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Who Is ERIC? The Politics and Jurisprudence of a Governance Tool for Collaborative European Research Infrastructures

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Abstract

Pan-European research infrastructures (RIs) have been labelled a 'pillar' of the European Research Area initiative (ERA) and 'engines' which are expected to drive forward the European Union (EU) economy by advancing its science and technology and ultimately its competitiveness on the global arena. The focus of this article is on the origins and nature of a policy tool named the European Research Infrastructure Consortium (ERIC), introduced by the EU in 2008 specifically for the purpose of stimulating and simplifying the set-up and operation of pan-European RIs.

The article offers an analysis of ERIC from the perspectives of legal, organisational and science policy studies. The findings demonstrate that enactment of the legal instrument signals the increasing involvement of a supranational body in a traditionally intergovernmental context of science policy. ERIC as a legal framework is characterised by its flexible nature in the sense that members of ERIC enjoy a significant discretion as to, for example, internal structure and financing. The taxonomy of twenty RIs which have to date been set up under ERIC status underlines the all-encompassing nature of the legal tool, which raises a number of further scholarly questions addressed here.

Keywords

Research infrastructures; European Research Infrastructure Consortium; Policy instrument; Scientific collaboration; Consortium; Intergovernmental legal instrument

How can the European Union (EU) enable day-to-day operations of such scientific organisations as a particle accelerator, a large data repository on societal values, or a platform facilitating biomedical research across different nations? Diverse in their missions, these types of collaborative facilities and resources for science have attained an umbrella term of 'research infrastructure' (RI) in the EU policy jargon. For over a decade, RIs have been praised for their ability to strengthen the scientific and technological capabilities of the EU through innovation and their potential to contribute to the Union's competitiveness on the global stage. In order to facilitate a quicker set-up and smoother operation of European RIs, an entirely new organisational form, called the European Research Infrastructure Consortium (ERIC), was launched by the European Commission (Commission) in 2008. ERIC provides RIs with a legal personality and such features of an international organisation (IO) as exemptions from value added tax (VAT) and EU procurement rules.

Nearly a decade after the launch of ERIC, twenty RIs in different scientific areas have been set up with its help (see the table in the Appendix). Nevertheless, the existing scholarly research on ERIC is mostly case-specific (Lindström and Kropp 2017; Reichel, Lind and Hansson 2014), or limited to certain aspects of the ERIC phenomenon such as public participation (Ryan 2015), intellectual property (IP) rights (Yu, Wested and Minssen 2017), or public procurement (Graber-Soudry 2019). We identify a need for broader research efforts in political science, history, organisational studies, legal, as well as science and innovation policy studies on what ERIC is, where it came from, why it was introduced and how it works. This article marks a beginning for such research efforts, by laying out the historical origins of the ERIC phenomenon, the policy processes by which it came about, the details of the regulation upon which it rests, as well as the organisational characteristics of ERICs¹.

Historically, European collaboration on science was not a part of the original mandate of the then-European Community, rather it was made possible due to ad hoc intergovernmental solutions. Several successful cases of such collaborations include the European Organisation for Nuclear Research (CERN) in nuclear and particle physics, the European Southern Observatory (ESO) for ground-based astronomy, the European Synchrotron Radiation Facility (ESRF) for multidisciplinary materials and life sciences, and the space programmes within the European Space Association (ESA) (Krige 2003; Papon 2004; Hallonsten 2014). All of these, and several others have proven the worth of European intergovernmental collaboration in science and enabled Europe to keep up with international competition, foremost from the United States and Japan, in many scientific and technological fields. Some collaborative efforts have even given pan-European scientific communities an alleged global lead in their respective areas, in spite of an absence of coherent policy frameworks for their launch and development (Hallonsten 2016: 73-74).

In recent years, policymakers have paid increased attention to how RIs are funded and organised, not only in the natural and technical sciences but also in medicine, social sciences and the humanities. This is now a common theme in research and innovation policy, both at member state levels, as well as at such intergovernmental fora as the Global Science Forum (GSF)² of the Organisation for Economic Cooperation and Development (OECD) and G7. This is also a policy area where the EU has been proactive in enabling new European collaborations: in addition to money allocated via the EU funding schemes for research, the launch of the ERIC organisational form may be viewed as a very significant step of the EU in demonstrating its unprecedented commitment and exercising its law-making powers in the research and innovation area.

The article begins by introducing the methods it relies on. The following section provides a conceptual and historical background of European collaborations on science. Thereafter, we outline the developments in the domain of research policy which led to the EU's increased involvement in the matter of RI. The article continues with reflections on those legal foundations of the EU which enabled ERIC, before sketching out its legal portrait by dissecting the ERIC regulation (2009). Finally, we consider the organisational characteristics of ERICs and conclude by reflecting on the nature of this policy tool and suggesting potential paths for further research.

A NOTE ON METHODS

The primary questions we aim to answer in this article are what ERIC is, how and why it came about and what characteristics organisations under the status of ERIC possess. We acknowledge that the scope of a single article allows us to reveal only a concise account of the background and characteristics of ERIC; however our attempt to conduct this interpretive study by employing the perspectives of a legal scholar, a sociologist of science and a political scientist is done with the intention of delivering the starting point for a comprehensive analysis of this policy tool.

The foundation of the article is built upon a synthesis of historical accounts of European scientific cooperation on the matter of RI. The timeframe stems from the post-Second World War period until more recent developments leading up to the creation of ERIC in the late 2000s. With the purpose of determining the underlying causes leading up to the launch of the supranational ERIC instrument, we focus on the policy-related, legal and organisational explanatory factors which led to ERIC as an outcome. This allows us to draw inferences regarding the driving forces which stimulated the enactment of this legal tool.

