University of Groningen discussion paper transparent research environment/open science

What is open science? And how does it affect your research, your research methods and the impact of your results? Many questions arise about the realisation of the ambitions in the Strategic Plan of the University of Groningen to move towards an open and transparent research environment. Questions any researcher has to tackle sooner or later. The Research Strategy Committee\(^1\) (RSC) started a discussion just before the summer 2016 on the basis of the following discussion paper.

See also:

http://www.rug.nl/bibliotheek/services/openaccess/oa-nieuwsbrief/2016-10-discussion-paper

Purpose

The Strategic Plan 2016-2020 requires further elaboration on the theme of transparent research environment/open science by faculties and the University Board. Building on the strong emphasis on the opportunities of open science for innovation of European research\(^2\), this elaboration will contribute to the University Policy Agenda. Main question is how to transform the value of innovation & openness into practical and effective policies.

Introduction

The university wants to maintain its reputation in international, multidisciplinary research by creating a transparent and well-supported research environment. The Strategic Plan states that the UG will actively stimulate and facilitate this by implementing and practicing the principles of Open Research, Open Data and Open Access in our academic community. This entails support for disciplinary and cross-disciplinary research by an up-to-date an intensified e-science effort and IT infrastructure and support. It also requires the ambition to further develop coherent policies. At an European level, the current catch phrase “Open Science” is used to refer to this ambition. To reflect the trans-border nature of the transition towards open science, this discussion paper follows the main themes of the Amsterdam Call for Action on Open Science.

What is a transparent research environment/open science?

The transition towards open science is a worldwide change in the way research is done. Recently, during the Dutch presidency, initiatives and principles related to Open Research, Open Data and Open Access were brought together in a Call for Action on Open Science. It states that Open Science is about the way researchers work, collaborate, interact, share resources and disseminate results. A systemic change towards open science is driven by new technologies and data, the increasing demand in society to address the societal challenges of our times and the readiness of citizens to participate in research. In the Call for Action two main goals for 2020 are identified:
1. Full Open Access for all scientific publications\(^3\)
2. A fundamentally new approach towards optimal reuse of research data, in which data sharing and stewardship is the default approach for all publicly-funded research.

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\(^1\) The Research Strategy Committee is composed of the Faculty Board members for Research of each faculty. The Committee’s task and aim is to offer ideas and advise on how UG research can be provided with a concrete, feasible, widely supported orientation and design, and how this can be implemented. To this end the Committee members regularly consult their own faculties. The implementation of the Strategic Plan for the fields of research and valorization is one of the results of this.


\(^3\) A proposal for green open access was recently discussed in the committee research strategy of the UG.
This discussion paper focuses on the second goal. For data management the board of the UG initiated a three-pronged approach late 2013, involving: 1. quality control in relation to research data, data management and, where necessary, University-wide regulations for handling research data, 2. setting up a research data office by the library and CIT services, and 3. looking into legal aspects.

As a first step, the Faculty boards and directors of the SEP (Standard Evaluation Protocol) institutions were requested to develop a plan of action for a data management plan for their research institutions. The University of Groningen Research Data Management policy already recognizes the principle of optimal re-use of data, where it states that research data must be made openly available, unless ethical, legal or contractual obligations prevent this.4

Presently, in all faculties, the first versions of the institutional data management plans are being implemented. The transition to Open science, however, requires further steps both in discussion and practical outcomes. The discussion can be based on the main themes in the Amsterdam Call for Action on Open Science5, outlining a roadmap to reinforce Europe’s competitiveness in science. A selection of actions for research performing organisations forms the baseline of this discussion paper.

Proposals for strategies based on Amsterdam Call for Action on Open Science.

Change assessment, evaluation and reward systems in science

The Amsterdam Call for Action identifies changing incentives as an important action. Prestige and metrics now focus on publications. New national and international assessments should ensure timely dissemination of all research outputs in all phases of the research life-cycle. The ICT meerjaren plan addresses this issue as a need for alternative metrics.

Question: How to accomplish proper incentives and citation practices for an open science environment?

Improve insight into intellectual property rights and privacy regulation

Lack of clarity about criteria on openness of funders can hamper public-private collaboration during the transition phase. Also the rights of participants to protection of their personal data needs further thinking.

