their work. Recently, however, a different mechanism of cascading the papers down the hierarchy of journals has become popular. Some journals pass the rejected papers, with the authors' permission, to what is sometimes referred to as their "sister journals," bearing the same brand. For example, the journal families of Cell, Nature, or Science now comprise smaller journals under their own brand and offer these journals as outlets for good quality work that has been rejected from the top journals. For example, with the author's permission, Science transfers papers to its sister journals Science Immunology, Science Advances, Science Robotics, or Science Signalling. The stated goal of this transfer mechanism is to help authors find a place to publish their paper as quickly and smoothly as possible. Indeed, this practice is beneficial for the authors, as their papers are published faster than they would be otherwise. For the journal families, the practice of transfers also makes good business sense, because it allows publishers to capture a greater share of the market. One of the editors I interviewed commented, "If you get a paper, review it, and reject it, the financial model tells you you've not made any money, you've spent money but you've not made any. If you can cascade it, (...) it gets published then in your open-access journal that's a bit lower, but you now monetize the submission." And, unsurprisingly, open-access journals often charge significant publication fees.

Some of the editors of smaller journals raised concerns that this system reinforces the monopoly of the biggest brands, as sister journals soak up rejected papers. The concern expressed by some editors of the middle-tier, small, specialist journals was that the papers that used to be submitted to their journals are now published in the journals owned by the three big families *Cell, Nature*, and *Science*. One journal editor commented on the power of the *Nature* brand, "*Nature* is one of the most powerful brands in the world, even more powerful than most fashion brands. People flock to these journals at all costs. The name alone stands for prestige and quality and successes in research."

Undeniably, finding a place to publish a paper as quickly and smoothly as possible is important to all authors, so the trickle-down arrangements may be a good solution for authors as well as editors. And, indeed, this is what I found: some authors saw these arrangements as par for the course—they submit their paper, for example, to *Nature*, knowing that they will probably get it into *Nature Communications*. However, the editors of smaller specialist journals worry about this trend, as they feel that they are being squeezed out by the big brands. While the big journals see increases in submissions, mid-tier, specialist journals (mostly with impact factors under IO) experience a fall in the numbers of submissions and see their share of the market of publications decreasing. Most editors of these smaller specialist journals would like to see their numbers rise, but as one editor pessimistically commented, "The future of this market is fighting for submissions."

THE "CHAMPAGNE TOWER" OF LIFE SCIENCE JOURNALS

The metaphor that I believe best captures the hierarchical nature of science publishing is that of the champagne tower. Just as the glasses in the tower are organized in tiers, so are scientific journals, with prestigious elite journals at the top (Cell, Nature, Science) and lowest-ranked journals at the bottom. In between are various tiers of journals in decreasing order according to their impact factor. When rejected from the top tier journals, papers, like champagne, trickle down the champagne tower, metaphorically "losing their bubbles" on the way down. Journal editors sometimes express a cynical view that everything will get published somewhere, eventually. So if lower-tier journals soak up rejected papers, it is worth considering who owns these "champagne glasses"-are these lower-tier journals small specialist publications run by scientific associations, or are they journals owned by the big families? Who benefits from these arrangements, and who loses out? The practice I researched is currently common in the life sciences, but it is increasingly piloted in the social sciences. Before accepting the practice uncritically, I argue that editors of social science journals should carefully consider both its advantages and disadvantages.

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Higher Education Journals: An Emerging Field

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H igher education journals are, arguably, the most significant repository for the outputs of higher education research. Therefore, it is important—whether you are a higher education researcher or someone with an interest in that research—to know something about them. How many are they? What do they focus on? Who owns them? Where are they based? How old are they? How much do they publish? Which are the best? What does the future hold?

This article summarizes the findings of an investigation into these questions, though it has to be emphasized that the answers provided are not definitive and that this is a volatile field. The study is confined to peer-reviewed academic journals published in the English language that focus exclusively on higher education research. There are, of course, many nonacademic higher education journals, and academic journals that publish some articles on higher education. There are also many higher education journals published in Chinese, French, German, Portuguese, Russian, Spanish, and other languages. While these are excluded from the present study, they are all worthy of investigation.

How Many Are They and What Do They Focus on?

Even with these limitations, this is not a straightforward question to answer. There is no definitive list of academic journals. New journals are established every year; existing journals shut down, change their names, or amalgamate. The Center for International Higher Education itself maintains a list, but this includes some journals that are not wholly focused on higher education, and some that are not academic in orientation.

A new list has therefore been compiled during the last few years by noting down the title every time an unknown journal was mentioned, and then searching online for further details. Based on this work, 121 current academic journals published in the English language and wholly focused on higher education have so far been identified. (It would be foolish to claim that this list is wholly comprehensive: how could it be? Some journals will have been missed, particularly newer ones available only online, focusing on a discipline, and/or housed in a relatively obscure institution.) The majority of the journals identified (79) focus on a specific topic, theme, or sector. There are, for example, journals focusing on assessment, community colleges, diversity, engagement, international students, management, outreach, policy, quality, religion, research, student affairs, teaching, women, and work-based learning. By comparison, generic (19), discipline-focused (19), and nation-focused (4) higher education journals are rather less common.

WHO OWNS THEM, WHERE ARE THEY BASED?

The journals are fairly evenly split between those that are owned by learned societies (e.g. AIR, NASPA, SRHE), and those that are owned by their publishers (e.g. Springer, Taylor & Francis). For several, mainly recently established online journals, it was not possible to determine ownership. In terms of country of origin, 56 of the journals were initially established in the United States, 28 in the United Kingdom, six each in Australia and Canada, and nine in eight other countries. For 16 of the journals, it was not possible to identify a country of origin.