As a second step, we trace the legislative processes around the enactment of the policy instrument by following the stages of the EU legislative procedures. The legal study of the ERIC form in this article is based upon a classic legal doctrinal method whereby relevant legislation and related preparatory

material has been examined and analysed in order to explain the legal form and the legal framework it is built on. For this purpose, publicly available documents were retrieved from the EU Lex and the archives of the EU institutions involved in decision-making on the ERIC instrument. The time frame was set for the period between 2000, marking the launch of the ERA initiative, and 2013, with the amendment of the ERIC regulation. The focus on the legal dimension of ERIC allows us to summarise and reflect on the main features of this legal tool.

An overview of the present-day organisational landscape of the twenty ERIC facilities was performed by constructing a table in order to differentiate between the diverse ERIC facilities (see Appendix). The information was retrieved from the websites of the individual ERIC facilities, official decisions of the Commission on the status of ERIC, the European Research Infrastructure Forum (ESFRI) roadmaps and the Commission's own account of the ERIC landscape.

BACKGROUND: 'EUROPE IS NOT OPTIMALLY ORGANISED'

Modern society is often seen as an organisation society (Presthus 1979; Coleman 1982; Perrow 1991), and the dominating organisational form is the limited liability company, the detailed legal status and leeway of which differs slightly between different countries, but the basic principles of which are universal. Aside from limited liability companies, governmental agencies, foundations and various forms of associations (including non-governmental organisations (NGOs) and international treaty organisations) are also common forms of organising collective endeavours, the goals of which are hard to accomplish without such a formal structure. Although there are several indications that scientific research is an activity with distinct characteristics that differ from, for example, the exercise of power through governmental authority and the accumulation of profit by the efficient production and marketing of products and services (e.g. Merton 1973; Whitley 1984; Münch 2014), there has, hitherto, been no organisational form that is specifically provided for international collaboration on science.

In most countries, both universities and independent governmental research institutes are either non-profit foundations, limited liability companies or governmental agencies. Large scientific facilities (Big Science) are typically operated either as companies, IOs or subsidiaries of foundations and associations, regardless of whether they are nationally or internationally owned and funded (Hallonsten and Heinze 2012). Prior to the launch of the ERIC organisational form – which may be looked upon as a form enabling collaborative research activity – multinational European research facilities were either treaty organisations (e.g. CERN, ESO) or limited liability companies established and operated under domestic legislation in the countries of their location (e.g. ESRF, the Institute Laue Langevin (ILL) and the European X-ray Free Electron Laser (XFEL)) (Hallonsten 2014). Smaller-scale and networked European RIs and other similar entities were, similarly, companies or associations (Lindström and Kropp 2017).

The Treaties of Paris (1951), Rome (1957) and Brussels (1967) that founded the European Coal and Steel Community (ECSC) and the European Economic Community (EEC) included no provisions on collaboration in science, other than on the side of applied sciences, for instance within the European Atomic Energy Community, Euratom (Middlemas 1995: 21-22). Thus, it was not until the 1970s that science and technology became an area of European Community policy (Grande and Peschke 1999: 45; Papon 2004: 69-70), and not until the new millennium that the EU actively started to take part in the maintenance and development of a broad research base in Europe, through its ERA initiative.

Nonetheless, as noted above, (Western) Europe managed to establish a number of collaborative IOs in science, building on post-war technology optimism and the unprecedented resource mobilisation in science, innovation and education in the North America and Europe of the 1950s and 60s. Part of the reason behind the launch of CERN in 1954 was to counter the 'brain drain' from Europe to the United

States and to keep German nuclear physicists occupied with peaceful research (Krige and Pestre 1987). CERN and its later counterparts in other areas of science were also motivated by global competition which necessitated intergovernmental collaboration to achieve a critical mass and reach the necessary levels of competitiveness (Krige 2003; Hallonsten 2016: 53-56).

Since European collaboration in science was not part of the mainstream Western European political integration process (through the ECSC, EEC, European Community and EU), for the remainder of the century it stayed formally uncoordinated and dominated by ad hoc solutions and a variety of organisational forms and legal arrangements. As of today, the area of research and innovation belongs to the area of shared competences between the EU and the Member States (Article 4, Treaty on the Functioning of the European Union (TFEU)), where the EU has 'competence to carry out activities, in particular to define and implement programmes', while 'the exercise of that competence shall not result in Member States being prevented from exercising theirs' (Article 4, TFEU).

While national political systems normally have procedures and institutions in place to channel initiatives – big and small – in science (e.g. systems of national laboratories, and political decision-making processes) (Hallonsten and Heinze 2012), European countries collaborate with the help of a vast and complex assortment of political deals and negotiations on a variety of levels, for which there are usually no (directly applicable) rules or guides to rely on. Some analysts have claimed that this lack of coherence is in fact one of the reasons for the scientific successes of many of these collaborations, as it has kept bureaucracy and institutional inertia at bay and bred a dynamic efficiency in which every specific collaborative project is allowed to meet the demands of its particular scientific community at the time of its realisation (Papon 2004; Gaubert and Lebeau 2009: 38; Hoerber 2009: 410).

