

Open Science and the reuse of publicly funded research data in the new Directive (EU) 2019/1024

Sara Gobbato

*PhD in EU Law, University of Trieste. Honorary Fellow in
Administrative Law, University of Padua
Avvocato, Bar of Milan
gobbato.sara@gmail.com*

Abstract: Directive 2019/1024/EU aims at establishing a Single Market of publicly funded research data, where the latter become freely available for reuse to any EU stakeholder for commercial and non-commercial purposes. The effectiveness of the harmonised provisions at hand seems to depend on two critical issues, to be tackled by national lawmakers in the current transposition phase ending by July 17, 2021. First, national policies should provide for adequate incentives to the research data publication in open access repositories or journals, since – upon implementation of the Directive – data embedded in closed-access journals could continue to be exposed or not by the publishers as open data, based on their copyright policies. In addition, national lawmakers should reach a fair balance in drafting the exceptions to the “open by default” and reuse obligations for the safeguard in particular of IPRs and trade secrets, in compliance with the principle “as open as possible, as closed as necessary”.

Keywords: *Open Science, Open Data, FAIR, Directive (EU) 2019/1024*

Introduction

By July 17, 2021, EU Member States shall transpose Directive (EU) 2019/1024 on open data and the reuse of public sector information¹ that recasts with relevant amendments the Public Service Information Directive 2003/98/EC (PSI Directive)².

Among the innovations³, Directive (EU) 2019/1024 contains minimum harmonisation provisions on research data. In this respect, Article 10, para. 1 of the Directive requires EU Member States to adopt open access policies aimed at making publicly funded research data “open by default” while complying with the FAIR principles⁴. Moreover, pursuant to Article 10, para. 2, the obligation to grant the reuse for commercial and non-commercial purposes is extended to publicly funded data that have been made publicly available through institutional or subject-based repositories⁵.

Within the framework of the European strategy for data⁶, the provisions at hand aims at establishing a new Single Market of publicly funded research data, where cross-border reuse shall be freely available to all EU researchers, undertakings and citizens at large, thus improving access to knowledge, innovation and the general well-being according to the Open Science and Open Innovation patterns.

¹ Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information, in OJ L 172, 26.6.2019, 56–83, ELI: <http://data.europa.eu/eli/dir/2019/1024/oj>.

² Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information, in OJ L 345, 31.12.2003, 90–96, ELI: <http://data.europa.eu/eli/dir/2003/98/oj>.

³ For a general overview of the main provisions of Directive (EU) 2019/1024, de Hert, Sajfert, 2019, 10-11; Gobbato, 2020. For a first assessment of the impact of Directive (EU) 2019/1024 in the mobility sector, Sanchez-Graells, 2019.

⁴ Art. 10, para. 1 of Directive (EU) 2019/1024 states that: “Member States shall support the availability of research data by adopting national policies and relevant actions aiming at making publicly funded research data openly available (‘open access policies’), following the principle of ‘open by default’ and compatible with the FAIR principles. In that context, concerns relating to intellectual property rights, personal data protection and confidentiality, security and legitimate commercial interests, shall be taken into account in accordance with the principle of ‘as open as possible, as closed as necessary’. Those open access policies shall be addressed to research performing organisations and research funding organisations”.

⁵ Art. 10, para. 2 of Directive (EU) 2019/1024 provides that: “Without prejudice to point (c) of Article 1(2), research data shall be re-usable for commercial or non-commercial purposes in accordance with Chapters III and IV, insofar as they are publicly funded and researchers, research performing organisations or research funding organisations have already made them publicly available through an institutional or subject-based repository. In that context, legitimate commercial interests, knowledge transfer activities and pre-existing intellectual property rights shall be taken into account”.

⁶ European Commission, 2020.

As it will be discussed in the following, however, the effectiveness of the harmonised provisions at hand seems to depend on two critical issues to be tackled by national lawmakers during the current transposition phase ending on July 17, 2021. First, national policies should succeed in providing for adequate incentives to the research data publication in open access repositories or journals, since – upon implementation of the Directive – data embedded in closed-access journals could continue to be exposed *or not* by the publishers as open data, based on their copyright policies. In addition, national lawmakers should reach a fair balance in drafting the derogations to the open access and reuse obligations for the safeguard in particular of IPRs and trade secrets, in compliance with the principle “as open as possible, as closed as necessary”.

2. Open Science before Directive (EU) 2019/1024

2.1. National competences and FAIR principles

Open research data is one of the pillars of Open Science⁷, that has been defined as one of those good ideas that in principle everybody agrees on while waiting others to take the first step for⁸. By providing a first set of harmonised rules on open research data, Directive (EU) 2019/1024 marks indeed a relevant step for the Open Science movement within the EU.

