

CWTS open science policy

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Introduction

Open science currently is one of the most prominent topics on the Dutch and European science policy agenda. This document presents the open science policy of CWTS. This policy applies to the activities of CWTS. It does not apply to the activities of CWTS BV. We note that some activities of CWTS may also be subject to other open science policies, such as policies from Leiden University or from research funders.

General principles

Open science is a broad topic, making it difficult to develop an open science policy that covers all aspects of open science. The CWTS open science policy therefore starts from a number of general principles. For certain aspects of open science, we translate these general principles into more specific policies. For other aspects, we refrain from making this translation. In these cases, the general principles can be seen as guidelines that indicate in general terms how issues related to open science should be handled.

The CWTS open science policy is based on the following five general principles:

1. *As open as possible, as closed as necessary.* Openness aligns well with the mission and the ambitions of CWTS, and in general we therefore aim for as much openness as possible. However, openness is not always possible or desirable, for instance because it may violate legal or ethical norms. We therefore commit ourselves to act in accordance with the well-known motto 'as open as possible, as closed as necessary'.
2. *Openness is not always easy.* Being open may require changing established ways of working and making additional efforts. Opening things that used to be closed may also give a sense of discomfort. Being open is not always easy, but we do not shy away from doing difficult things.
3. *Openness takes time.* Moving toward more openness requires significant changes in our ways of working. These changes cannot be realized overnight. We therefore allow ourselves some time to become more open.
4. *Openness is a joint responsibility.* Being open is a joint responsibility shared by all of us, from individual researchers (both junior and senior), to supervisors, project and group leaders, and CWTS management. In particular, CWTS management has a responsibility to support CWTS staff members in adopting open ways of working, and CWTS management should acknowledge the value of openness in its approach to recognition and reward. In the case of PhD candidates and junior researchers, supervisors have an important responsibility to provide support in adopting open science practices.
5. *Openness should not become a straitjacket.* Openness is a core value of CWTS. However, sometimes trade-offs need to be made between openness and other values. In specific cases, CWTS management may therefore provide room for exceptions to the CWTS open science policy.

Based on the above general principles, we now present the specific policies of CWTS on open access (OA) publishing, open data, and open source software. We also discuss the relationship between CWTS and CWTS BV from an open science viewpoint.

Open access publishing

- All journal articles published by CWTS researchers must be made openly accessible. This can be done by publishing them in an OA journal ('gold OA') or by depositing them in a repository ('green OA'), either the institutional repository of Leiden University or a preprint repository such as SocArXiv, arXiv, or bioRxiv. In the latter case, articles must be openly accessible in a repository at the time of publication in a journal. Embargoes are not acceptable. Preferably, the final accepted version of an article should be made openly accessible in a repository. If this is not allowed, the original submitted version of an article may instead be made openly accessible.
- When an article is submitted to a journal, depositing the submitted version of the article in a preprint repository is strongly encouraged.
- Publishing in journals that are owned by the scholarly community (e.g., through scholarly societies) and that adopt responsible publishing practices (e.g., open metadata) is encouraged.
- Publishing in journals that adopt deceptive publishing practices ('predatory journals') must be avoided.
- To publish in an OA journal, an article processing charge (APC) may need to be paid. APC payments from project funding require permission from the CWTS project leader. CWTS does not impose a maximum on these APC payments. APC payments from the basic funding of CWTS require permission from a CWTS group leader or from CWTS management. CWTS contributes at most € 1200 from its basic funding to pay the APC of an article. If an article is co-authored with other institutions, each institution is expected to pay its fair share of the APC. In general, this means that CWTS pays in proportion to the number of authors from CWTS. For instance, if an article has five authors of which three are from CWTS, CWTS pays 60% of the APC. CWTS does not use its basic funding to pay APCs for OA publishing in hybrid journals.
- Making conference papers, book chapters, and books openly accessible is strongly encouraged. For these outputs, practices for OA publishing are less developed than for journal articles. CWTS therefore does not yet have a specific policy for OA publishing of these outputs.

Open data

- Data must be made as open as possible and be kept as closed as necessary. Data may be kept closed to protect intellectual property, to protect people's privacy, to prevent harm, and to meet other legal or ethical requirements. Data may also be kept closed if opening the data would require a disproportionately large amount of effort.
- If data resulting from a research project can be made open, the data should in general be opened as soon as possible. In many cases, this means that data is opened when an article in which the data is used is published. In certain cases, data may be opened at a later time, for instance at the end of a research project.
- It is strongly encouraged to make data compliant with the FAIR (i.e., findable, accessible, interoperable, and reusable) principles as much as possible. This applies both to open and to closed data.

- Data must be managed in accordance with the CWTS data management guidelines. According to these guidelines, each research project must have a data management plan. This plan states whether data will be made open or not. If data will be made open, the plan states which data will be made open and how and when this will be done.

Open source software

- CWTS puts significant efforts into software development. A distinction can be made between two types of software developed at CWTS:
 - Type 1 software: Software that in itself represents a significant scientific advancement (e.g., the Leiden algorithm software).
 - Type 2 software: Software that is instrumental to the research of CWTS, but that does not in itself represent a significant scientific advancement (e.g., software for parsing data from a bibliographic database).
- For type 1 software, the source code must be made openly available. An appropriate open source license (e.g., GPL, LGPL, or MIT) is chosen on a case-by-case basis.
- For type 2 software, the source code may or may not be made openly available, depending on what seems best for the sustainability of the software. On the one hand, making the source code openly available may enhance the sustainability of the software because others outside CWTS may contribute to maintenance and development of the software. On the other hand, keeping the source code closed may enhance the sustainability of the software because it may make it easier to generate revenues from the software. These revenues can then be invested in maintenance and development of the software.

CWTS BV

- Although CWTS and CWTS BV are separate organizations, they have a close relationship. They are both part of Leiden University, and they both have the same director. The aim of CWTS BV is to support and strengthen the research of CWTS by using the expertise of CWTS in applied projects carried out for clients. These applied projects provide valuable input for the research of CWTS, and they allow ideas developed in the research of CWTS to be tested in practice. The revenues of projects carried out by CWTS BV partly cover the salaries of researchers at CWTS.
- Clients of CWTS BV often want projects to be treated confidentially. The activities of CWTS BV are therefore not subject to the CWTS open science policy. Nevertheless, openness and transparency are important values for CWTS BV. In the projects it carries out, CWTS BV aims to be open and transparent about its way of working. CWTS BV also encourages clients to be open and transparent, for instance by allowing reports produced by CWTS BV to be made publicly available or by allowing data resulting from projects carried out by CWTS BV to be used in scientific publications.
- In certain cases, openness in the research of CWTS may limit the opportunities for CWTS BV to generate revenues. In these cases, CWTS remains committed to its open science policy. However, within the space provided by this policy, CWTS will strike a balance between full openness on the one hand and revenue opportunities for CWTS BV on the other hand. This may for instance mean that for some software (i.e., type 2 software; see above) the source code will not be made openly available.