However, the incoherence and lack of framework, especially in comparison to the structured process of launching megaprojects in the United States (Hallonsten and Heinze 2012; Hallonsten 2016: 86-87, 94-95), also meant that the policy field was very opaque and cluttered, and it seemed nearly impossible to avoid repeating the mistakes of predecessors. This situation led Peter Tindemans, former Secretary General of the non-profit interest organisation EuroScience and former president of the OECD Megascience Forum, to reflect that 'Europe is not optimally organized' and that 'European policy wheels in this area more frequently keep churning and churning, and then after a long period come to a halt' (Tindemans 2000: 3). In practice, several collaborations have been blatantly exposed to the realpolitik of the mainstream European integration process, such as the British-French strains of the 1960s, which delayed the launch of ESO, the French-German partnership of the 1960s and 70s that enabled the creation of ILL and ESRF, and the problematic relationship between Germany and Russia in the early 2000s that put their mark on the structure of the XFEL collaboration (Hallonsten 2014).

Historians and sociologists of science have concluded that the difficulties in reaching agreeable solutions in a timely manner are due not only to insufficient regulatory frameworks and institutionalised practices, but also the basic reason for political collaboration. With very few exceptions, European countries do not take part in collaborations in science (or otherwise) other than out of self-interest – 'the pursuit of one's interests by other means' as Krige (2003: 900) phrased it; while a collaboration is many times far greater than the sum of its parts, and can give European scientific communities a global competitive advantage, as arguably happened in the case of CERN, ILL and ESRF (Hallonsten 2016: 72, 90).

Hence, tensions between self-interest and the common good represent a conflict of interest that shows up in many different forms in these collaborations. This is evident in the negotiations over financial contributions, including the often difficult issue of domestic taxation, in the decision over siting, in the devising of schemes to regulate procurement of goods and services and the allocation of access to joint resources among national scientific communities (Hallonsten 2014: 43-45). In other words, the room for active policymaking in this area by the European supranational legislative and

polycymaking body, to reduce barriers to successful launches of collaborative endeavours and ease tensions between national self-interest and common good, is significant.

THE INCREASED INVOLVEMENT OF THE EU IN RESEARCH POLICY

It was not until the 1970s that the European Community began paying attention to interstate collaboration in science and technology and at first the efforts were targeted at specific technological areas identified as important for European long-term economic growth (Tindemans 2009: 14). Specifically, on the side of RIs, it took until the Second Framework Programme (FP2, 1987-1991) before any funding was made available. Within it, a 30 million European Currency Unit (ECU) budget was allocated to the 'use of major installations' (European Council 1987). This fund was expanded gradually over the years and the successive framework programmes, but it was not until the early 2000s and the launch of the ambitious ERA initiative that RIs got a prominent position in EU-wide science and technology policy.

One of the tasks of the ERA was to enable the creation and operation of world-class European RIs (Chou 2014; Ryan 2015). As a result, in 2002, the policy coordinating platform ESFRI was set up by the initiative of the European Council in order to carry out a coherent EU-wide policy on existing and upcoming RIs (Papon 2009: 40). ESFRI is composed of national delegates and a representative of the Commission, and its nature and purpose may be looked upon as one of the means of realisation of the ERA objectives in the realm of RIs (Ryan 2015: 309).

ESFRI may also be described as a soft mechanism of policy coordination: it has been able to set some priorities by performing an EU-wide 'inventory' of new RIs and major upgrades of the existing projects of pan-European importance (Pero 2010; Feder 2016), much like the national processes that have been accomplished in parallel in most EU Member States. However, ESFRI's mandate neither covers funding nor real political priorities, and so the task of shepherding promising RIs towards realisation is still left to the Member States to negotiate. The ESFRI inventory, which is updated regularly and published in a 'roadmap' document (ESFRI 2006, 2008, 2010, 2016, 2018) has been criticised for being an 'impossible wish list' without differentiation between large and small infrastructure projects and with insufficient connection to the real processes of political decision-making around RIs in Europe (Springfellow 2016).

If the ERA made RIs a priority of EU research policy, the Europe 2020 strategy placed them in an even more elevated position: pan-European RIs were declared a 'pillar' of the strategy and pictured as the 'engines' which are expected to drive forward the EU economy by advancing its science and technology (European Commission 2008; ESFRI 2008a). Following this aspirational discourse, the EU bureaucratic machineries got to work on hammering out practical initiatives in the RI domain, which eventually produced the ERIC regulation. In 2007, the Commission took stock of the development of the ERA within the European Council's 2000 Lisbon Strategy (European Council 2000) in a specific green paper in which the ERA was described as the 'internal market for research' – an area which should allow for the free movement of researchers and free circulation of knowledge (European Commission 2007).

While acknowledging that progress had indeed been made, the Commission highlighted the fragmentation of research activities as a concern for the ERA, with research activities still largely confined to individual Member States. These concerns, the Commission said, could in part be met by establishing and operating 'world-class research infrastructures, integrated, networked and accessible to research teams from across Europe and the world' (European Commission 2007: 2). Pan-European infrastructures could be in service for the entire EU and would replace dispersed national and regional funding, tackling ineffective allocation of resources, potential duplication of research efforts and

results, as well as the inability to capitalise on spillover effects. It may thus be concluded that stimulation of the establishment of RIs was imperative in enacting the ERIC framework.

Additionally, and perhaps most significantly, initiating new and important research activities would entail sharing construction and operation costs among several Member States, with the Commission noting, as an example, that EU budgetary plans could not cover the estimated costs of ESFRI's 2006 vision of European infrastructures (European Commission 2007: 12-13). Thus, the Commission placed focus on the need for effective financing channels and finding ways to generate the necessary financing for setting up RIs with the ultimate goal of attaining the ERA goals. On the other hand, this also raised another significant issue standing in the way of an efficient set-up of new RIs: the EU (or individual Member States) provided neither a legal structure for setting up 'appropriate partnerships', nor a specific legal framework facilitating the creation of pan-European infrastructures (ibid.: 13-14).

