# The future of Open Science asks for a common understanding

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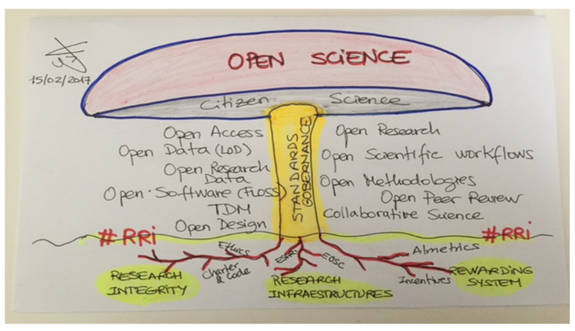
## A definition is missing

*Definition [of Open Science] remains vague, probably because objectives are vague... (Aspesi, COASP 2014)*

*... there is no single, accepted, unified definition or vision of 'open science'... (Tennant, 2018)*

*... there is a lack of awareness about what Open Science is, mainly due to the fact that there is no formal definition of Open Science ... (Vicente-Saez & Martinez-Fuentes, 2018)*

## Recent, inclusive & complete visions




*(Méndez 2021, Image: Méndez 2017, CC-BY)*

*For the purpose of this Recommendation, Open Science is defined as an inclusive construct [...] aiming to make scientific knowledge openly available, accessible and reusable for everyone, [...] It includes all scientific disciplines and aspects of scholarly practices, [...] it builds on the following key pillars: open access to scientific knowledge, open science infrastructures, ... (UNESCO, 2021)*

## Our contribution

### Goal

***To contribute to the adoption of a common, unified vision.***

### Definition proposal

***Open Science is the political and legal framework where research outputs are shared and disseminated in order to be rendered visible, accessible and reusable (Gomez-Diaz & Recio, 2020-21).***

### Three steps supporting this proposal

*I - Three selected pillars for a common understanding*
*II - Towards a political and legal framework*
*III - Enablers: three cornerstones to get to a working framework*

## I - Three selected pillars for a common understanding

### Budapest Open Access Initiative, 2002

*By "open access" to [peer-reviewed research literature], we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link...*

### Free Software Foundation, 1985

*The free software definition presents the criteria for whether a particular software program qualifies as free software: the freedom to run the program as you wish, the freedom to study how the program works, and change it...*
*+ importance of licenses*

Legal

### Committee on Data for Sciences and Technology, 1966

*CODATA est un Comité au niveau scientique international le plus élevé [...] à cause de l'importance qui s'attache à l'évaluation des données...*

## II - Towards a political and legal framework

*"Towards better access to scientific information: Boosting the benefits of public investments in research" (European Commission, 2012)*

Policy

**...sets out the action that intends to improve access to scientific information and to boost the benefits of public investment in research. [...] To improve access to scientific information, Member States, research funding bodies, researchers, scientific publishers, Universities and their libraries, innovative industries, and society at large need to work together [...] so that the 'fifth freedom' of the EU – the free circulation of knowledge – can become a reality.**

### *BOE N. 131 de 2 de junio de 2011, Artículo 37*

1. Los agentes públicos impulsarán el desarrollo de repositorios de acceso abierto a las publicaciones...
2. Los investigadores cuya actividad haya sido financiada mayoritariamente con los Presupuestos Generales del Estado están obligados a publicar en acceso abierto una versión electrónica de los contenidos aceptados para publicación...
4. La versión electrónica pública podrá ser empleada en los procesos de evaluación.

Law

### *LOI du 7 octobre 2016 pour une République numérique, Article 30*

I. Lorsqu'un écrit scientifique issu d'une activité de recherche financée au moins pour moitié par des dotations publiques est publié, son auteur dispose, même après avoir accordé des droits exclusifs à un éditeur, du droit de mettre à disposition gratuitement....
II. Dès lors que les données issues d'une activité de recherche financée au moins pour moitié par des dotations publiques [...] ont été rendues publiques, leur réutilisation est libre.

### *Estrategia Española de Ciencia, Tecnología e Innovación (EECTI) 2021-2027*

La ciencia excelente y abierta constituye uno de los pilares del Objetivo 4 (Generación de conocimiento y liderazgo científico). El impulso a un modelo de Ciencia Abierta favorecerá la generación de conocimiento de alta calidad e impacto, así como su transmisión a la sociedad...

Policy

### *Plan national pour la Science Ouverte, Juillet 2018 & 2ième Plan, juillet 2021*

1. Rendre obligatoire la publication en accès ouvert des articles et livres issus de recherches financées par appel d'offres sur fonds publics.
4. Rendre obligatoire la diffusion ouverte des données de recherche issues de programmes financés par appels à projets sur fonds publics.

**Other Member States, see:** *Open Science overview in Europe*, **OpenAIRE**, **https://www.openaire.eu/os-eu-countries**

## III - Enablers: three cornerstones to get to a working framework

Policy

- **Institutional policies:** the required evolution of policies of Universities and RPOs.
- **Infrastructures:** the development of Open Science-oriented infrastructures and services.
- **Research evaluation:** the transformation of evaluation policies and practices.

### Some references

- Aspesi C. (2014). A financial analyst's perspective on open access, COASP 2014.
- European Commission (2012). Towards better access to scientific information: Boosting the benefits of public investments in research, COM(2012) 401 final, European Commission, Brussels.
- Expert Group to the European Commission (2019). Future of Scholarly Publishing and Scholarly Communication.
- Gomez-Diaz T. & Recio T. (2020-21). Towards an Open Science definition as a political and legal framework: on the sharing and dissemination of research outputs. Version 2, POLIS N. 19, pp. 5-25, 2020. Version 3, 28/02/2021, Zenodo.
- Margoni T., Caso R., Ducato R., Guarda P. & Moscon V. (2016). Open Access, Open Science, Open Society, University of Trento.
- Méndez E. (2021). Open Science por defecto. La nueva normalidad para la investigación. ARBOR Ciencia, Pensamiento y Cultura.
- Tennant J. P. (2018). The state of the art in peer review. FEMS Microbiology Letters, Volume 365, Issue 19, fny204.
- UNESCO (2021). Final report on the draft text of the UNESCO Recommendation on Open Science, CL/4349.
- Vicente-Saez R., & Martinez-Fuentes C. (2018). Open Science now: A systematic literature review for an integrated definition, J. Business Research, V. 88.
- **More information and references** at: Gomez-Diaz & Recio (2020-21).

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*With many thanks to Wikimedia Commons for the «green pillar» https://commons.wikimedia.org/wiki/File:GreenPillar.svg.*

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