

# Global Ecosystems of Scholarship: The Chirality of Publishing Quality and the South African National Research Economy

**Keyan Tomaselli**

<https://orcid.org/0000-0002-2995-0726>

University of Johannesburg, South Africa

Keyant@uj.ac.za

## Abstract

Scholarly debate on South Africa's unique research publication value chain focuses mainly on the Department of Higher Education's incentive scheme, which financially rewards universities for accredited publications. However, this arrangement has sparked contradictions that have prompted a system review. Over the past decade, the Centre for Research on Evaluation, Science and Technology, under contract with the Department of Higher Education and Training, has been monitoring publication outputs, practices, authorship patterns and metrics in South African and global research environments. This has culminated in the Publication Quality Framework Project. This article uses the concept of chirality to discuss the correlation between research quality and the publishing economy based on the Department of Higher Education and Training. It presents publishing quality and the South African national research economy as chiral concepts, based on the rationale that they are mirror copies of the same infrastructure: the country's academic industry. They look similar when we observe them functionally: They are connected in the education policy governing higher education management and practices, which cannot do without, on one hand, research publications, and on the other, a proper accounting system for the resulting Department of Higher Education and Training incentive economy.

**Keywords:** research; publication; incentives; value chain; higher education; South Africa; accreditation



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## Introduction

This article is about South Africa's higher education sector, where it discusses the relationship between publishing quality and the economic side of this publishing, the two forces coexisting in academic research. It examines the local context in relation to global publishing ecosystem geographies. South Africa's position within these ecosystems and the inequities within the scholarly publication value chain are assessed in relation to the national scientific publication policy that is subject to oversight by the Academy of Science of South Africa (ASSAf). This analysis, supported by documented evidence, offers some solutions by identifying the residual issues that the Publication Quality Framework Project (PQFP) is constituted to address. It offers chirality as a pragmatic framework of asymmetry for the scenario in which the left hand (the management of quality and ethics in the academic publishing sector) is not mirrored in the other hand (institutional-level publication strategy within the South African national research economy and other public and private research sectors, which may be non-university affiliated). Consequently, related aspects such as the public university research system and other sectors of the public and private research sectors, and the funding difference between urban research-intensive universities and rural less research-intensive universities are also addressed through this chiral concept. This article opens these debates and extensively discusses salient points, hinting that we cannot dismiss the Department of Higher Education and Training (DHET) completely because it has its role in sustainable higher education; we should, however, ensure the integrity of the system and adopt best practices to avoid abusing its good intentions.

## Public Sector Research Funding

The Department of Higher Education and Training, under its *Research Outputs Policy* (2015), encourages “productivity by rewarding quality research output at public higher education institutions”. The DHET incentive supports “original, systematic investigation undertaken to gain new knowledge and understanding” (DHET 2015, 4). South African journals publishing such work are recognised by DHET and measured against best evaluation practices as recommended by the Academy of Science of South Africa. This whole setup integrates publishing within the national vision where research fulfils, among others, the primary “vehicle of science-based progress and effective attainment of sufficient high-level human capacity to address the most challenging problems and to provide inspiration to the brightest minds amongst the youth ... a key role in training by furnishing the most rigorous tests of resolve and originality” (Gevers et al. 2006, vii). In implementing this task, ASSAf operates in liaison with DHET and with the Centre for Research on Evaluation, Science and Technology (CREST), based at the University of Stellenbosch.

DHET pays universities a notional R130 000 per full research article, that is, one productivity unit for a single-authored output, with varying amounts allocated to peer-reviewed conference proceedings, chapters, and books. Universities then disburse these amounts internally according to their specific resource allocation policies. This is split

into payments for administrative and management overheads and appointing research associates and postdoctoral fellows who “generate” further DHET incentives for their affiliated university. Universities may allocate varying percentages to the research cost centre of the relevant author, with some—questionably—permitting “a portion to be claimed as taxable take-home pay” (Tomaselli and Saidi 2024, 2). Only two well-ranked research institutions, Rhodes University and the University of Cape Town, require that the DHET incentive be applied from general central funds, into which the funds are deposited. Regardless of the differences in university allocation policies, the DHET system is now fully integrated into university administrations. The incentive promises variable income to be competed for among the 26 public universities. In the competition for these funds, an unforeseen eventuality has been the constant pressure on academic staff, thesis students, postdoctoral fellows, and even administrators to publish work that generates variable income to supplement the annual block grants from the state.

The DHET scheme has been intensely debated since its introduction in the late 1980s. Initially, during the final decade of apartheid, critiques were primarily of an ideological nature (Byrne 1996). However, following the new policy directions after 1994, the totally restructured and now transparent system gained greater legitimacy under the democratically elected government (see Vaughan 2015). However, questions regarding the intentions, implementation, failures, and successes of the scheme meeting national scientific policy remain (see, for example, Andrason and Van den Brink 2023; Baijnath 2019; Baker 2008; Beukes and Fourie 1987; Harley et al. 2016; Lee and Simon 2018; Nadar and Pillay 2024; Van den Brink and Andrason 2024).