In July 2008, the Commission presented a proposal for a legal framework for what it called ERI (European Research Infrastructure), and promptly forwarded it to the European Council and the consultation bodies – the European Parliament (EP), the Economic and Social Committee and the Committee of the Regions – in accordance with the legislative procedure set forth in Article 188 (TFEU). In general, the opinions of all three institutions and bodies were in favour of the proposed legal framework and the Commission's initiative was approved, with suggestions for amendments, in particular from the EP.

The amendment demands from the EP were aimed at reducing the legal form's commercial character and activities and minimise, or exclude, the participation of private actors while apparently elevating centralisation, i.e. added EU involvement in the establishment and operations of RIs (European Parliament 2009). The Commission gave its comments on the EP's amendment suggestions in early 2009, which resulted in a partial agreement. In the spring of 2009, an agreement was reached on the amended proposal in the Council, with the proposal adopted in June 2009 (European Commission 2008a; European Council 2009). By then, the framework had been renamed ERIC – European Research Infrastructure Consortium – verbally signifying the responsibilities put on the collaborating Member States, rather than the EU. In August 2009, the ERIC regulation was published in the Official Journal of the European Union and entered into force later that month.

THE LEGAL FOUNDATIONS OF ERIC

The EU is based upon the rule of law and only has the competence to act in accordance with what its Treaties (currently the Treaty on European Union (TEU) and the TFEU) allow. Thus, even though the improvement of the conditions for intergovernmental scientific collaboration by creating a specific EU legal instrument was widely accepted as the right thing to do by the EU, Member States and other stakeholders, the Commission still needed to find a sufficient legal basis for its suggestion, i.e. Treaty provisions from which the proposed legal framework could derive its legality. Article 181(2) TFEU allows the Commission to take 'any useful initiative' to promote the coordination between Member States of research and technological development activities, and Article 187 empowers it to set up 'joint undertakings or any other structure necessary' in order to execute the EU's research programmes. The Commission did indeed consider the possibility of introducing the new RI legal form as a joint undertaking (European Commission 2008b: 19), noting the Galileo satellite navigation system as an example of a use of that form. However, the actual financing of the Galileo system and other projects set up as joint undertakings turned out to be more homogenous, with the EU remaining the main source of financing. That, along with the high level of EU involvement in general, led the Commission to recommend against using the joint undertaking for the proposed European RIs (ibid.: 19).

As a consequence, the Commission, recognising the lack of specific legal form for RIs under EU law, and the inadequacy of existing legal forms under EU and different national laws, made full use of article 187 in the TFEU, and its option to set up a new, ad hoc structure (European Commission 2008b: 20). The structure proposed was in the form of a Council regulation, namely the ERIC regulation (European Council 2009). Using Article 187 of the TFEU as a legal basis in this manner was, in the Commission's view, substantiated by Article 179 of TFEU, which put the obligation on the EU to complete an internal ERA, for example by removing 'legal and fiscal obstacles' so that cross-border research cooperation could be fully exploited. Hence, policy motives and the legislative powers of the EU enabled the passing of the regulation on a new policy instrument for the area of research and innovation, with an ultimate goal of simplification of the set-up and operation of RIs.

A particularly notable feature of this legal instrument is that its use by the Member States willing to collaborate on the matter of RI, is conditional upon authorisation by the Commission and its continuous monitoring that the RI in question operates in accordance with the ERIC regulation. For that purpose, a comitology committee was set up in 2009 (European Commission 2010). In that sense, the decision to curb the EU's (European Commission's) role in the operations of individual ERICs is in line with one of the main principles of the EU – the principle of subsidiarity. The principle allows intervention by the EU 'only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States [themselves], but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level' (TEU, Article 5).

The principle of subsidiarity is often referred to as a mechanism for balancing power between individual Member States and the integration objectives of the EU (Öberg 2016). Therefore, while Articles 181 and 187 of the TFEU empower the Commission to 'take any useful initiative to promote the coordination' of research and technological development activities among the Member States, and 'set up joint undertakings or any other structure for the efficient execution of Union research, technological development and demonstration programmes', the regulation stresses that ERIC 'should not be conceived as a Community body [...], but as a legal entity of which the Community is not necessarily a member and to which it does not make financial contributions [...]' (European Council 2009). In other words, the EU does not intend to become a partner in pan-European RIs alongside those Member States that choose to collaborate.

Indeed, the fact that the initially proposed name for this legal instrument – European Research Infrastructure (ERI) – became European Research Infrastructure Consortium (ERIC) may signify an intentional setting of the tone in terms of responsibilities (monetary or in-kind contributions for RI), i.e. that they lie not with the EU, but rather with the collaborating Member States. Therefore, the role of the EU is that of the facilitator: with the capabilities of a supranational body, the EU put forward a practical policy instrument for Member States to implement. Nonetheless, the launch of the ERIC framework meant that the Commission, as an executive arm of the EU, now has a more active role in the RI domain than ever before, although its present intention is to remain an observer and a facilitator, rather than an equal stakeholder.

Therefore, from the policy perspective, ERIC may be viewed as a new legal instrument, devised to overcome barriers that may be political, but the proper remedy to which – at least in the view of the Commission – is through legislation. When the Commission proposed the enactment of the ERIC regulation, its main objective was to make it easier for different actors to join forces and ensure that cross-border collaborative research activities get set up more quickly and smoothly (European Commission 2008c; European Commission 2018). The idea was that the ERIC framework would provide a specific legal form for such research projects, given that the existing ones were deemed insufficient due to the involvement of multiple actors of different nationalities and jurisdictions (European Commission 2008c). It may therefore be posited that one of the main benefits of creating a specific legal form for pan-European RIs was down to sheer simplification, introduced on the basis of historical

experiences of delays, incoherence, and inability (European Commission 2008b). Hence, we may conclude that stimulation and simplification were the two main driving forces behind the creation of this new legal form.

