



Data
Schools

Open and Responsible Research 5 Ethics Exercise

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Openness and RCR

Open Lab Books: Transparency in research practices

Sharing and openness: enhance transmission of values

Open Peer Review: Transparency in peer review leads to better dialogue and collegial behaviour

Open Access: Improves availability of research outputs

Open publishing: leads to improved citations, credit and collaboration

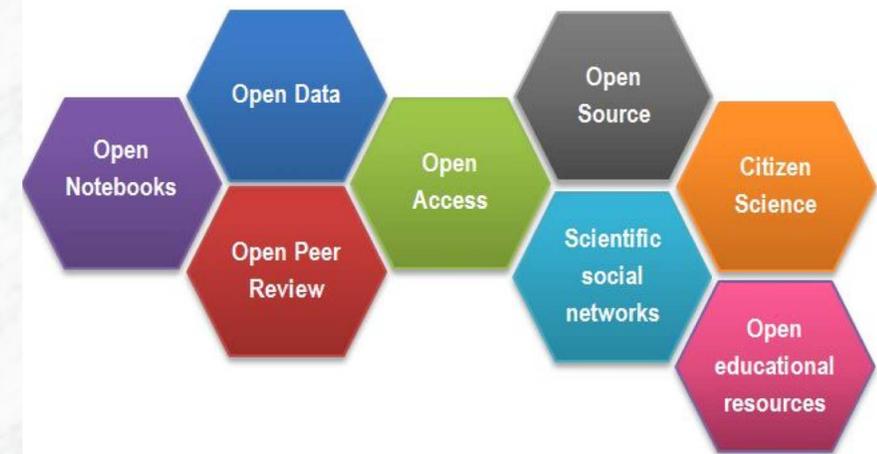
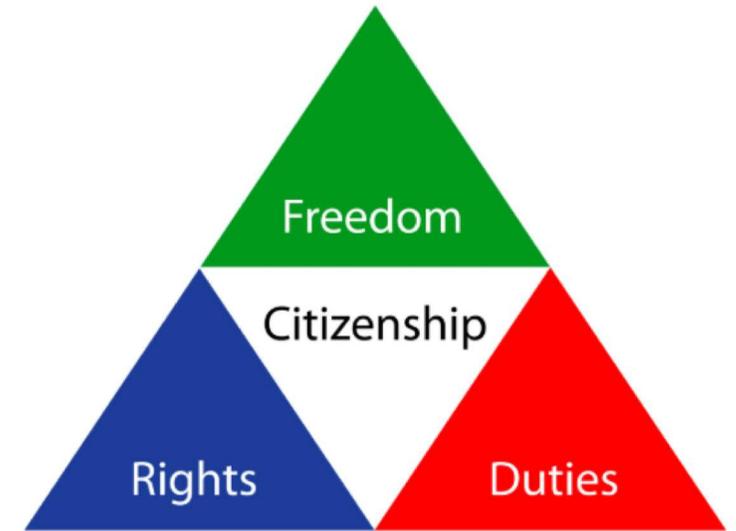


Open Data and Open Methodologies: Improve transparency and reproducibility of research

Open Science Tools: Improve collaboration

Open and Responsible Science Citizenship

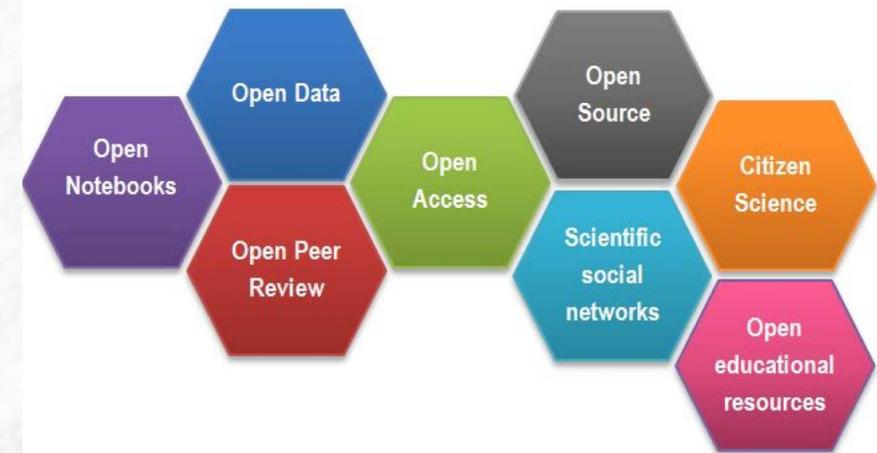
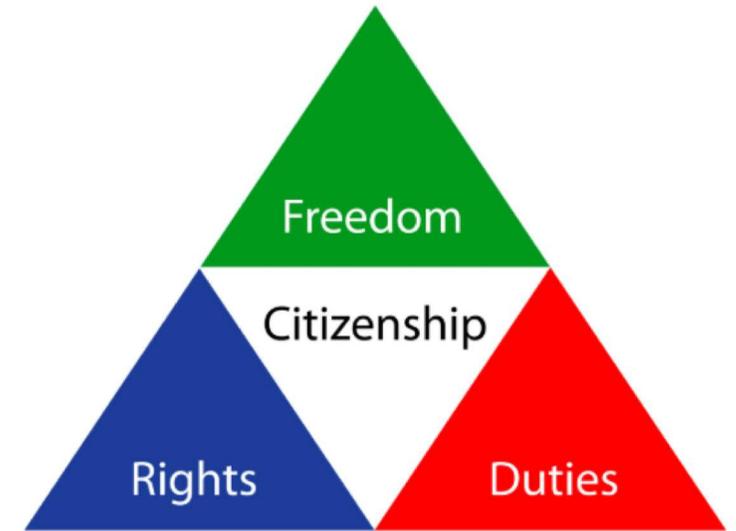
- Consider **ethics** in daily activities
- Contribute, safeguard and curate **community resources**
- Uphold and promote **community values**