Before the adoption of the Directive⁹, each Member State retained full competence in determining the degree of openness and reusability

⁷ On the different schools of thought on Open Science see Fecher, Friesike, 2014. According to the Authors, Open Science is an umbrella notion that encompasses several debated terms (such as Open Data, Open Access to publications and Open Source software) relating to the scientific knowledge creation and dissemination. According to the “Pragmatic School”, Open Science aims at making the scientific process more efficient by “opening the scientific value chain, including external knowledge and allowing collaboration through online tools” in line with the Open Innovation patterns (Fecher, Friesike, 2014, 32). The discourse on Open (research) Data has been developed in particular by the “Democratic School” that argues that “everyone should have the equal right to access knowledge, especially when it is state-funded” (Fecher, Friesike, 2014, 25).

⁸ Fecher, Friesike, 2014, 44.

⁹ According to Article 288 TFEU, a “directive” is binding, as to the result to be achieved, upon each Member State to which is addressed, but leaves to the national authorities the choice of form and methods of implementation. Each Member State shall implement the directive within the transposition deadline provided by the directive itself; on the other hand, if a Member State already complies with a directive, no further national measures are requested. During the period allowed for implementation, Member States cannot adopt internal measures incompatible with the objectives pursued by the directive. In this respect see European Court of Justice, judgement of 22 November 2005, *Werner Mangold v Rüdiger Helm*, Case C-144/04, ECLI:EU:C:2005:709, point 72.

applicable to research data. For instance, in the frame of the *Plan national pour la science ouverte*¹⁰ France adopted the *Loi pour une République numérique* stating that research data shall be made freely available for reuse, provided that they:

- are funded at least by 50% by means of public resources (granted by central or local national authorities, public entities, national agencies or EU funds),
- are not subject to third party rights and
- have been made publicly available by the researcher or research institution¹¹.

In those EU Member States devoid of national policies on this matter, currently (and until the implementation of Directive (EU) 2019/1024), it remains up to every researcher or research institution to establish the desired degree of openness and reusability of the research data. In the lack of binding rules to this end, such decisions are taken on voluntary basis case-by-case, on variable grounds influenced *inter alia* by the scientific sector involved¹².

However, even before the adoption of the Directive (EU) 2019/1024 and despite the absence of harmonised binding provisions, the need for common rules on open data and reuse become self-evident for the scientific community coping with the “data deluge”¹³ and decentralized repositories in the digital environment¹⁴. Seeking new approaches aimed at

¹⁰ See French National Plan for Open Science of 4 July 2018, in https://cache.media.enseignementsup-recherche.gouv.fr/file/Recherche/50/1/SO_A4_2018_EN_01_leger_982501.pdf.

¹¹ Article 30 of *Loi n° 2016-1321* introduced the new Article L. 533-4 of the *Code de la Recherche*, providing that: “Dès lors que les données issues d’une activité de recherche financée au moins pour moitié par des dotations de l’Etat, des collectivités territoriales, des établissements publics, des subventions d’agences de financement nationales ou par des fonds de l’Union européenne ne sont pas protégées par un droit spécifique ou une réglementation particulière et qu’elles ont été rendues publiques par le chercheur, l’établissement ou l’organisme de recherche, leur réutilisation est libre”. In this respect, see also ERAC Standing Working Group, 2020, 17; OECD, 2020, 45 where it is clarified that: “[a]lthough more than 92% of universities in Europe have open-access policies for publications, or plan to do have them in the near future, less than 28% had guidelines in place for open access to data. The main institutional barriers to promoting research-data management and/or open access to research data are: different ‘scientific cultures’ within the university; the absence of national guidelines or policies; limited awareness of benefits; legal concerns; and technical complexity”.

¹² Zuiderwijka, Spiersb, 2019.

¹³ Mattmann, 2013; Fraccaro, 2015.

¹⁴ In this respect see The Royal Society, 2012; Destro, Bisol et al., 2014. The Authors point out that “[t]here is now a growing international movement for ‘open science’, by which is meant making publication of scientific concepts and the data on which they are based readily accessible to all, together with procedures for sharing important data sets. This trend is not only limited to technical and IT aspects, but extends to epistemological, sociological and political issues [...] and to governmental initiatives to open official data both to citizens and to entrepreneurs able to offer new data-based services”.

more effective data management through “Community Norms”¹⁵, in 2010 – for instance – the notion of Open Knowledge and the Panton Principles were laid down in the attempt to define “open data” according to a shared language¹⁶. In 2014¹⁷, a group of academic and private stakeholders drafted the foundations of the FAIR principles for the management of “*Findable, Accessible, Interoperable and Reusable*” data by humans and machines¹⁸.