THE ERIC REGULATION

Before addressing individual provisions of the framework provided by the ERIC regulation, it is fitting to describe briefly the essence of and main objectives behind its structure. Simply put, the ERIC regulation sets up a framework for establishing and operating infrastructures in a specific legal form, which has to involve at least one Member State and two other countries that are either Member States or associated countries. In addition, other (non-EU) countries and intergovernmental organisations can also join as members or observers. Thus, on the basis of the regulation, the EU Member States that are working on, or interested in setting up a cross-border research activity in a certain field, can apply to the Commission to establish their activity (the infrastructure) with the help of the ERIC legal form, i.e. to establish the infrastructure as a legal entity with full legal personality and the legal name ERIC.

While the overall objective of the ERIC legal framework may be seen as the provision of a platform for the EU Member States to combine their resources and efforts in order to set up cooperative RIs (simplification), the narrower focus is on getting Member States to actually use the ERIC legal form and thereby contribute to the advancement of the internal European research market (stimulation). Thus, one of the main challenges was to create an instrument that is flexible, easy to use and can be set up relatively quickly (European Commission 2008b: 36). In terms of flexibility, the framework requires that application to the Commission is accompanied by statutes – a prospective constitutional document – which should be in compliance with the mandatory features of an ERIC facility, as set forth in the regulation. This should allow for flexibility in terms of structuring each ERIC in accordance with the various research fields they serve. In terms of saving time and effort, which is considered imperative, the legal framework is expected to bring several advantages.

First, lengthy negotiations between different states on the appropriate legal arrangement with the entailing analysis of different national (and European) legal forms, would be avoided, as well as the search for alternative solutions in case existing legal forms needed to be adjusted or complemented (European Commission 2008b: 32). This framework would thus present a ready-to-use legal form that would ensure the full recognition and capacity of the legal person established in all Member States. Second, the intention to have the legal form recognised as an IO for the purposes of, inter alia, escaping the payment of VAT and excise duties would solve one of the potential negotiation obstacles between interested states, as the non-host states would not need to worry about unequal positions in terms of obtaining benefits from investing in the infrastructure, i.e. that those states that participate and provide financing without hosting the RI would be financing the payment of VAT to the host state (European Commission 2008b: 34). Third, many multinational research projects have been established by international agreements. By setting up a new legal entity for research purposes with the Commission's acceptance, based upon EU regulation with the legal base in the Treaties, the Member States would not have to go through the cumbersome process of having an international agreement ratified in national parliaments (European Commission 2008b: 32), or getting their respective foreign ministries involved and thus prolonging the internal negotiations.

The details of the regulation³ indicate that it provides a legal form for RIs and a legal framework around that legal form. The legal form can be subsequently used to establish individual (and, purportedly, independent) legal persons, which should have the abbreviated word 'ERIC' as a part of their legal name. This is the essence of the regulation: putting a legal form at the disposal of actors (mainly EU Member States), which can then establish legal persons that operate within that legal form and its

framework. The nature of the operation of ERICs is limited: they shall principally be occupied with establishing and operating RIs⁴. A crucial feature of an ERIC is that it is not commercial in nature and should therefore carry out its activities on a non-economic basis (Article 3(2)). This means that ERICs should not look to commercialise their activities by offering the products of their operations on a market in return for remuneration. Nevertheless, an important caveat is added as ERICs are allowed to engage in 'limited economic activities' that are closely related to the main research task and which do not impede its fulfilment (Article 3(2)). Thus, the regulation opens the door for limited commercialisation of the research work of an ERIC, justified by boosting innovation and the transfer of technology (Preamble, Recital (8)). An obvious example in this regard would be the licensing of certain IP that has been discovered and developed within the operations of an ERIC, by creating a spin-off company (European Commission 2010a: 13).

For a project to be accepted as an ERIC, it has to have certain essential elements of a European RI. Namely, the project must justify excellence of European research in a broader sense and add something valuable to the ERA, including being accessible to researchers and contributing to the dissemination and mobilisation of knowledge and information within Europe (Article 4). The research activity can thus not be an isolated one with limited value for the EU as a whole but should rather be a contributing factor in achieving an integrated European research market. This must be clearly outlined in the application for ERIC status, which should be submitted to the Commission along with the proposed statutes of the ERIC-to-be and a declaration by the host Member State that it will give the ERIC the status of an IO within its jurisdiction (Article 5).

The Commission⁵ is the EU institution tasked with evaluating applications for ERIC and making final decisions on whether they may be established. The Commission assesses whether a project, and its application, fulfils the above requirements and other conditions in the ERIC regulation, advises on necessary changes and subsequently adopts a decision, either rejecting or accepting the application (Article 6). The Commission's acceptance is in the form of an implementing decision published in the EU's Official Journal along with the main features of the statutes of the proposed ERIC. Although neither stipulated in nor intended by the regulation, the Commission also appears to undertake the role of an incubator, providing funding for the preparatory phase of these collaborative projects and, along with ESFRI, overlooking their developments (ESFRI 2016, 2018).