Open and Responsible Science Citizenship

- Engage in discussions about the **big picture**
- Not only about your community of scientists, but society at large
- Technology affects knowledge exchange in all contexts
- Design of technologies responsive to societal desirability and needs

Not just being open/closed – you have to make sure that openness is conducive to just and flourishing futures



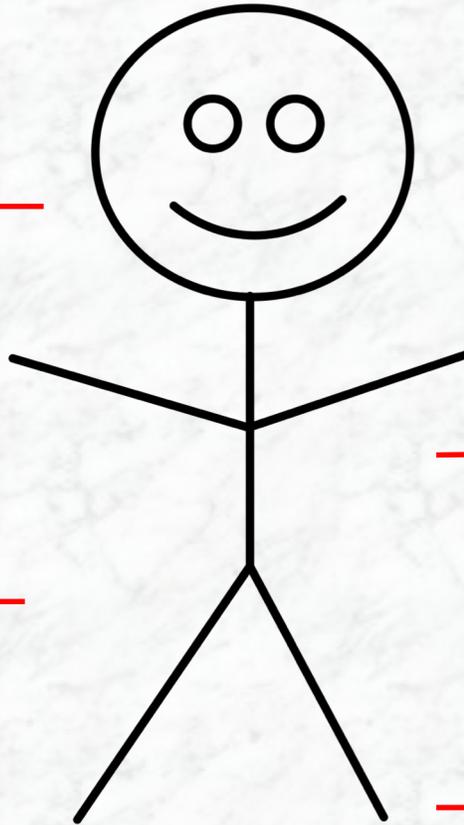
Tools for Responsible, Open (Data) Science Citizenship

Data science

- Practical skills
- Norms and values
- Infraethics

Data use

- Finding and using data
- Data re-use and attribution



Data management

- Norms and values (FAIR)
- Practical tools - RDM

Authorship

- ORCID
- Journals and licensing

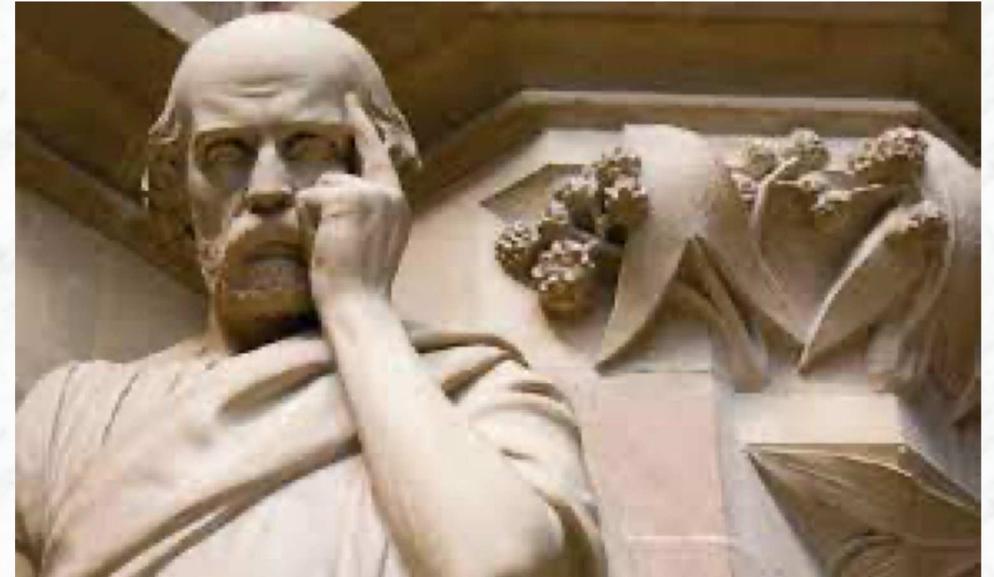
Ethics and responsibility

- Areas for activity

Openness, sharing, justice, beneficence

Learning How to be Open

- Being open is **not like** following a recipe
- You need to understand **how to be open**, depending on your context
- Understanding **specific challenges** can help you develop **resilience strategies**