As pointed out by the dedicated European Commission Expert Group¹⁹, research data are FAIR when:

- they are *Findable* insofar as they are described by sufficiently rich metadata and stored in repositories that are known and accessible to potential users. In addition, they can be provided with permanent links as “unique and persistent identifiers” that allow to reference and cite them unequivocally;
- they are *Accessible* if anyone, provided at least with a connected device and internet access, can retrieve the metadata on access conditions. It is important to highlight that fulfilling the FAIR principles on accessibility does not imply necessarily to release open data without limitations vis-à-vis third parties users;
- they are *Interoperable* if, under a semantic and technical point of view, they are based on a common language and technical standards which allow the data to be shared machine-to-machine, making them as “machine-actionable”;
- they are *Reusable* if they are provided with metadata on their origin and on the undergone transformations, and moreover with a clear data usage licence which makes them transparently reusable by humans and machines.

¹⁵ This expression is used by Murray-Rust, 2008: “[t]he term ‘Community Norms’ represents an acceptance of appropriate behavior which has moral, but no legal force”.

¹⁶ See Murray-Rust, Neylon, Pollock, Wilbanks, 2010: “[a] piece of data or content is open if anyone is free to use, reuse and redistribute it – subject only, at most, to the requirement to attribute and/or share-alike”.

¹⁷ See Wilkinson, Dumontier, Aalbersberg, Appleton, Axton, Baak, Mons, 2016. The Authors refer that “[...] a workshop was held in Leiden, Netherlands, in 2014, named ‘Jointly Designing a Data Fairport’. This workshop brought together a wide group of academic and private stakeholders all of whom had an interest in overcoming data discovery and reuse obstacles. From the deliberations at the workshop the notion emerged that, through the definition of, and widespread support for, a minimal set of community-agreed guiding principles and practices, all stakeholders could more easily discover, access, appropriately integrate and re-use, and adequately cite, the vast quantities of information being generated by contemporary data-intensive science. The meeting concluded with a draft formulation of a set of foundational principles that were subsequently elaborated in greater detail – namely, that all research objects should be Findable, Accessible, Interoperable and Reusable (FAIR) both for machines and for people. These are now referred to as the FAIR Guiding Principles. Subsequently, a dedicated FAIR working group, established by several members of the FORCE11 community fine-tuned and improved the Principles”.

¹⁸ FORCE11, version b1.0. In this respect, see Giglia, 2017, 89-90.

¹⁹ European Commission Expert Group on FAIR Data, 2018, 19.

According to their non-binding nature, FAIR principles do not trigger *per se* any legal obligation on the researchers, who remain free to embrace them on a voluntary basis, in their individual effort of improving the outcomes of their activity in the general interest. As pointed out above, complying with the FAIR principles does not necessarily imply the release of “open data” with no constraints: in fact, FAIR data can be made accessible to third party users under limitations aimed at protecting – for instance – personal data, public security, IPRs and other commercial secrets²⁰.

Due to their limited strength, FAIR principles alone have been considered insufficient to promote data driven innovation until the desired breakthrough. Accordingly, in 2018 the European Commission Expert Group recommended to implement the FAIR principles in conjunction with public open access policies making data “open by default” except on grounds of objective derogations, according to the rule “as open as possible, as closed as necessary”.

Moreover, to reach effective research data reusability, the Expert Group suggested determining reuse costs according to the proportionality principle, to an extent that does not discourage potential users²¹.

2.2. Research data in the PSI Directive 2003/18/EC

In 2003, the European Union adopted minimum harmonised provisions on the reuse of the public sector information under the PSI Directive, which requested EU Member States initially just to promote the reuse of data held by public entities. According to amendments passed in 2013²²,

²⁰ European Commission Expert Group on FAIR Data, 2018, 21. The confidentiality may be satisfied in the data sharing agreements, by means of contractual provisions neutralising the risks of unauthorised release of sensitive information.

²¹ The Expert Group released the following recommendations: “Rec. 17 Align and harmonise FAIR and Open data policy. Policies should be aligned and consolidated to ensure that publicly-funded research data are made FAIR and Open, except for legitimate restrictions. The maxim ‘as Open as possible, as closed as necessary’ should be applied proportionately with genuine best efforts to share”; “Action 17.5: For data created by publicly funded research projects, initiatives and infrastructures, and where action 17.4 does not apply, the default should be to make the data available as soon as possible. However, policies may explicitly allow a reasonable embargo period to facilitate the right of first use of the data creators. Embargoes should be short (e.g. c. six months to two years) based on the prevailing culture in the given research community”; “Action 17.6: Policies should require an explicit and justified statement when (publicly-funded) data cannot be Open and a proportionate and discriminating course of action should be followed to ensure maximum appropriate data accessibility, rather than allowing a wholesale opt-out from the mandate for Open data”. In this respect, see Expert Group on FAIR Data, 2018, 70-71.

²² Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information, OJ L 175, 27.6.2013, 1–8, ELI: <http://data.europa.eu/eli/dir/2013/37/oj>.

the PSI Directive obliged national entities to provide their open data²³ to private stakeholders, upon their request for commercial or non-commercial purposes. Both in the 2003 original text and in the 2013 amended version applicable to date, the PSI Directive excludes research data from the scope of the “open by default” and reuse obligations. That exclusion was justified by the fact that, up to 2013, research data were considered largely subject to IPRs and other third party rights²⁴.

That approach on research data changed during the legislative procedure for the recast of the PSI Directive, leading to the adoption of the new Directive (EU) 2019/1024. An effective contribution to this result came from the European Commission’s decision to embrace the Open Science approach in its research policy (notably entitled “Open Science, Open Innovation, Open to the World”²⁵), while the “open by default” was identified as the default option in the Horizon 2020 framework²⁶.

In the wake of the wider political consensus over Open Science, during the revision of the PSI Directive EU lawmakers began to evaluate the possible options to extend the new harmonized framework on reuse also to research data for the first time²⁷.

The results achieved are now embodied in Article 10 of the new Directive (EU) 2019/1024 as it will be discussed in the following.

3. Preliminary remarks on minimum harmonization and the notion of “research data” in the new Directive

Before analysing Article 10 on research data, two general considerations may be appropriate on the general scope of Directive (EU) 2019/1024 and the notion of research data therein provided.

On the first point, it is worth noting that Directive (EU) 2019/1024 is a *minimum* harmonization act²⁸: this means that – in the national transposition phase – each Member State may decide to introduce stricter obligations on open data and reuse. Accordingly, each Member State is free to (and indeed it is encouraged by the EU to) adopt national rules that, while complying with Directive (EU) 2019/1024, go beyond the minimum harmonization provisions by extending their scope and mandatory effects

²³ In this respect see Sanna, 2018, 251.

²⁴ European Commission, 2018, 51.

²⁵ European Commission, 2016a.

²⁶ European Commission, 2016b.

²⁷ See European Commission, 2018, 51; see also Richter, 2018.

²⁸ See Directive (EU) 2019/1024, Art. 1, para. 1: “this Directive establishes a set of minimum rules governing the re-use and the practical arrangements for facilitating the re-use [...]”.

on open data and the reuse obligation²⁹. This principle applies in general to all provisions of Directive (EU) 2019/1024, including Article 10 specifically devoted to research data.

On the second point, with regard to the notion of research data applied by the Directive, attention should be paid to Article 2(9) according to which

“research data” are “documents in a digital form, *other than scientific publications*, which are collected or produced in the course of scientific research activities and are used as evidence in the research process, or are commonly accepted in the research community as necessary to validate research findings and results”³⁰.

As further clarified by the Directive³¹, research data include, for instance, “statistics, results of experiments, measurements, observations resulting from fieldwork, survey results, interview recordings and images”. It comprehends also “meta-data, specifications and other digital objects”.

On the other hand, Directive (EU) 2019/1024 distinguishes research data “from scientific articles reporting and commenting on findings resulting from their scientific research”³². Accordingly, we could argue that Article 10 applies to the so-called “Supporting Information”³³, while the related “full text” journal articles are *per se* excluded from the harmonised openness and reuse obligations, thus remaining under the domain of the publishers’ copyright policies.

As far as journal articles are concerned, the Directive makes a distinction with regard to open access publications. Indeed, in transposing the Directive, each Member State may decide to extend its scope to research data that have been made publicly available “through open access publications, as an attached file to an article, a data paper or a paper in a data journal”³⁴. In this respect, therefore, depending on national discretionary decisions, each Member State may provide that *open access publications* are *alternative means of publication* for the research data, in addition to repositories.

The reference made by the Directive to open access journals as alternative means of publications seems to imply that, upon implementation of the Directive, *closed-access publishers* would remain in principle free to expose (*or not*) the “Supporting Information” as open data when the related copyrighted journal article contains the results of publicly funded research.

²⁹ Rec. No. 20 points out that “Member States’ policies can go beyond the minimum standards established in this Directive, thus allowing for more extensive re-use”.

³⁰ See Directive (EU) 2019/1024, Art. 2(9).

³¹ See Directive (EU) 2019/1024, Rec. No. 27.

³² See Directive (EU) 2019/1024, Rec. No. 27.

³³ Murray-Rust, 2008.

³⁴ See Rec. No. 28.

4. The obligation to adopt national open access policies on research data

With reference to research data as defined by Article 2(9) of the Directive (EU) 2019/1024, Article 10, para. 1 requests Member States to support their availability “by adopting national policies and relevant actions aiming at making publicly funded research data openly available (‘open access policies’), following the principle of ‘open by default’ and compatible with the FAIR principles”.

As for the content of such policies, it should be noted that, in the frame of the Directive, “open access” means “the practice of providing online access to research outputs *free of charge* for the end user and *without restrictions* on use and re-use beyond the possibility to require *acknowledgement of authorship*”³⁵.

