Career Researchers Conference '(In)Credible Research – for Credibility, Integrity and Reproducibility of Research' on 29 October 2020. In the workshop, 9 early career researchers from different Berlin universities (who wished to remain anonymous due to the sensitivity of the topic) discussed with the author about possible conflicts that can arise with supervisors. While the workshop slides focused especially on scientific conflicts, like supervisors asking PhD students to do p-hacking, not allowing them to share protocols, data, or preregister their study, or data fabrication, most of the discussion with the participants revolved around more general abuse of power, like the pressure to publish from their supervisors. The workshop aimed at providing tips and hands-on guidance how to handle these conflicts, but also at discussing what kind of system participants would wish for that provided them with tools and ability to prevent, or to better handle, any conflicts. A Google Doc was created for this purpose.

The original Google Doc, as well as the workshop slides, are available at <https://osf.io/2fm4c/> – below, participants' needs, wishes, and general comments regarding a better system and culture are summarised.

Changes in universities' regulations

Less dependency from supervisors. The participants mentioned the triple dependency from their supervisors, who also act as employers and evaluators of the thesis, which creates a huge power imbalance. Some universities have already taken measures in this regard, by extending supervisory committees, with up to three members. One participant pointed out that the researchers on the supervisory committee should not be linked to the first supervisor. Also, it might be a feasible solution to have the thesis evaluated by different people than the supervisors.

Doctoral agreement needs binding force. A doctoral agreement is standard at institutions, and often outlines responsibilities of the PhD students as well as their supervisors. However, participants noted

they know no means to actually enforce the rules. They would like to be able to turn to some institution – maybe the Office of Doctoral Studies – in case the agreement was violated. One participant proposed a platform to file anonymous complaints about supervisors.

Mandatory training and code of conduct for supervisors. One participant suggested that PhD supervisors should receive mandatory training. As a best practice example, the Amsterdam University Medical Centre already offers [courses for supervisors](#). After receiving Version 1 of this report, one of the participants added that there should also be a mandatory, binding code of conduct that supervisors have to sign.

Less pressure to publish. The rule to publish 3 publications in order to receive a PhD was criticised for lack of flexibility. During the workshop, it was discussed whether a more flexible solution might be feasible, in which 3 publications are standard, but there can be exceptions made if the PhD student and their supervisory committee as subject matter experts feel a different number is feasible (for example, one publication for a large, three-year project).

More protection for PhD students in case of conflict. While practically all Good Scientific Practice Guidelines state that the people who bring up a conflict should be protected from retaliation, reality might not always work this way. Participants pointed out that confronting a conflict might be especially dangerous for international students who might not only lose their jobs, but also their visa. One participant stated that the system protects renowned supervisors, since they become untouchable. The regulations need more concrete examples of how people are protected in the case of conflict.

Mandatory Registered Reports. Registered Reports are a new type of publication format, in which researchers do not submit a paper of a completed study to a journal, but instead a full protocol including an introduction, methods section and statistical analysis plan. This plan is then peer-reviewed before the start of the data collection, solely based on the relevance of the topic and the soundness of the methods, and the journal obliges to publish the finished study regardless of the results. Thus, Registered Reports limit researcher degrees of freedom and tackle publication bias. After receiving Version 1 of this report, one participant suggested that making Registered Reports a required, or at least highly suggested, part of the PhD could be a great opportunity to bring participants and their supervisors in touch with open and responsible research practices.

Education. Open and reproducible practices in science require a lot of learning. After receiving Version 1 of this manuscript, one participant proposed that education about these practices should be a mandatory part of the PhD – or at least, taking the effort of learning about these practices should be supported by supervisors.

Individual comments by the participants:

- *The triple dependency from your supervisor has to end - they should not be your supervisor, your 'thesis judge' and your employer at the same time*
- *I think PhD students are underpaid - the 65% contract system needs to end*
- *Making sure, the supervision is carried out by someone who is legally allowed to, such as PD's or Prof's - not Post Docs, who do not necessarily know how to give feedback, how to teach or how to lead PhD students.*
- *Have a protocol, everything discussed written down on a regular basis.
A supervision committee with your supervisor and other neutral persons*
- *Make supervision agreements mandatory and legally binding and incl. a code of conduct.(+ control instance actually checking whether agreements are met)*
- *Have a Phd advisory committee, where members are in no means dependent or befriended with the main supervisor/PI.*
- *Control structures that can actually impose changes/pressure on toxic PIs.*
- *More authority for ombudspersons and institutional committees.*