Challenges are Helpful

- Openness is a journey **not an immediate** switch
- You have to find practices and tools that work **for you**
- Having **concerns** is normal
- Some environments are **more supportive** of open practices **than others**
- Recognizing the challenges of being open in your specific environment is a very important part of starting your journey towards openness

RCR, Open Science, and the Practice of Ethics

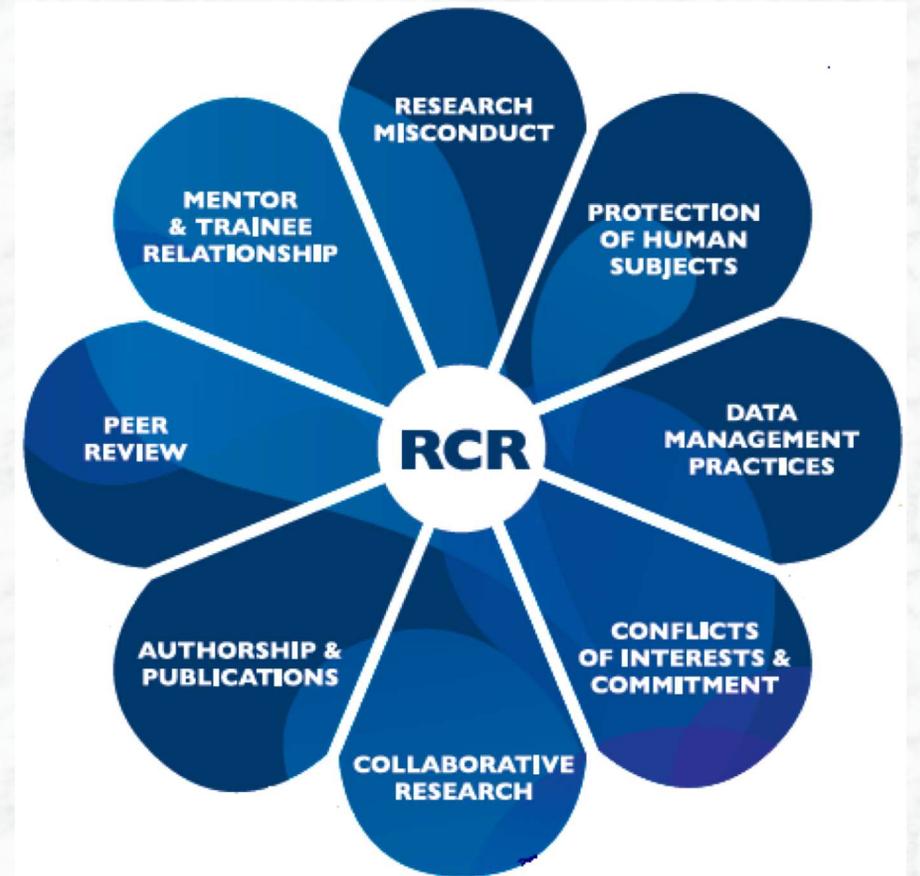
“Leader should ensure that opportunities are available to computing professionals to help improve their knowledge and skills in professionalism, in the practice of ethics, and in their technical specialties” (from ACM code)

The Daily Practice of Ethics

- Ethics is **not** a “top down” activity
- **Daily decisions** affect the openness and responsibility of research practice
- What code you use, what repository you store data in, how you credit contributors are all daily decisions that have **ethical implications**
- The goal of RCR training is **not merely** to comply with regulations
- Rather, it is to foster the **cultivation of traits or moral abilities** (virtues) necessary for **being open**