As to their beneficiaries, the Directive does not foresee “research-centric” policies: the publicly funded research data should be made available to “researchers and the public at large”³⁶, including for instance innovative start-ups and SMEs.

In drafting their national policies, EU Member States retain discretionary powers in setting the appropriate balance between “open access” and other relevant interests relating namely to “intellectual property rights, personal data protection and confidentiality, security and legitimate commercial interests”, according to the rule “as open as possible, as closed as necessary”. Therefore, as to the actual scope and impact of the national policies, pursuant to Article 10, para. 1, Member States retain competence on the identification and regulation of the public interest derogations to the “open by default” paradigm. Despite the fact that - under EU law - public interest exceptions shall be construed and interpreted narrowly, the identification and implementation of the derogations will be crucial in determining the effectivity of the open access policies at hand.

As to the entities bound by the obligations, pursuant to the same Article 10, para. 1, the national open access policies “shall be addressed to research performing organisations and research funding organisations”. In this respect the Directive recognises that “hybrid organisations”, such as public sector bodies or public undertakings carrying on different activities³⁷, should comply with the Directive only as their publicly funded research

³⁵ See Rec. No. 27.

³⁶ See Rec. No. 27.

³⁷ For instance, a certain entity may perform research activities together with other economic/non-economic activities; moreover, it may perform research activities that are publicly funded as well as others totally privately funded.

activities and related research data are concerned, according to a functional approach³⁸.

5. Conditions for reuse of publicly funded research data

Article 10, para. 2 defines the conditions for reuse of research data.

First, the provision clarify that the reuse of research data shall be granted without prejudice to third parties IPRs³⁹, which prevail expressly over the public interest related to the reuse of publicly funded research data.

Accordingly, pursuant to Article 10, para. 2 research data shall be reusable for commercial or non-commercial purposes insofar as:

- research data are not subject to IPRs or third parties rights,
- they are totally or partly publicly funded⁴⁰ and
- researchers, research performing organisations or research funding organisations have already made them publicly available through an institutional or subject-based repository. In this respect, as mentioned above, Member States may extend the application of the Directive to research data made publicly available “through other data infrastructures than repositories” and “through open access publications, as an attached file to an article, a data paper or a paper in a data journal”⁴¹. According to this specification, therefore, research data may be published by means of repositories *and* (depending on each Member State’s discretionary decision) by means also of other data infrastructures as well as open access journals.

As pointed out above, Article 10 applies to the so-called “Supporting Information” while the related closed-access “full text” journal articles remain under the domain of their publishers’ copyright policies.

In this respect, the IPRs limitation provided by Article 10, para. 2 could also imply that, according to their copyright policies, closed-access publishers will remain free to expose (or not) the “Supporting Information” as open data if the results of a publicly funded research had to be published in a closed-access journal. In this context, therefore, the decision to publish the research data in a public repository or in an open access journal seems the key precondition of any legal obligation on reuse pursuant to the Directive.

According to Article 10, para. 2, in defining the reuse scope Member States can take into account “legitimate commercial interests, knowledge transfer

³⁸ See Rec. No. 28.

³⁹ See Art. 10, para. 2 and Art. 1, para. 2, lett. c) of Directive (EU) 2019/1024.

⁴⁰ See Rec. No. 28: “certain obligations stemming from this Directive should be extended to research data resulting from scientific research activities subsidised by public funding or co-funded by public and private-sector entities”.

⁴¹ See Rec. No. 28.

activities and pre-existing intellectual property rights⁴². Accordingly, Member States are allowed to introduce derogations to the reuse obligation *for specific reasons*, aimed at the protection of investments and innovation in the general interest.

Also in this case (as observed above with reference to Article 10, para. 1), the definition and implementation of the exceptions will be crucial in determining the effectivity of the reuse obligation, despite the fact that - under EU law - derogations shall be narrowly construed and interpreted.

In any case, Article 10 is not applicable to “research data which are excluded from access on grounds of national security, defence or public security”⁴³.

6. Procedural rules on reuse of research data

For publicly funded research data complying with the requirements provided by Article 10, para. 2, reuse shall be granted in accordance with Chapters III and IV of Directive (EU) 2019/1024.

This means that, according to Chapter III on the conditions of reuse, research data shall be made available “where possible and appropriate, by electronic means, in formats that are open, machine-readable, accessible, findable and re-usable, together with their metadata. Both the format and the metadata shall, where possible, comply with formal open standards”⁴⁴.

Moreover, pursuant to Article 6, para. 6, the reuse of publicly funded research data shall be *free of charge for the user*, independently from the nature of the authority/entity that holds the data in question. In this respect, Rec. 28 clarifies that:

“[i]n order to avoid any administrative burden, obligations stemming from this Directive should apply *only* to such research data that have *already been made publicly available* by researchers, research performing organisations or research funding organisations *through an institutional or subject-based repository* and should *not impose extra costs* for the retrieval of the datasets or require additional curation of data”.

