

Hello, welcome everyone to this chapter on open research. We'll start with a brief introduction. In this course, you'll see my colleague, Niamh MacSweeney, and myself Laura Klinkhamer. And we are going to take you through some open research ideas and concepts. In these next couple of videos. We're both final year PhD students at the time of recording this. And Niamh and I were both involved in the setting up of the Edinburgh section of the ReproducibiliTea organisation, which is a journal club that deals with open research topics. So if you want to have a look at what the organisation is doing now, now it's run by new volunteers. You can have a look at the Twitter page @Edinburgh_Tea. And it's also part of the Edinburgh Open Research Initiative, which is another grassroots initiative for open research at the University of Edinburgh. And if you want to have a read through, of they're doing, please have a look at the edopenresearch.com webpage. And these are our contacts if you have any more questions for us after this course. So let's start with a little bit of context of why we would be discussing open research. So you might know that there was a what's commonly called the replication crisis in psychology. So in the early 2010s, people were trying to, on a larger scale, replicate some of the findings that were becoming taken for granted in Psychology research. And they actually found that quite a lot of the research conclusions and results, they didn't replicate very well. So this caused some concern for also the validity and the utility of the methods that people were using. And then this became a more widespread methodological crisis. So not just in Psychology anymore but other fields started to look more critically at their own research practises too, and one common factor among all these fields is this pressure to publish or perish as a researcher and particularly to publish significant findings. So often, in the more traditional statistics, you find that requirement for the p-value has to be 0.05 or less. And which is quite an arbitrary thresholds some would argue. But it often means, or it has meant, at least in the past, whether you can publish your work or not. And of course, if you put people under this kind of pressure, people start to develop strategies to comply with the kind of research that is demanded by the publishers. Because you need the publications to promote, to grow in your work and to get promotions, to get grants. So you need a strong record of publications. So of course you try and adapt yourself to the pressure so you can get these publications and typical behaviours that occur in the research because of this pressure are p-hacking, which basically is trying things until you find a significant result and then you only report that result. And also typically you'd pretend that that's the only way of analysing you did to, to, to find that to answer your research question in a certain way. Another common thing is HARKing. So that means hypothesising after the results are known. And that's basically making a hypothesis that fits the results. And presenting that as if this was the hypothesis you were going to test all along. Which is nicely illustrated by Dirk-Jan Hoek, as you can see on the right there. So, you can start to think, what does this mean for the quality of research? And also, very importantly, how does that kind of research impact society? What, what are we really striving towards and what does this mean for, for research as a public good for the society? Are we - How responsible is it also for researchers and the research system to behave in this way, to encourage these behaviours. So that's kind of a general bit of context and some framework to, for you to think about while we're going over some of these concepts because the open research movement emerged as a response to this crisis, you could say. So, what do we mean when we talk about open research? You might have come across several similar terms. Open science, open scholarship. They all have subtle differences, particularly about the kind of fields that they speak to. Open research is the one that we've used the most and that we'll use in this course. But please understand that it's similar to these other concepts. And what does that mean? It's kind of an umbrella term for lots of different movements and things occurring right now in research. So one of the most commonly associated terms is open access. And you might have heard of open access publishing. So that basically means that you're removing the paywalls for published research so that people don't have to pay or have to be associated with a university with a licence to be able to access your research so

that it's actually accessible to the people all over the world. But it's much more than that. It's also sharing and opening up other parts of research. Your methods and your data. For instance, your methods could be shared also through electronic notebooks that are maybe openly accessible and your data. The key principle around all these things is the transparency of research, but also the accessibility of research is very important. So, for instance, equity, diversity, and inclusion are also very important in open research because the research products don't just need to be accessible for everyone. But the practise of doing research needs to be accessible for everyone as well. And there are some also some practical terms associated with open research. So for instance, registered report and preregistration. Those will be talked about by Niamh quite extensively, so we'll leave those for now. Preprints are ways of publishing research that still has to go or maybe hasn't gone through peer review (yet). And all of it has to do to some extent with making research more accessible and transparent. And the last one I will point out, is the citizen science one which is another way of looking at research in an accessibility framework. So it doesn't just need to be, not only the products, again, need to be accessible to the public and to everybody, but also it's important to incorporate people's ideas and not just the ones of general civilians, but also other stakeholders, companies, institutes, organisations. Everybody needs to be able to have access in a way to research and to be involved in it. These are some terms just to get things started. But if you want to have a look at some more terms that could help you maybe understand some of these discussions that you might come across. If you are interested, and you're going to look for more open research resources. I would recommend you go have a look at at the edopenresearch.com website. And there you will see a list of resources - here And there is a short list here also with some selected introductory resources, you can find some YouTube channels and videos. Some podcasts, if you're into podcasts, and those are just- there's a little, small glossary with some terms here. And for a much more extensive glossary, I would recommend you have a look here at the FORRT website. So the Framework for Open and Reproducible Research Training website. And if you go here, there is a very expansive glossary here with lots of terms here. So you can understand some of the discussions a bit better once you know a bit about all these terms. And we'll introduce some of these concepts in a framework of the three T's. So we will start with a video on Think before you do. Which basically means what it implies. Think before you do your research and think ahead of what can happen. This is particularly dealing with the pre-registrations and registered reports. And the next one will be more about Tracing your steps. So recording, documenting everything you do in your research planning and in your actual executions of research. So things like version control, taking notes. And the last one is a bit more general, about being Transparent: ways of communicating your research and opening it up to people. And also being transparent about the workflow of your progress - of your project what you were going to do at the beginning. How that maybe has changed while you were doing it- these kinds of things So we'll present you with a couple of suggestions for things you might want to implement in your own research. But we would like to encourage you to think of this as a kind of buffet where you can pick things as you like. and as they fit your research and the phase that you are in your other circumstances that you are in. So by no means is this saying- are we saying you need to start doing these things right now. Otherwise you're not doing a good job. It's very much a way of doing a little bit, little bits at a time. You familiarise yourself with new things. Maybe you get excited about a particular thing or you see really the benefit of something to try- Start with that first and then you can build from there. So please don't feel overwhelmed by all of the things that we'll throw it at you. Yeah, be selective about what works for you at this time. So we'll go into later videos and I'll see you later in the course.