RCR, Open Science, and the Practice of Ethics

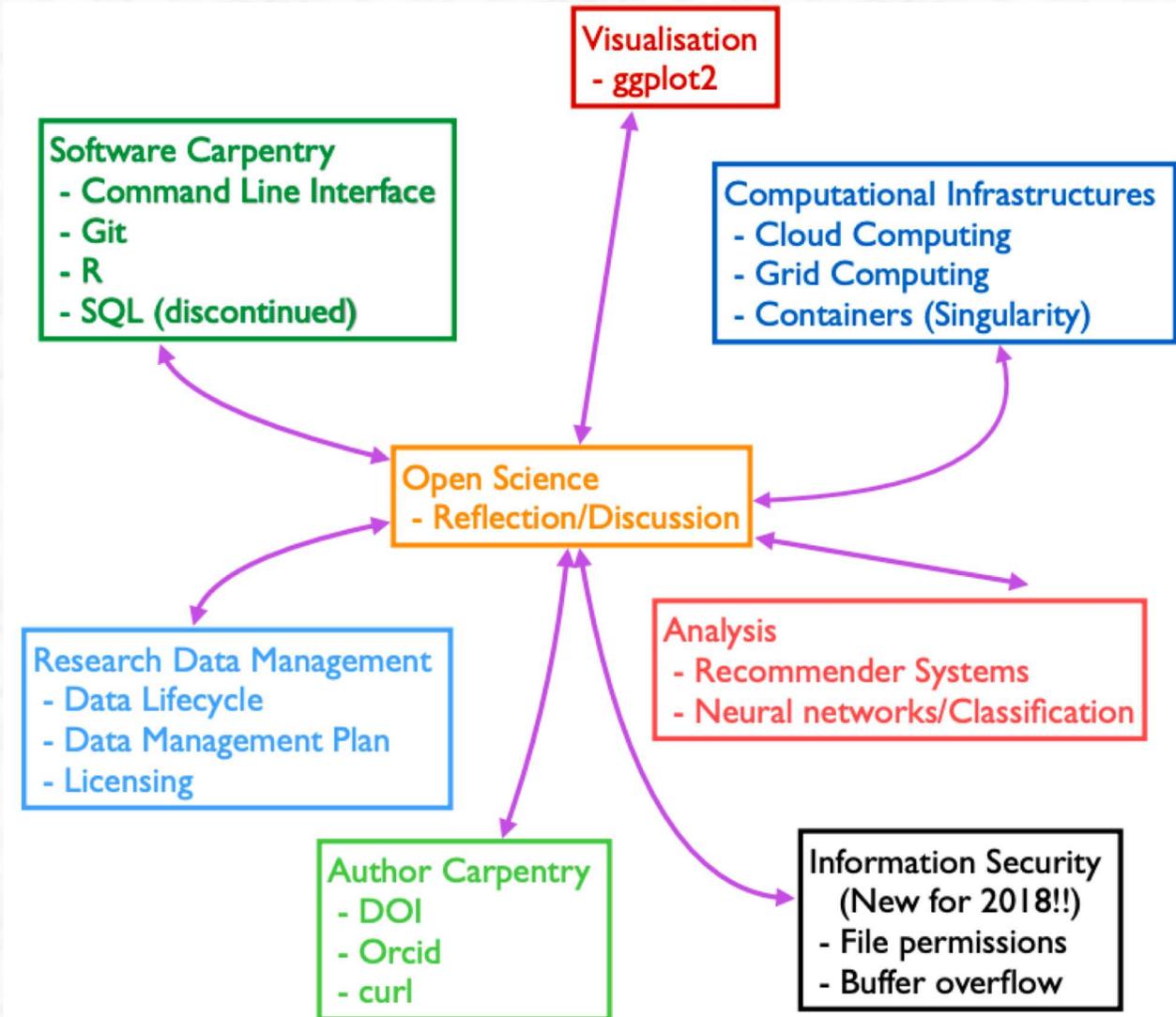
- During the summer school we will be having weekly **ethics exercises** that connect openness/ethics to the practice of data science
- These exercises aim to **cultivate RCR** in a context of Open Science
- By integrating RCR and Open Science you promote **data science as a flourishing activity**



Aims of Ethics Exercises

1. To show you how ethics is **integrated** into daily practice
2. Get you **familiar** with the types of reasoning that you will need to act openly and responsibly in research
3. Help you **connect good practice with resources** that will support you
4. Realise that **dialogue is important** and that you are not alone in having concerns and questions
5. Show you **how to become** an ethically robust researcher
6. **Connect** you to mentors and peers to help you on your journey

Ethics Exercises



How the Exercises Work

1. Presented with a problem/question/case study relating to **specific module** (ie. R, Git, ML)
2. To discuss the ethical concerns around doing the task **well/poorly**
3. Discuss some of the **resources** that can assist **with doing the task well**
4. Discuss how the actions fit **into bigger picture** - openness, responsibility, beneficence/non-maleficence

Hopeful Outcomes

1. Students feel **equipped to deal with ethical challenges** of open and responsible data science research
2. Students feel **able to promote open and responsible practices** in their own research environments
3. Class will have developed a **comprehensive list of resources** that address the challenges they may experience in their home environment
4. Students get **used to talking about ethics** and confident to reach out for support