Therefore, under the Directive, the reuse of research data should not generate any additional costs for the reproduction and provision of data,

⁴² As pointed out by Rec. No. 28, “concerns in relation to privacy, protection of personal data, confidentiality, national security, legitimate commercial interests, such as trade secrets, and to intellectual property rights of third parties should be duly taken into account, according to the principle ‘as open as possible, as closed as necessary’”.

⁴³ See Rec. No 28.

⁴⁴ See Art. 5.

insofar as they are already publicly available as e.g. anonymised and machine-readable data as the case may be⁴⁵.

In addition, reuse shall be granted, as far as possible, by means of standard licences. In this respect, as a general principle, Article 8 of the Directive states that the reuse shall not be subject to conditions, “unless such conditions are objective, proportionate, non-discriminatory and justified on grounds of a public interest objective. When re-use is subject to conditions, those conditions shall not unnecessarily restrict possibilities for re-use and shall not be used to restrict competition”⁴⁶.

Since the Directive does not specify any kind of licence to be applied, in this respect Member States can follow the guidelines already provided at national level for open data reuse. As far as Italy is concerned, for example, AgID (*Agenzia per l’Italia Digitale*) suggests to release data according to the Creative Commons CC-BY 4.0 licence⁴⁷, which allows to distribute, modify and merge the data for commercial and non-commercial purposes, provided that credit is given to the original data source by means of the attribution. As noted⁴⁸, the Creative Commons CC-BY 4.0 licence can be safely used to protect databases since it contains specific references to the *sui generis* right that, according to EU law⁴⁹, safeguards databases against unauthorised extraction and reutilisation of their content.

With regard to data search infrastructures, Article 9 requires Member States to make practical arrangements facilitating the search for documents available for re-use, such as asset lists of main documents with relevant

⁴⁵ See Art. 6.

⁴⁶ The provision specifies that Member States shall encourage the use of standard licences “in digital format” and “processed electronically”.

⁴⁷ In this respect see AgID, 2017, spec. Action No 12 which provides that “[...] tenuto conto del contesto normativo di riferimento, delle indicazioni in tema di licenze contenute nella Comunicazione della Commissione 2014/C - 240/01 e dei principi di indisponibilità dei beni del demanio culturale espresso negli artt. 10 e 53 del Codice dei beni culturali (D.lgs. 22 gennaio 2004, n. 42), si ritiene opportuno fare riferimento ad una licenza unica aperta, che garantisca libertà di riutilizzo, che sia internazionalmente riconosciuta e che consenta di attribuire la paternità dei dataset (attribuire la fonte). Pertanto, si suggerisce l’adozione generalizzata della licenza CC-BY nella sua versione 4.0, presupponendo altresì l’attribuzione automatica di tale licenza nel caso di applicazione del principio “Open Data by default”, espresso nelle disposizioni contenute nell’articolo 52 del CAD”. Article 1 of decision C(2019) 1655 final of February 22, 2019, defines the Creative Commons Attribution 4.0 International Public License (CC-BY 4.0) as standard licence for the reuse of the European Commission’s data pursuant to Directive 2011/833/EU.

⁴⁸ Aliprandi, 2017, 110.

⁴⁹ See Articles 7-11 of Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases (consolidated version as amended by Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market), ELI: <http://data.europa.eu/eli/dir/1996/9/2019-06-06>.

metadata. Those lists should be accessible, as far as possible and appropriate, online and in machine-readable format, through portal sites that are linked to the asset lists. Where possible, Member States shall also facilitate the cross-linguistic search for documents, in particular by enabling metadata aggregation at Union level⁵⁰.

7. Non-discrimination and exclusive agreements

As a general rule on reuse according to the Directive, under Article 11 any applicable conditions shall be non-discriminatory for comparable categories of reuse, including for cross-border reuse. By prohibiting cross-border discriminations within the EU Member States, the Directive lays down the foundations of a new EU Single Market of publicly funded research data, insofar as research data released in one Member State shall be reusable by any EU stakeholder pursuant to Directive (EU) 2019/1024.

According to the non-discrimination principle, Article 12 states that the reuse shall be open to all potential actors and the related contracts between the research data holder and the users shall not grant exclusive rights of exploitation. However, Article 12, para. 2 recognises that exclusive rights can be granted on exceptional grounds where it is “necessary for the provision of a service in the public interest”. Where an exclusive right is granted to the data user with this particular aim, the related agreement shall be made publicly available and “shall be subject to regular review [...] every three years” at the latest. In the lack of further clarification by the Directive, each Member State would be competent to specify the national public interest grounds justifying the exclusivity in regard of economic activities in the general interest⁵¹. In this respect, based on the consolidated case law on

⁵⁰ For the requirements to be met by an ideal data infrastructure for science, see European Commission High Level Expert Group on Scientific Data, 2010, 20-23.