Only EU Member States, associated countries⁶, other third (non-EU) countries, and IOs can be members of an ERIC; hence, private actors cannot. Members may come and go, but an ERIC must at all times be formed of at least one Member State and two other states, which are either Member States or associated countries. Initially, this requirement was limited to Member States alone, of which there had to be at least three at any point in time. In 2013, the ERIC regulation was amended to reflect better the contribution of associated countries to the ERA and give them a better opportunity of participating in European RIs (Amendment, Preamble and Article 1). As a result, in 2017, Norway became a host nation to two ERICs. This development demonstrates the fact that as the ERIC legal framework is based on secondary EU legislation, it is susceptible to change.

The regulation also provides a simple frame for the governance structure of ERICs, with the structure being further detailed in their statutes. However, the statutes should at least allow for an assembly of members, as the highest authority that appoints a board of directors, or a director, as an executive body and legal representative (Article 12). The important matters regarding the rights and obligations of members are left to the statutes, including the crucial matter of members' financial contributions and voting rights (Article 10(1)(h)). However, voting rights do not necessarily correspond to members' input as Member States or associated countries, or a mixture of the two, shall at all times jointly hold the majority of voting rights (Article 9(3)). Thus, irrespective of third countries or IOs providing the bulk of funding for an ERIC, the power to decide on the essential matters of the ERIC should still be in the hands of the EU member countries, or states closely associated with the EU, in accordance with 'the

[EU] dimension of the regulation' (Preamble, Recital (14)). On a similar note, the statutory seat of the ERIC legal entity shall be in a Member State or associated country (Article 8(1)).

An ERIC facility is a legal entity that shall have full legal personality from the effective date of the decision by the Commission and full legal capacity in each Member State, which allows it to enter into all kinds of lawful contracts, have rights and bear responsibilities and be party to legal proceedings to the greatest extent accorded under the law of each Member State (Article 7(1)-(2)). Of course, the EU is not competent to oblige associated countries to recognise ERICs as legal persons with full legal capacity, and thus the regulation does not refer to them in this context. In its first report on ERIC, the Commission states that

associated countries or third countries to which the ERIC regulation is not directly applicable, [...] need to submit a binding declaration recognizing the legal personality and the privileges of an ERIC for possibly hosting (in the case of associated countries) or becoming a member' of an ERIC (European Commission 2014: 5).

The recent report of the Commission on ERIC points out that so far only Israel and Serbia have submitted those declarations (European Commission 2018: 7).

Additionally, ERIC as a legal person has two important and distinguishable characteristics. First, the general rule is that an ERIC is a legal person where members have limited liability – their liability is limited to the financial contributions they make (Article 14(2)). Another, greater, liability structure can be put forward in the statutes, but limited liability is still the general rule. In relation thereto, the regulation expressly states that an ERIC, as an independent legal person, is liable for its own debts and, furthermore, that the EU shall not be liable (Article 14(1)). The regulation's built-in rationale for such a liability regime is that it logically follows from having its own legal personality and would also allow for more efficiency in operations, although, notably, the assertion on efficiency is not further elaborated upon (Preamble, Recital (20)). Second, ERICs should have the status of IOs (and bodies) in two predetermined and delimited situations: (1) in general enjoying certain exemptions IOs get in terms of paying taxes (VAT and excise duties) (Article 5(1)(d)); and (2) from complying with public procurement rules, when buying goods and services (Article 7(3)).

It is also relevant to address briefly the applicable law and jurisdiction – issues which are of paramount importance when establishing a legal form that not only intends to operate on a cross-border basis, but because such an element is a prerequisite for its existence. The regulation sets forth the following hierarchy in terms of laws applicable to the establishment and operations of ERICs: first, EU law, including the ERIC regulation, shall apply. Second, the law of the state where ERIC has its statutory seat (which could be an associated country) shall apply in instances and situations not covered by EU law. Third, the statutes of the specific ERIC, as codified by a Commission implementing decision, shall apply (Article 15(1)).

ONE SIZE FITS ALL?

Viewed from the perspective of organisational studies, the features immanent to a facility set up under the status of ERIC are mixed and may thus characterise ERIC as an international body, a public, or a private entity. Hence, a certain hybridity is present in organisations under this legal-administrative status. Hybridity in this sense refers to a condition of 'mixed origin or composition of elements' (Denis, Ferlie and van Gestel 2015: 275). This mix is particularly evident in the fact that ERIC is neither an EU agency, nor a part of its Member States (Reichel et al 2014: 1056). While it possesses some of the attributes of an IO (e.g. procurement and VAT exemptions), it also adheres to national laws (e.g. employment legislature) and its statutes (e.g. data or IP policy).

In view of the implementation of the ERIC regulation, while it provides certain simplifications during set-up and other benefits, ERIC is still a novel creation that is not fully recognised by the external actors with whom RIs under this legal status come in contact (European Commission 2018). This novelty reportedly poses challenges to the everyday life of ERICs, such as in registrations under the national legal systems, opening bank accounts, applying for loans or claiming reimbursement of VAT and excise duties (European Commission 2014, 2018). Hence, some of the features of this legal form are yet to get diffused from the EU level down to the Member States levels and to become recognised and accepted norms among the rest of the society.

