

## RESPONSE BY ALLEA TO THE FIRST DRAFT OF THE UNESCO RECOMMENDATION ON OPEN SCIENCE

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ALLEA, the European Federation of Academies of Sciences and Humanities, has participated in the design of the survey co-ordinated by the International Science Council. It has distributed it via its social media channels to relevant audiences as well as to individual members of ALLEA's Open Science Task Force and some ALLEA working groups. The purpose of this response is to capture some general observations that are not easily captured in the individual responses and it should be seen as a supplement to these. It reflects in particular concerns of the working groups on intellectual property and on science and ethics.

We note that while the current draft has a long section entitled "Definition of Open Science" this is still open to multiple interpretations linked in large part to the semantic ambiguity of the word "Science" in the English language. On a narrow reading it could be taken to refer to the natural sciences only, to the exclusion of the social sciences and the humanities. While this is clearly not the intention, we feel it would be preferable to say "Science and Scholarship" or use the more generic term "Open Research". At the other extreme, the definitions can be interpreted so widely that it is not clear what is excluded. Of course, the "demarcation problem", as it is known in the philosophy of science, is a notoriously difficult issue and certainly not one capable of being solved in a political declaration, but this does suggest that more attention needs to be paid to the concepts of "validation" and "peer review" if we are to avoid pseudo-science creeping in and taking advantage of the opportunities presented by open science.

This leads rather naturally to one of our main concerns, which is that inadequate attention is given in the draft to important questions of responsibility, ethics and governance. Opening up the research process and making it more transparent and accessible is clearly desirable but does carry with it dangers of abuse. This is nothing new of course. Science and scholarship from the earliest times have had to deal with over-exaggerated claims, pseudo-scientists, undisclosed conflicts of interest, and occasional outright fraud. One response has been to emphasise the need for agreed standards such as the ALLEA [European Code of \*\*Conduct\*\* for Research Integrity](#). With the wider, faster, and less controlled dissemination of research outputs that open research brings there has to be a greater responsibility on researchers to carefully consider the impact of their research and to observe appropriate disciplinary ethical standards. Of course, voluntary codes can only go so far and in the end there will have to be some form of gate-keeping attached to the open infrastructures on which open research is predicated. Thus, the governance of such infrastructures is an important issue where we feel that it is essential

to have strong representation from the research communities themselves to avoid capture by commercial or political interests and to protect academic freedom. In this context it is worth noting the recently published Principles of Open Scholarly Infrastructure<sup>1</sup>. Particularly in the social and economic sciences we need to be careful to avoid attempts by political interests to unduly influence research directions and restrict access to data, but as the pandemic has sadly taught us this can also happen with medical and even biological data. Equally we need to avoid capture of what is intended to be a public good by rent-seeking commercial entities; the commercial publishers make no secret of the fact that they see their future as information brokers operating in a data economy, which is fine if they add value to an otherwise open system, but they must not be allowed to monopolise the system as they did with the traditional scientific journals.

Finally, we turn to the thorny issue of intellectual property rights and how they sit within open science. Nobody is going to object to the principle “as open as possible, as closed as necessary” but what does that really mean? *Prima facie* there is some tension between the desire to open up research data and knowledge as much as possible and the desire to valorise research as a driver of innovation and new technologies through licences and patents. We think this is largely a false dichotomy. It is worth recalling that the original purpose of patents was and still is to put information about valuable discoveries into the public domain in return for time-limited rights over exploitation. Thus patents, in as much as they are designed to turn what would otherwise be trade secrets into open knowledge, can be seen as instruments of open research. However, it is the case that intellectual property law, and in particular patent law, does need to modernise and adapt to the new era of faster and more open research. ALLEA has argued for many years that the requirement to keep results and ideas secret until a patent is filed is unnecessary and that a grace period, as already allowed in some jurisdictions, whereby a patent application can be filed after publication within some time limit is preferable. Combined with reforms of the international patent system to make it faster, easier and more open this would greatly ease acceptance of open research principles in areas that may have commercial potential.

The other big area of intellectual property law as it affects research is copyright. Here the creative commons licences already represent a relatively good attempt at reconciling copyright law with the global common good ideals of open scholarship. There are however issues, especially around text and data mining, and it might be helpful to refer to the 2019/790 European Union directive in this area as an example of what is required by developments in artificial intelligence and machine learning, although some conditions for the text and data mining exceptions still need to be clarified (e.g. how an opt-out can be expressed). Thus, solutions are available but more work is required by legal scholars and legislators to better align intellectual property concepts with open research, in particular in the area of data rights, patents and artificial intelligence. We

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<sup>1</sup> <https://openscholarlyinfrastructure.org> Bilder G, Lin J, Neylon C (2020).

note that the CESAER group of European Universities<sup>2</sup> has recently held a meeting on the topic of “Openness and commercialisation” where i.a. they state “Despite a common (mis)understanding, commercial exploitation is compatible with Open Science and can play a synergistic role reinforcing each other by building trust and increasing impact. But, in order to do so successfully, these two sides need to find common understanding of each other’s needs and wishes and closely collaborate to maximise the positive impact they can have on society.”

In summary, while we welcome the ambition of the UNESCO recommendations, and recognise the limitations of a political document addressed in the first instance to member states, we would have liked to see more emphasis on research integrity, academic freedom and governance as well as more detail in the proposed actions, for example in the area of intellectual property rights. The document is very aspirational and quite verbose; in a second draft we strongly recommend aiming for a more concise and focused version with clearer action points.

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<sup>2</sup> <https://www.cesaer.org/events/openness-and-commercialisation/>