Current situation: Research funders play an important role in this transition. It is a new challenge for researchers to comply with their criteria, while maintaining optimal possibilities to work with third parties. Europe wants to lead by example and has installed a policy platform, which will look into recommendations about adaptation of the EU model grant agreement. Support for intellectual property is not adapted yet to new questions about re-use of data. Exemplary contractual clauses need to be identified to tweak research practices to achieve optimal re-use of data.

The new General Data Protection Regulation (GDPR) requires instruments (data protection by design and default, privacy impact assessments, privacy enhancing technologies and transparency) to be implemented at an early stage of the data life cycle. This aligns well with using data management plans. On a similar note, a register for oversight on the use of personal data needs to be embedded in the research practices and infrastructures used at the UG. The GDPR recognizes concerns about the rights of participants for medical and historical research and the rights of researchers on academic freedom. Privacy risks are relevant because of the trust by citizens in the university, also as participants in research. The role of ethical committees, although not yet fully established, is essential in the discussion about optimal re-use of data.

Questions: How has this conflict of interests between researchers and participants been addressed in your field so far? How can a better balance be achieved, and who can play a role in this process?

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5 http://www.eu2016.nl/documenten/rapporten/2016/04/04/amsterdam-call-for-action-on-open-science
Developing research infrastructures

It has often been suggested that Open Science requires a transition in research data management and in supporting IT infrastructure. The EU takes initiatives to set up a European Open Science Cloud. It recommends that research organisations set up or cooperate in (federal) e-infrastructures that are service oriented, financially viable and user-friendly. In the Netherlands expertise on data management is coordinated at a national level.6

Current situation: The University of Groningen has a longstanding experience in the set-up and management of complex and large data collection and infrastructural projects, for instance Target, Kiva, LifeLines, Lofar, Energysense. For these projects, data, IT infrastructures and expertise have been developed that can be reused in new situations. A network of different groups within the University have set-up facilities and services to support other researchers with data and IT solutions, amongst others, the Research and Innovation Support (RIS), the Genomic Coordination Centre (GCC) and the Trial Coordination Centre (TCC) at the UMCG, the Research Data Office (RDO) and the Clinical Research Office (UMCG) and several expert groups at the faculties and legal advice at the level of the University Board.

In spite of present IT solutions and data management expertise, the currently available services, structures and expertise still are fragmented, not optimally connected and are not easily accessible to all researchers. These shortcomings may hamper the institute-wide implementation of proper research data management and Open Science principles, delay compliance of the institutes to the current legislation, and could pose a reputational or financial risk for the institute due to privacy breaches or sub transparent work processes.

Questions: What roles do IT infrastructure, services and expertise on research data management, privacy protection, etc. play in your institute? Do you recognize your needs in the strategies and proposals in the ICT meerjarenplan? For what purposes is there a need for nationally developed training material f.i. for support staff and the training programs of the graduate schools?

Introduce FAIR and secure data principles

The University of Groningen Research Data Policy describes a set of characteristics of data7. These characteristics are essential for optimal reuse of data. Internationally the acronym FAIR (Findable, Accessible, Interoperable and Re-usable) coins the same characteristics.

Question: How to assess these characteristics and the ways they have been implemented by fall 2017?

Proposals for governance

As a first step before spring BO 2017, research institutes take stock of inspiring examples in their field. In an update of their institutional research data management plan, they present measures on how these examples support the transition towards ‘open science’ with the field of research for their research institute, also related to collaboration with (private) partners.

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6 https://www.lcrdm.nl/

7 accurate, complete, reliable, authentic and accompanied by metadata; securely stored with minimum risk of loss; registered in a Current Research Information System (CRIS); traceable; accessible and citable; satisfying legal requirements, criteria for ethically sound research, agreements in partnership agreements and conditions laid down by research funders; available for verification and further research once the research is complete and/or the researcher has departed.
The results of this process will be implemented in research data strategies before spring BO 2018, including plans on awareness, infrastructure etc.

Questions: Is there a need for an evaluative discussion paper to ensure the alignment of institutional policies and services in fall 2017? Can you identify good initiatives and barriers related to the costs of sharing data and for long-term preservation of research data?