As mentioned above, the diversity within the group of existing ERICs is striking (see table in Appendix). In the taxonomy used by ESFRI in its roadmap reports, five are in the area of 'social and cultural innovation', six in 'environment', five in 'health and food' (however, rather in the 'health' and not in the 'food' part of this classification), three in 'physical sciences and engineering', as well as one in 'energy'. But the dissimilarities do not end there. The variation in budgets, both for construction and operation, is enormous: the most expensive ERIC, the European Spallation Source which is a neutron source for multidisciplinary materials science, costs a thousand times more to establish than, for example, the European Clinical Research Infrastructure Network (ECRIN), which costs only 1/70 of the European Spallation Source in annual operation costs (ESFRI 2016). Quite trivially, this diversity implies a great diversity of organisational structures and goals, standards for evaluation, stakeholders, users, levels of political discussions and decision-making. Furthermore, despite the majority of the existing ERICs being distributed by their nature – meaning that they are composed of networked resources or nodes spread out in the collaborating Member States – only the coordinating office of such an RI may be exempt from VAT. Hence, it appears the matter of VAT, and particularly the possibility of VAT exemption for in-kind contributions, has yet to be worked out between the Member States and the EU (European Commission 2018).

Moreover, despite the intended stimulation, the ERIC regulation and its practical manifestation in twenty RIs appears to diverge from mainstream EU policy, including RI policy. For example, in spite of ESFRI's prioritisation of the area 'food', so far no ERIC has been established in that area. Besides, two of the existing ERICs are not even on the ESFRI roadmap. Furthermore, the involvement of non-EU countries in ERICs and such a gesture as the UK becoming an official member of the European Spallation Source ERIC in 2016, despite Brexit, or even becoming a host of its second ERIC in 2017, signals that RIs continue to occupy a side track of European policy. The EU and the UK, however, explicitly mentioned the need to explore the future of the UK's participation in the ERICs (European Council 2018: 5). On 16 January 2019, the UK amended its legislation in favour of 'Continuing ERIC Regulation' after the exit (UK Statutory Instrument 2019). It is, however, still, to a large extent undecided what measures will be taken in relation to the UK's participation in ERICs – including with respect to the two ERICs hosted by the UK – after it leaves the EU without a deal, which will likely lead to the UK being neither a member, nor an associated country under the ERIC Regulation (UK Parliament 2019).

In this regard, all but one of the Commission decisions establishing ERICs after the UK notified its intention to leave the EU in March 2017 address Brexit, albeit in a very limited manner. Thus, regarding Instruct-ERIC, with its statutory seat in Oxford, the Commission implementing the decision states that, if 'the United Kingdom ceases to be a Member State and without prejudice to the provisions of a possible withdrawal agreement, the Statutory Seat of Instruct-ERIC will be relocated to the territory of a Member State or associated country [...]' (European Commission 2017). Further, the Commission, implementing the decision establishing the latest ERIC, EPOS ERIC, states that the UK will, upon leaving the EU, and unless a withdrawal agreement stipulates otherwise, be considered as a third country within the meaning of the ERIC regulation (European Commission 2018a).

In light of the ambition of simplification in the context of the EU bureaucracy, the approach of the ERIC regulation of providing a single legal form for different kinds of RIs seems logical; however, from the perspective of organisational studies, science policy studies, and history of science, this variety would suggest that the current categorisation of RIs is rather artificial and the identification of the twenty RIs in the table (see Appendix) as an organisational field appears unnatural, both as an act of scholarly work and policymaking (Hallonsten forthcoming 2020). The logical implication of the discussions on the flexibility of ERIC's legal form is the question of whether in fact practically any kind of research collaboration – as long as it fits into the broad criteria of the ERIC regulation – may qualify to become an ERIC? And if so, what effect does it trigger in terms of the ultimate goal of attaining a sustainable RI landscape, able to contribute to the competitiveness of the EU in the global knowledge economy? We encourage future research to look into these questions.

An interesting development worth mentioning is that recognising their differences, but also acknowledging the similar challenges faced by the established ERIC facilities, an informal ERIC Network was formed in 2014 (European Commission 2014). The representatives of the already established ERICs or those in the application process, along with representatives from the Commission and on occasion representatives from national research ministries, meet twice a year in order to exchange best practices and communicate with one another and the Commission (European Commission 2018). As of 2017, the network transferred to a more formal structure, titled the ERIC Forum (CERIC ERIC 2017), the purpose of which – apart from dealing with the common challenges – is also 'to contribute to the further development of the ERIC Regulation, ESFRI framework and European and international research context' and 'to foster the visibility, impact and sustainability of ERICs' (ERIC Forum 2018). This action may signal that even though these diverse organisations do not constitute a single organisational field (Hallonsten forthcoming 2020), their shared interests lead to coalition-building with an evident intention to promote common interests and ensure visibility at various levels.

CONCLUSION

This article has characterised the nature of ERIC as a legal instrument, determined the causes which led to its enactment in the form of an EU regulation and traced the process of its emergence by focusing on the policy and legal developments. The ERIC legal framework was launched by the Commission in order to alleviate a major concern that existing structures for the creation and organisation of European collaborative RIs were insufficient. In addition, another motivation was to facilitate a swifter move towards the goals of the ERA initiative. Therefore, stimulation and simplification were identified as the main driving forces behind ERIC.

Without doubt, the legislative powers allowed the EU to enact this legal tool for RIs and in this way obtain a solution that national legal systems could not fully provide. Once RIs are established under the status of ERIC, they should, as a matter of EU law, be recognised as legal persons and attain some features of IOs. Those include VAT and excise duty exemptions, as well as eased procurement rules. Nonetheless, the benefits that an ERIC facility is supposed to attain – despite nearly a decade having passed since the instrument's enactment – still have not become fully accepted at the levels of individual Member States. This is particularly evident in instances when ERICs as legal persons engage in day-to-day encounters with such external actors as financial institutions or national registry offices (European Commission 2014, 2018).