- *Possibility of anonymous reports/complains to the employer of the PI?*
- *Who protects us in case of violations of the supervisory contract? I had the experience that no can enforce that, the promotion office certainly would not help back then. [this remark was made in the call and then transcribed]*
- *Mandatory training for supervisors.*
- *Not having the PhD be contingent upon number of publications in set amount of time,*
- *The pressure of publication from supervisor and the need to meet the graduation criteria*
- *I think the biggest problem is despite regulations and mentoring contracts etc if a conflict occur and you start to act against that conflict without any support you will most likely just accept the situation because you have “just” three years to tolerate the conflict*
- *I think to a certain extent it does help us to deal with conflict, however as far as I have saw and experienced, the situation might get better for a short period of time and then it gets even worse, and we get backlash from the supervisor. Also, as an international student, it is actually more difficult, we always have to worry that the supervisors may terminate our contract, or even if we decide to leave, we need to face the consequence that we have to go back to our home country.*
- *In what I have experienced so far, I do not trust any of the mentioned institutions. If the PI is untouchable and gets away with everything, and none of the people that would have the connections and potentially power to do something against his behavior actually want to go the extra mile to stop him, there is nothing one can do. In the face of the massive power imbalance and dependence on your PI (thesis, future, project, job) I/we felt very powerless and left alone. At one point you just resignate and try to stay below the radar and get out as quickly as possible. When it comes to international students this becomes even more problematic, since they depend on visas.*
- *I think for severe violations (e.g. fraud) it would be pretty clear where to go now (e.g. ombudsperson). I feel a bit more unsure about minor interpersonal conflicts because they are in a “grey area” where going to an official person/making an official complaint would be or at least would feel inappropriate. Resolving them requires confronting the conflict by talking it out, which is sometimes not an easy thing to do.*
- *I feel like making PhD students start their PhD project with a Registered Report would go a long way towards solving a lot of these problems. [...] I don't think it should be an obligation, but Registered Reports seem like such a good way to steer researchers and supervisors in the right direction and make them consider aspects of responsible research (and what it involves to implement them) from the get-go.*
- *[...] implement a code of conduct for supervision (which could also be used elsewhere).*
- *As mentioned in the document, ECRs also face additional pressure when having to demonstrate the added value of OS practices (e.g., even when it delays the project). Not only that, if they don't have much support they might also have to teach themselves how to implement OS practices. To me, this highlights the need for more education of OS practices at higher levels (in addition to changing reward and incentive structures of course). There needs to be some recognition of all the knowledge ECRs need to gain to be able to put these responsible research behaviours into practice.*

Changes in the general research culture

A culture that allows for mistakes. The participants noted that lack of funding and pressure to produce positive, publishable findings lead to experiments having to work on the first try. This, in turn, leads to a toxic work environment where mistakes would rather be covered up than disclosed. The participants wish for a system in which mistakes can be publicly discussed, and in which there is less pressure to produce positive results at a rapid pace.

A culture that appreciates the needs of PhD students. Some other comments focused on the general research ecosystem, in which PhD students are often underpaid and generally regarded as cheap workforce. They are under constant pressure to publish – not only to meet the graduation criteria, but also to meet their supervisor’s needs to publish – and their supervisors spend very little time and energy on them. The participants wish for a culture of support, where the success of their thesis is a priority of their supervisors.

Individual comments by the participants:

- *one with more transparency - and with an trustful atmosphere where you can speak off your mind freely*
- *When the experiment is not working or not as expected, the supervisor start to doubt your capability and contribution, sometimes even insult you*
- *Place for mistakes and allow to share them somehow*
- *The idea that “There are no space for making mistakes, because the resources are limited”*
- *Accepting null results as valuable results, not just positive results*
- *Should the resources be more fairly distributed?*
- *Supervisor sometimes expects unrealistic “experiments”/”studies” - sometimes not even their fault, but if PI on 5+studies simultaneously, they lose sight of what is actually feasible in the realm of a PhD (~3 years, funding, etc*
- *The pressure of publication from supervisor and the need to meet the graduation criteria*
- *Encouraging culture, support of ECR, less competitive behavior from supervisor*
Making sure that finishing the PhD has highest priority for the team, and is not slowed due to other interests of the supervisor (control instance).
- *We need to be seen as proper colleagues, not just “slaves”*

Changes at funders and publishers

Journals. The participants also pointed out that not only the institutions should act. Journals should be more demanding about transparency of the research, which would save PhD students a lot of discussions with their supervisors. As stated before, the pressure to present positive results was mentioned, too.

Funders. One participant discussed the role of funders, which in some cases create great pressure to publish quickly in order to secure funding in the next round.

Individual comments by the participants:

- *Incentives for open science, e.g. by journals demanding to put your data open access as a requirement for publication, this makes it more likely that the PI will support open science practices*
- *Accepting null results as valuable results, not just positive results*
- *Not so much pressure by grant agencies to publish fast (i.e. potentially lower quality) in the current project in order to get support for the next funding round*

Further comments

Better networking. Participants pointed out the crucial importance of networks. They felt that PhD students should be better connected, something which this workshop (and the conference in general) explicitly aimed at.

Individual comments by the participants:

- *I think an overwhelming majority of ECR's would agree on the points discussed and listed, and for some reason, politics and bureaucracy do not address these issues although they are clearly so prevalent... how can we get involved enough to make a difference or who speaks up on our behalf?*
- *I guess a support network is really crucial. Sharing experiences with other PhDs might also be helpful in situations where you feel "powerless". Maybe one step would be to connect PhD students better, also across labs.*

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