Given that after 2005 the DHET scheme was reconstituted to internationally reposition all South African journals, scholars, and their scholarship, this article examines this contemporary local context in relation to global publishing ecosystem geographies in terms of the residual issues that the DHET-funded Publication Quality Framework Project is constituted to address.

### **The International Academic Research Ecosystem**

An oft-repeated truism is that global scholarly publishing is dominated by a handful of rapacious international commercial publishers. Their journals indexed in the Web of Science and Scopus are alleged to hold an unfair advantage. However, this perspective overlooks the diversity of journal ecosystems, especially among non-English speaking countries (Kulczyck et al. 2025). This global publishing ecology anchors debates essential to diverse academic research infrastructures. South Africa’s research and publishing economy is broadly anchored on five global research ecosystems.

First is the legacy journal subscription model (North America, British Commonwealth, Africa, parts of Europe and Asia) that embraces the narrower South African publishing footprint with its DHET ecosystem that recognises only South African journals and those indexed by the Web of Science, Scopus, ProQuest, the Norwegian List Level 2, and listed in the Directory of Open Access Journals.

Second, the 2018 European Plan S open access (OA) initiative mandates that researchers receiving state and donor funding publish in open repositories and/or fully OA journals. The initiative was proposed by funding organisations and spearheaded by the President of Science Europe and a former Open Access Envoy of the European Commission (see Brainard 2024; Else 2021). The “S” stands for “shock”. The shock that resulted, however, was not what was intended since the Plan triggered increased publishing charges by the legacy and new OA publishers leveraging this new market in the face of the declining subscription model that the Plan wants to replace (see Anderson 2023).

Third is the university-based, non-profit, publicly funded infrastructure for Open Knowledge in Latin America and the Global South (AmeliCA) (Becerril-García et al. 2018). AmeliCA serves the inherent regional model that enables journals to operate without imposing costs on authors or readers. Within this model, the South African research community-driven Scientific Electronic Library Online (SciELO) platform hosts 111 titles within this predominantly non-English language system. However, each journal sports its own business model, with most now levying article processing charges (APCs) requiring author-pays subvention (usually covered by the employer). A purist AmeliCA SciELO ethos would require South African universities to invest in publication infrastructure and hosting technology (which some are doing). It would also encourage a delinking from legacy publishers and the approved indexes or what AmeliCA identifies as “legitimation systems”.

Fourth is the emergent smaller “library publishing” ecosystem, activities led by academic and research libraries and library consortia to support the creation, dissemination, and curation of scholarly, creative, and/or educational works (Library Publishing Coalition 2024, vii). This sector is characterised by varying and inconsistent quality assurance measures. Library publishing sometimes entails misunderstandings about OA, such as no copyright holds or whether it is insider publishing that takes place inside a library. In a 2024 report by the Library Publishing Coalition (2024, ix), 92% of the listed library publishing takes place within academic libraries covering 18 different countries. Around 86% focus on OA publishing, with 80% publishing in English, while 38 other languages are also listed. For South Africa, three university publishers are listed (although none are Coalition members), with varying quality assurance standards.

Fifth is a recent large-scale entrant to the Western ecosystems—China. Licensed university-hosted journals in China collaborate with and contract European firms to publish English-language journals to secure global academic footprints (Zhao, Liu, and Yan 2024). Unlike in South Africa, Chinese editors are not intrinsically involved in national publication policymaking. In 2024, China boasted more researchers than the United States of America (USA), and it spent more on research than the USA and the European Union combined. Its academics publish more annually than any other nation, and increasingly, Chinese authors’ work appears in international journals with above-average citation incidence. By 2021, 375 (7.6% of the total Chinese STEM journals) were published in English, with Springer Nature holding the largest share, trailed by

Elsevier and Wiley (Hyland 2023, 395–400; Xu et al. 2019). Chinese scholars returning to China from stints at Western universities are also arguing for continued recognition of Western English language journals and indexes such as the Web of Science (see Wang 2024).

These five primary ecosystems ringfence their own often mutually exclusive spheres of operation. This occurs, for example, when the DHET incentive directs South African-affiliated authors towards narrower, specific, comprehensive lists, as mentioned above. However, in doing so, universities effectively blind journals and those South African authors because these publishing networks external to the above-mentioned ecosystems are not legitimised by the officially approved indexes and the single OA directory. While the DHET scheme does not insist on exclusivity, such unrecognised but legitimate outputs, inexplicably, are often also excluded from institutional annual reports. Recognition of work published in non-DHET-qualifying ecosystems (reaching different sets of readers) should be better leveraged by universities, especially for international ranking purposes. Indeed, the Kulczycki et al. (2025, 18–19) study makes this case in some depth, calling for an integration of “comprehensive databases, national indexes, and regional platforms to capture the full spectrum of scholarly communication ... thereby avoiding one-dimensional views of the publishing landscape”. South Africa’s national research economy partly intersects with the above global academic research ecologies, which inform its publications and institutional logics (see Le Roux 2015).

