

OPINION

"Plan S" falls short for society publishers—and for the researchers they serve

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Over the course of my long scientific career, I have had experience with academic publishing from several perspectives: as an author, as an associate editor of both academic and for-profit journals, as chair of a society's journals board, as editor-in-chief of a major society journal (*Science*), and now as the chief executive of a membership organization (the National Academy of Sciences) that publishes a highly regarded society journal (PNAS). While for-profit publishers do bring value to the overall enterprise, ultimately I decided to direct my own research output (whenever it was my choice to make), time, and talent to nonprofit

scientific society publishing. I see merit in redirecting publishing profits to enhance the welfare of the research community through the variety of society programs that support students, underrepresented minorities, community engagement, and other worthy causes—rather than having those monies benefit for-profit shareholders.

In recent decades, society publishers have responded to a number of changes in the publishing landscape. In all cases, these responses have been guided by the wisdom of leading researchers serving on oversight boards charged with ensuring the overall



The proposal known as Plan S has the admirable aim of achieving full OA across a wide swath of journal publications. But the path currently suggested has serious drawbacks that could jeopardize nonprofit science societies. Image credit: Dave Cutler (artist).

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health of the research enterprise. This charge is, of course, broader than simply the broadest dissemination of the research or necessarily the lowest-cost publication model. I continue to monitor that landscape, knowing that further changes are inevitable and part of scholarly publishing's evolution as it aspires to serve science and society.

Hence, I, like many in scientific society leadership and publishing, have been following with great interest the ambitious plan ("Plan S") put forward in September by a group of European funding agencies. But although well-intentioned, several aspects are troubling and problematic for society publishers and the scientific community at large. These aspects require serious discussion and, in some cases, a rethink.

The aim of the plan is to guarantee that all scientific reports funded by participating agencies—a group that currently includes 13 European research funding organizations and three charitable foundations from a total of 13 countries—are published in compliant open access (OA) journals or on compliant OA platforms (1). Plan S funders are actively encouraging other governments and funders to join them.

I am also concerned that the architects of Plan S have not consulted broadly with researchers, editors, and leaders of scientific societies to obtain their views of how devastating this plan might be for the very organizations that support researchers and their disciplines.

Aside from the 16 official participants, other entities, including China's largest government research funder and two national science libraries (2), have publicly supported the measure although they have yet to sign on officially. The plan, set for an aggressive launch date of January 2020, has sparked controversy and great confusion among science publishers, for-profit and nonprofit alike, as well as among the researchers they represent (3).

I have long been an OA advocate. As editor-in-chief of the *Science* family of journals, I launched *Science Advances*, a fully OA journal. And PNAS is a hybrid journal that has offered an OA option since 2004; 36% of the journal's articles are now OA. All content is free within 6 months and immediately free in more than 120 developing countries. I have personally never encountered an editor or researcher who was not in favor of removing paywalls and reducing embargoes as long as journals can remain viable operations and are accessible to their author communities.

The architects of Plan S have laid out a proposal in hopes of achieving their goal of full OA. And yet, I am apprehensive about the path they suggest, even after my in-depth discussion with one of the leaders of Plan S. This is a crucial time because the coalition's initial comment period for Plan S closes on February 1, 2019 (4). Below are some of my concerns, which I

hope can be addressed as additional plans for implementation are devised.

Demanding Requirements

The Plan S coalition's aims are lofty, and their requirements for compliance manifold. Although implementation guidance was released in November, many details are still unclear. It's difficult to discern which journals and platforms will be considered compliant. (Conversely, some details of the plan seem mired in minutiae that could cost publishers considerable time and money—for example, the plan specifies that a compliant repository must have automated manuscript ingest, must store full-text XML in JATS standard or equivalent, and must have a helpdesk.)

What does seem clear, at least in their implementation guidelines, is that Plan S will not permit publication in hybrid journals (a dominant model for society publishers) unless they meet one of two conditions: (i) The accepted manuscript is made available in a compliant repository at the time of publication without embargo with a Creative Commons Attribution license (CC BY) or equivalent (which permits both commercial and derivative reuse) (5). (ii) The article is published OA with a CC BY license in a subscription journal that has "transformative agreements," which achieve compliance through agreements such as "Read and Publish" (6) during the no-more-than-3-year period before the journal must "flip" to full OA. With such restrictions, publishing in most hybrid society journals will likely be prohibited for authors with Plan S funders, even if their coauthors have other funding. As for PNAS, the journal allows authors to deposit in PubMed Central on publication with no embargo but only if the authors have paid the regular article charge and the OA CC BY surcharge, a funding arrangement that would not be allowed under Plan S. The uncertainty of how this change will affect authors and the journal are indeed part of the problem.

Plan S funders have further committed to funding "reasonable" article processing charges (APCs) for compliant journals and platforms, but those caps—yet to be announced—are likely to be higher than those currently charged by fully OA journals. This would allow them to increase their rates to generate more profits. Yet the capped APCs are likely to be less than those needed currently by hybrid journals, many of which have society publishers. (For Plan S's full implementation guidance, see https://www.coalition-s.org/wp-content/uploads/271118_cOAlitionS_Guidance.pdf.)

Careful Consultation

I am also concerned that the architects of Plan S have not consulted broadly with researchers, editors, and leaders of scientific societies to obtain their views of how devastating this plan might be for the very organizations that support researchers and their disciplines. The financial implications could be quite serious. For example, to convert a hybrid journal into a fully OA journal is an expensive proposition for a scientific society because journal subscriptions are suddenly canceled at year's end. OA revenue starts to build over the

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