Changing the paradigm for research publishing

The commentary by Detlef Lohse and Eckart Meiburg, "On the quality and costs of science publication" (PHYSICS TODAY, August 2019, page 10), criticizes the Plan S initiative of some European funding agencies, which would require that results of publicly funded research be published in open-access journals. Lohse and Meiburg's points are fair, given the present research publication paradigm.

The point they are missing, to my mind, is that the paradigm is—and should be—changing. Many aspects of the present model come from the time when journals appeared only on physical paper, and some ways are so deeply rooted in the community that they are hardly questioned. Among them are the enormous and ever-growing number of journals and our reliance on the use of journal names to screen for quality. I think those practices are neither optimal nor indisputable.

Instead of questioning Plan S based on the existing publishing model, I see the plan as an opportunity to revise the model. For example, a key criticism to open-access publishing is that it favors bad journals. That is, publishing in "good" journals that are highly selective is expensive, whereas publishing in nonselective "bad" journals is much less costly. That is true if we do not question the present accept-or-reject publishing model. However, if we consider using peer review for quality discrimination by grading papers instead of rejecting them, the scenario changes radically. Imagine an all-physics journal like the new *Physical Review Research* using grades for its papers to correlate with levels in the old model—including letters (grade 3), rapid communications (grade 2), regular articles (grade 1), and even higher and lower levels. Not only would such a journal be perfectly geared for Plan S, since the rejection rate would be minimized and publication costs thereby reduced, but it would also represent significant progress in research publishing, as explained in www.emilio-artacho.blogspot.com.

Emilio Artacho
(ea245@cam.ac.uk)
University of Cambridge
Cambridge, UK

ISTOCK.COM/COFOTOISME

TODAY'S RESEARCH PUBLICATION MODEL was developed when journals appeared on paper only and submissions were either accepted or rejected. Perhaps it's time to consider a new model.

Getting the drop on quantum droplets

The article "Ultradilute quantum droplets" by Igor Ferrier-Barbut (PHYSICS TODAY, April 2019, page 46) was really nice to see. It reported on the creation, at last, of real ultradilute liquid droplets and on the tremendous progress that has been made in that area. However, I was disappointed to see no mention or discussion that ultradilute liquid quantum droplets were predicted a long time ago.[1,2] That early work was a major source of inspiration for Dmitry Petrov's 2015 paper on the subject,[3] at least according to what he told me years ago.

In his discussion of mean-field quantum gases, Ferrier-Barbut doesn't note that the Efimov effect, which involves the creation of an infinite number of three-body bound states, can also allow Bose liquids to exist when the scattering length is negative (that is, when the two-particle interaction is attractive). Such a system is not always unstable. Tsung-Dao Lee, Kerson Huang, and Chen Ning