⁵¹ In this respect, it is worth recalling that, under a general principle applicable in the Services of General Economic Interest (SGEI) sector, each EU Member State retains competence in qualifying a certain economic activity as SGEI insofar as, based on its objective characteristics, that activity is in the general interest under a national point of view. In this respect see European Commission, Communication on the application of the European Union State aid rules to compensation granted for the provision of services of general economic interest, in OJ C 8, 11.1.2012, 4–14, points 45-46: “The concept of service of general economic interest is an evolving notion that depends, among other things, on the needs of citizens, technological and market developments and social and political preferences in the Member State concerned. The Court of Justice has established that SGEIs are services that exhibit special characteristics as compared with those of other economic activities. In the absence of specific Union rules defining the scope for the existence of an SGEI, Member States have a wide margin of discretion in defining a given service as an SGEI [...]”.

SGEIs, we could argue that the exception is applicable in all cases where the exclusive right is necessary and proportionate – under an economic point of view – in order to develop a product/service in the general interest, whose investment costs would be unaffordable in the lack of the exclusivity.

The Directive regulates also exclusive rights that are applied *de facto*. In this respect, it points out that there could be legal or practical arrangements that, without expressly granting an exclusive right, aim at, or could be reasonably expected to lead to, a restricted availability for the reuse of data. Pursuant to Article 12, para. 4, such agreements

“shall be made publicly available online *at least two months before* their coming into effect. The effect of such legal or practical arrangements on the availability of data for reuse shall be subject to regular reviews and shall, in any event, be *reviewed every three years*. The final terms of such arrangements shall be transparent and made publicly available online”.

In this case, by requesting the *ex ante* publication of the *de facto* exclusive contracts, the Directive gives interested parties the opportunity to request the reuse of the data covered by those arrangements, thus “prevent[ing] the risk of restricting the range of potential re-users”⁵².

8. Conclusion

By means of the harmonised rules embodied in Article 10 of Directive (EU) 2019/1024, from July 17, 2021 the “open by default” paradigm will become the general rule applicable in all EU Member States as far as publicly funded research data are concerned. From that moment, due to the prohibition of cross-border discrimination, publicly funded research data should be made available for reuse to all EU stakeholders (not only researchers but the public at large) operating within the newly established EU Single Market for publicly funded research data.

As occurred in the past with regard to the PSI Directive, the impact of the harmonised rules at hand will depend primarily on cultural factors, relating in this case to the widespread understanding of the Directive (EU) 2019/1024 and of the Open Data and Open Science fundamental values.

The effectiveness of Article 10 seems to depend, in particular, on two main critical issues.

First, as seen above⁵³, a legal obligation on reuse could be enforced pursuant to the Directive only if the researchers decide to publish the data

⁵² See Rec. 50.

⁵³ In this respect see para. 5 above.

in public repositories and/or (where allowed by each national law) in other infrastructures or public access journals. On the other hand, due to the IPRs safeguard clause provided by Article 10, closed-access journals could continue to refuse to expose the Supporting Information attached to the full text of articles in their domain, pursuant to their copyright policies. This limitation seems to be applicable also when the journal articles embed publicly funded research data. In this respect, it is therefore crucial that national policies provide for adequate incentives as to the publication of the publicly funded research data in open access repositories and/or other infrastructures and journals.

The second critical issue pertains to the derogatory provisions that Member States are allowed to introduce in the implementation of Article 10, in order to protect in particular IPRs as well as trade secrets⁵⁴. Despite the fact that derogatory provisions shall be construed and interpreted restrictively under EU law, the effectiveness of the legal obligation on reuse of research data seems ultimately to depend on the fair balance reached in this respect by national lawmakers, in substantial adherence to the principle “as open as possible, as closed as necessary”.

References

- AgID, Linee guida nazionali per la valorizzazione del patrimonio informativo pubblico, 2017, available at <https://www.dati.gov.it/content/linee-guida-nazionali-valorizzazione-patrimonio-informativo-pubblico>
- Aliprandi, Come gestire i diritti d'autore per fare Open Access, in Aliprandi (eds.) *Fare Open Access, La libera diffusione del sapere scientifico nell'era digitale*, 2017, 93-118, https://commons.wikimedia.org/wiki/File:Simone_Aliprandi,_Fare_Open_Access.pdf
- de Hert, Sajfert, Regulating Big Data in and out of the data protection policy field: Two scenarios of post-GDPR law-making and the actor perspective, *European Data Protection Law Review*, 2019, 5(3), 338 – 351, <https://doi.org/10.21552/edpl/2019/3/8>
- Destro, Bisol et al., Perspectives on Open Science and scientific data sharing: an interdisciplinary workshop, in *Journal of Anthropological Sciences*, 2014, Vol. 92 179-200
- ERAC Standing Working Group, Opinion on Open Science and Innovation (SWG OSI) on future Open Science and Open Innovation priorities

⁵⁴ In this respect see paras 4 and 5 above.