An indicator of the national or international focus of a journal is provided by the make-up of their editorial board (this information could not be identified for seven journals). A substantial minority, 54, were entirely composed of academics based in one country; most of these, 47, were US based. A smaller number, 42, had international editorial boards. The remaining 18 journals had what might be called "split" editorial boards, with a substantial number of members based in one country and the remainder distributed across the world.

How Old Are They, How Much Do They Publish?

The oldest of the journals identified, *Academic Medicine*, started publication in 1926, followed by the first generic higher education journal, the *Journal of Higher Education*, in 1930, and the first to be founded outside of the United States, *Higher Education Quarterly*, in 1947. Higher education research publishing really took off during the 1970s, with 18 new journals founded in that decade (that have survived), bringing the number then published to 40. Twelve more higher education journals were added in the 1980s, and a further 15 in the 1990s; 54 of the journals identified have been founded since the year 2000. It should not be forgotten, however, that at least a dozen higher education journals have discontinued publication over this period, while others have amalgamated and lost their original identity.

121 current academic journals published in the English language and wholly focused on higher education have so far been identified.

The "biggest" of the journals identified, in terms of volume of publication, was *Studies in Higher Education*, which published 2,286 pages in 2016. It was followed by *Academic Medicine*, with 1,707 pages, and *Higher Education* with 1,646. In all, 14 of the journals published more than 1,000 pages of articles in 2016. At the other end of the scale, there were a few journals publishing less than 100 pages; these journals were typically recently established and/or highly specialized. The journals identified published between them well over 40,000 pages of articles in 2016 alone. If we assume an average of 400 words per printed page, this amounts to around 16 million words in just one year!

WHICH ARE THE BEST, AND WHAT DOES THE FUTURE HOLD?

Alternative journal ranking systems are available via the SCImago Journal Rank Indicator, which compares a broad range of journals in terms of their relative citation rates. The highest ranked of the higher education-specific publications was one of the specialist journals, *Internet and Higher Education*, which had a rank of 3.561 for articles published in 2015. It was followed by *Academic Medicine* (2.202), and then three generic higher education journals which were very similarly ranked: *Research in Higher Education* (1.724), *Higher Education* (1.717), and the *Review of Higher Education* (1.703). Eight other journals had rankings in excess of 1.0. The 13 highest ranked higher education journals include both the oldest established journals and some relatively new ones, the largest and some with a relatively small output, and seven that are international, three that are wholly American, and three that have split editorial boards.

It is to be expected that the number of higher education journals and their output of articles will continue to increase, as higher education continues to expand and interest in researching it grows. Print versions of journals will largely cease to exist, with virtually all publication and access online. The trend toward free, open access for an increasing number of journals and articles will continue, but well-established, high quality journals will likely still charge for access.

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The Vanishing Public Monopoly

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The spectacular expansion of private higher education (PHE) over now more than a half century is most often quantitatively depicted by rising raw enrollment, as well as by the rising private share of total enrollment. PHE now has more than 60 million students, a third of the world's total.

Private growth can be seen as largely complementary to public growth, as public enrollment growth has itself been unprecedented in its raw magnitude. But it is likewise valid to recognize a distinct casualty of private expansion the near disappearance of public monopoly. By public monopoly we mean simply the absence of private institutions, whether they are proscribed by law or simply de facto nonexistent. The private institutions that break public monopoly can be nonprofit or for-profit; nonprofit is the more common legal form globally, but both forms are growing and the boundaries between the two are often unclear.

Public monopoly was long a common norm. It reigned in Africa, the Arab region, Eastern Europe, and parts of Asia as recently as 1989 and beyond. To be sure, it had dissipated earlier in Latin America, and many developed countries had long had anywhere from public near monopolies to substantial dual sectors. In mid-century, however, Communism brought a dramatic increase in public monopoly. There would also be subsequent scattered nationalizations of private sectors (e.g., Turkey, Pakistan).

VANISHING PUBLIC MONOPOLY

But there is no mistaking the global erosion of public monopoly in recent decades. The singular sudden tumbling came with Communism's 1989 demise in all of Eastern Europe and much of Central Asia. And quite beyond that, each decade since 1990 has continued to see the number of single-sector systems decline notably.

By 2000, the main international database (UNESCO's)

Private growth can be seen as largely complementary to public growth, as public enrollment growth has itself been unprecedented in its raw magnitude.

showed only 39 countries with no private sector; by 2010, 24. This is 24 out of 179 countries with available sectoral data. Yet the closer analysis of PROPHE's dataset shows that only 10 countries retain public monopoly: Algeria, Bhutan, Cuba, Djibouti, Eritrea, Greece, Luxembourg, Myanmar, Turkmenistan, and Uzbekistan.

Whereas the most important fact about this list is its small size, also striking is the absence of several particular countries. Communist China abandoned public monopoly in the early 1980s, Communist Vietnam following suit thereafter, each now with roughly 15 percent private shares. (North Korea is not in the 179 country database but even it, however weirdly, ostensibly has an Evangelical private university.) Like China and Vietnam, Turkey allows PHE even while not allowing religious higher education. None of the populist-left regimes rising in Latin America since the 1980s (Bolivia, Ecuador, Nicaragua, Venezuela) has even threatened to close PHE.

Furthermore, even the list of only 10 understates how limited public monopoly now is. First, three of the 10 systems have fewer than 10,000 total enrollments, and an additional three systems fewer than 300,000. Only Algeria, Cuba, Greece, and Myanmar retain public monopoly in