Furthermore, the diversity of the ERICs has proved to be striking. The all-encompassing and flexible nature of this instrument allows scientific organisations of different forms, sizes and missions to be set up and operate under the status of ERIC. Despite their differences, the current twenty ERICs have since 2014 been engaged in a forum, which may be seen as an informal interest grouping of these novel creations that advocate for their own visibility and recognition. The all-encompassing nature of the

legal form is also evident from the 2013 amendment of the ERIC regulation which ensured increased involvement from the associated countries. In addition, the 2013 amendment of the ERIC regulation serves as a reminder that ERIC is not set in stone and, being secondary EU legislation, is susceptible to change. This means that its flexible structure allows it to adjust to the challenges which the EU may face in the future. In the course of time, an amendment could, for example, completely alter this legal form and, possibly, even remove it. Currently, ERIC mostly fulfils the function to set up RIs and once they start running and entering subsequent stages of their life cycles, new challenges may emerge and continued legislative solutions might be the way to respond to them.

We would therefore like to encourage continued scholarly efforts within Political Science, Law, Sociology and Economics in order to evaluate what precedents the current state of ERIC legal form may set for the future of collaborative scientific organisations and their governance. Such scholarly inquiries can, with significant reward, begin with problematising the ERIC framework as a policy tool for achieving political, organisational and legal consistency in a field where incoherence has long ruled and where the current science policy regime – on the European, as well as the level of individual Member States – depends on coordinated efforts on behalf of the EU. Moreover, a decade since its enactment, it might also be time to start reflecting on whether the key ambitions are being fulfilled by the ERIC regulation. Such studies will require longitudinal analyses and an extensive time-frame and we therefore encourage starting data collection immediately.

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ENDNOTES

¹ We use ERIC in plural as a collective noun, meaning RIs set up under the ERIC status.

² Formerly the Megascience Forum.

³ The remainder of this section gives a summary of the ERIC regulation and therefore references are given to specific articles in the regulation, unless otherwise stated.

⁴ Which are defined as ‘facilities, resources and related services that are used by the scientific community to conduct top-level research in their respective fields and cover major scientific equipment or sets of instruments’ (Article 3(1), cf. Article 2(1)(a)).

⁵ The Commission is also required to obtain opinions from independent experts (Article 5(2)).

⁶ An associated country is ‘a third country which is party to an international agreement with the [EU], under the terms or on the basis of which it makes a financial contribution to all or part of the [EU] research, technological development and demonstration programmes’ (Article 2(1)(c)). The Agreement on the European Economic Area (EEA) would be an example of such an agreement, with Norway, Iceland and Liechtenstein thus able to become ‘associated countries’ in an ERIC.

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APPENDIX

Table 1: The twenty existing ERICs to date, in chronological order (as of 18 August 2019)

Acronym	Full Name	ESFRI area	Statutory seat (country)	ERIC status granted	Capital value (M€)	Oper. costs (M€)	No of founding member states*
SHARE	The Survey of Health, Ageing and Retirement in Europe	Social and Cultural Innovation	Munich (DE)	2011	250	18	5
CLARIN	Common Language Resources and Technology Infrastructure	Social and Cultural Innovation	Utrecht (NL)	2012	n/a	14	9**
EATRIS	European Infrastructure for Translational Medicine	Health and Food	Amsterdam (NL)	2013	500	2.5	8
ECRIN	European Clinical Research Infrastructure Network	Health and Food	London (UK)	2013	5	5	5
ESS	European Social Survey	Social and Cultural Innovation	Graz (AT)	2013	n/a	2,5	15
BBMRI	Biobanking and Biomolecular Resources Research Infrastructure	Health and Food	Paris (FR)	2014	195	3.5	16
EURO-ARGO	EURO-ARGO	Environment	Brest (FR)	2014	10	8	9
CERIC***	Central European Research Infrastructure Consortium	Physical sciences and engineering	Trieste (IT)	2014	100	10	6
DARIAH	Digital Research Infrastructure for the Arts and Humanities	Social and Cultural Innovation	Paris (FR)	2014	4.3	0.7	15
JIVE***	Joint Institute for VLBI ERIC	Physical sciences and engineering	Dwingeloo (NL)	2014	n/a	2.5	4

Acronym	Full Name	ESFRI area	Statutory seat (country)	ERIC status granted	Capital value (M€)	Oper. costs (M€)	No of founding member states*
-	European Spallation Source	Physical sciences and engineering	Lund (SE)	2015	1,843	140	15
ICOS	Integrated Carbon Observation System	Environment	Helsinki (FI)	2016	116	24,2	9
EMSO	European Multidisciplinary Seafloor and Water Column Observatory	Environment	Rome (IT)	2016	100	20	8
-	Life Watch	Environment	Seville (ES)	2017	150	12	8
ECCSEL	The European Carbon Dioxide Capture and Storage Laboratory Infrastructure	Energy	Trondheim (NO)	2017	1000	0,85	5
CESSDA	Consortium of European Social Science data Archives	Social and Cultural Innovation	Bergen (NO)	2017	117	39	15
INSTRUCT	Integrated Structural Biology Infrastructure	Health and Food	Oxford (UK)	2017	400	30	14**
EMBRC	European Marine Biology Resource Center	Environment	Paris (FR)	2018	164,4	11,2	9
EU-OPEN-SCREEN	European Infrastructure of Open Screening Platforms for Chemical Biology	Health and Food	Berlin (DE)	2018	82,3	1,2	7
EPOS	European Plate Observing System	Environment	Rome (IT)	2018	32	18	12

Notes: * including observers **including international organisations *** not on ESFRI roadmap

Sources: ESFRI 2016, 2018, EC decisions on ERICs, websites of RIs