- in the European Research Area (2020-2030), 1203/2020, <https://data.consilium.europa.eu/doc/document/ST-1203-2020-INIT/en/pdf>
- European Commission, Open Innovation, Open Science, Open to the World. A vision for Europe, 2016a, <https://ec.europa.eu/digital-single-market/en/news/open-innovation-open-science-open-world-vision-europe>
- European Commission, H2020 Programme: Guidelines on FAIR Data Management in Horizon 2020, 2016b, http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf
- European Commission, Study to support the review of Directive 2003/98/EC on the re-use of public sector information, 2018, <https://op.europa.eu/en/publication-detail/-/publication/45328d2e-4834-11e8-be1d-01aa75ed71a1/language-en>
- European Commission Expert Group on FAIR Data, Turning FAIR into reality, 2018, <https://op.europa.eu/en/publication-detail/-/publication/7769a148-f1f6-11e8-9982-01aa75ed71a1>
- European Commission, A European strategy for data, 19.02.2020, COM(2020) 66 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0066&qid=1599137427627&from=IT>
- European Commission High Level Expert Group on Scientific Data, Riding the wave. How Europe can gain from the rising tide of scientific data, 2010, https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=707
- Fecher, Friesike, Open Science: One Term, Five Schools of Thought, in Bartling S., & Friesike S. (Eds.), *Opening Science*, 17-47, Cham: Springer, 2014, DOI: 10.1007/978-3-319-00026-8_2.
- FORCE11, Guiding Principles for Findable, Accessible, Interoperable and Re-usable Data Publishing, version b1.0, <https://www.force11.org/fairprinciples>
- Fraccaro, Un diluvio di dati, *Le Scienze*, dicembre 2015, n. 568, 71-77
- Giglia, Fare Open Access e farlo correttamente, in Aliprandi (eds.) *Fare Open Access, La libera diffusione del sapere scientifico nell'era digitale*, 2017, 53-91, https://commons.wikimedia.org/wiki/File:Simone_Aliprandi,_Fare_Open_Access.pdf
- Gobbato, Verso l'attuazione della direttiva (UE) 2019/1024 sul riutilizzo degli open data della PA: nuove opportunità per le imprese, in *Rivista di Diritto dei Media*, 2/2020, 247-261, http://www.medialaws.eu/wp-content/uploads/2020/07/RDM_2_2020-Gobbato.pdf

- Mattmann, A vision for data science, *Nature* 493, 473–475 (2013), <https://doi.org/10.1038/493473a>
- Murray-Rust, Open data in science, *Serials Review*, 2008, 34(1), 52–64, doi:10.1016/j.serrev.2008.01.001
- Murray-Rust, Neylon, Pollock, Wilbanks, Panton Principles, Principles for open data in science, 2010, <http://pantonprinciples.org>
- OECD, Enhanced Access to Publicly Funded Data for Science, Technology and Innovation, OECD Publishing, Paris, 2020, <https://doi.org/10.1787/947717bc-en>
- Richter, Open Science and Public Sector Information – Reconsidering the exemption for educational and research establishments under the Directive on re-use of public sector information, *JIPITEC*, 2018, Vol. 9, Issue 1, Max Planck Institute for Innovation & Competition Research Paper No. 17-15, <https://ssrn.com/abstract=3090337> or <http://dx.doi.org/10.2139/ssrn.3090337>
- Royal Society (The), Science as an open enterprise, 2012, <https://royalsociety.org/topics-policy/projects/science-public-enterprise/report/>
- Sanchez-Graells, Some Public Procurement Challenges in Supporting and Delivering Smart Urban Mobility: Procurement Data, Discretion and Expertise, in Finck, Lamping, Moscon, Richter (eds.), *Smart Urban Mobility – Law, Regulation, and Policy*, MPI Studies on Intellectual Property and Competition Law (forthcoming 2020), <https://ssrn.com/abstract=3452045> or <http://dx.doi.org/10.2139/ssrn.3452045>
- Sanna, Dalla trasparenza amministrativa ai dati aperti. Opportunità e rischi delle autostrade informatiche, Torino, 2018
- Wilkinson, Dumontier, Aalbersberg, Appleton, Axton, Baak, Mons, The FAIR guiding principles for scientific data management and stewardship, in *Nature*, 2016, 3(160018), 1–9, <https://doi.org/10.1038/sdata.2016.18>
- Zuiderwijka Anneke, Spiersb Helen, Sharing and re-using open data: A case study of motivations in astrophysics, in *International Journal of Information Management*, 2019, 49, 228–241.