Open research methods?

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- Reflections
- Daily practice
- Next steps
“I have begun to think that no one ought to publish biometric results, without lodging a well arranged and well bound manuscript copy of all his data, in some place where it should be accessible, under reasonable restrictions, to those who desire to verify his work.”

Francis Galton (1901), *Biometrika* 1:1, pp. 7-10.
What marks out modern science is not the conduct of experiments (alchemists conducted plenty of experiments), but the formation of a critical community capable of assessing discoveries and replicating results.

The Invention of Science: A New History of the Scientific Revolution, by David Wootton
What are (or should be) the key goals in opening up research methods?

**Quality** of research
- transparency
- reproducibility
- trustworthiness

**Impact** of research
- reuse
- findability, accessibility
- interoperability
- collaboration
What do we mean by research method?

“Organized and documented approach, for managing research resources and carrying out research in order to obtain research results.” (Finnish science vocabulary)

Role of infrastructures (virtual, physical)?
What do we mean by *open* research method?

**Degree, maturity & type of openness**
- Draft sketch → reproducible workflow → FAIR method
- Transparent → Reproducible → Reusable → Interoperable

**Culture** of openness
- Research method as a *process*?
- Standard in different fields?

**Regulation** of openness
- Opening up the workflow vs. its individual components?
- Role of IPR
Daily practice: opportunities & challenges

Culture of sharing
• responsible opening, management and use
• standards & best practices

Domain-specific standards & challenges
• differences between fields
• slowness in cultural change

Maturity & life cycle
• opening, maintenance, archival?

Resources and support:
• access and support / sustainable infrastructures and services
• rights, conditions & norms
Next steps & questions

1) is Open Science ready to become the norm in research?
2) how do we ensure an equitable transition to Open Science?

• Discipline-specific policies & guidelines?
• National policy work & international dialogue
• Merit & careers
• Evaluation & monitoring?