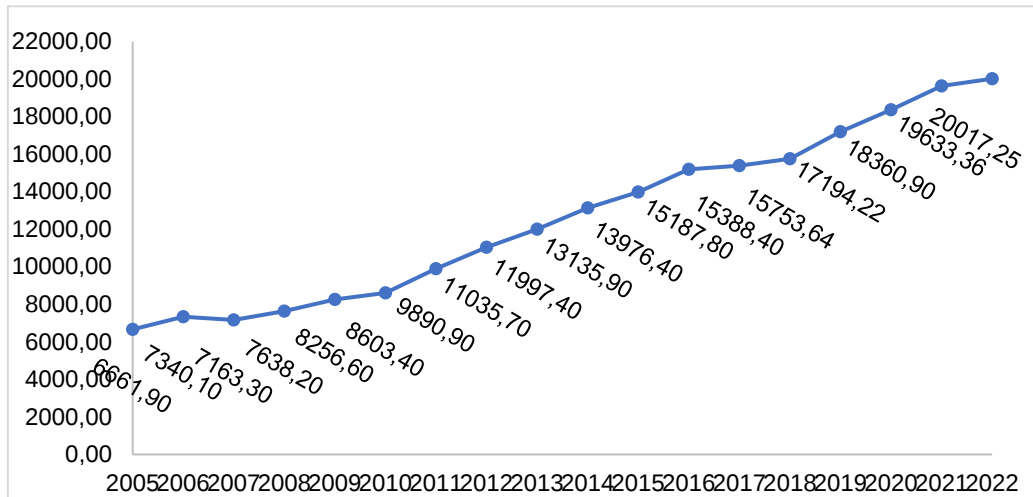
## The South African National Research Economy

### Publication Outputs

Since its reconceptualisation in 2005, the DHET system has seen a massive increase in publication output both locally and globally by authors affiliated with South African universities (Figure 1). Yet, the data generated by CREST identifies a simultaneous decline in research quality in some disciplines. This trend is coupled with unethical manipulation by certain universities and authors who are alleged to exploit the contradictions created by the scheme (Mouton<sup>1</sup> and Valentine 2017; Veldsman, Gevers, and Crewe 2019).

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1 See also Johan Mouton’s annual reports contracted by DHET as “gaming the system” (Fish 2019).



**Figure 1:** Increase in article subsidy units: 2005–2022 (CREST 2024)

Internal publication reward systems tend to reflect corporate operations rather than adhering to the established norms of scientific practice (Muller 2017, 2021; see also Kuhn 1996). This occurs despite regular audits conducted by DHET through CREST, which have been shared at the annual National Scholarly Editors Forum (NSEF) meetings and with senior university research administrators. Recognising the extent of such unethical manipulation, DHET, in collaboration with CREST, initiated a four-year Publication Quality Assurance project in 2024. The project aims to establish more effective oversight mechanisms that: a) eradicate unethical exploitation of the DHET incentive system (for example, excessive article production, text recycling, salami slicing, disproportionate publishing by editors in their own journals, etc.); b) ensure quality with increased output and not facsimile science (Oreskes 2019); and that c) can reduce disparities between research-focused institutions and those primarily dedicated to teaching (Tomaselli and Saidi 2024). Finally, d) the PQFP intends to ensure that incentive funds are primarily allocated for research capacity building.

The paradox is that while the research system was designed to cultivate national synergistic capacity and quality (ASSAf 2006; Vaughan 2008), publication under the DHET scheme has been treated by most university administrations as a discrete productivity measure, primarily for income generation and financial balancing. It is here I ask: What have been the effects of the DHET scheme in influencing the university's economic and scientific aspirations as a combined goal for academic research outputs? Another framing of this question is: Are academic publications—the metrics of scholarly productivity—to be regarded foremost as scientific products or as income-generating targets? The next section spotlights this scenario.

## The University as a Corporation

In the general national economy, neoliberalism describes market-led reform policies that diminish state economic influence, mainly driven through privatisation and austerity (see Beiter 2023, 95). In the case of the university, the macro competition occurs between different universities on the one hand and, on the other hand, within them between different faculties, schools, departments, and even individual scholars. The competition, premised on productivity units, is measured as return on investment (for example, the attraction of state subsidies, donor funding, and staff fundraising success). Participation in national and international rankings promotes competitive academic markets, which position public universities, students, researchers, and creatives as clients whose outputs (publications, degrees conferred) are rewarded by state subsidies, which substitute for private markets. Concepts such as “information asymmetry” and “surveillance capitalism”, centred on for-profit ranking firms, are argued by Ellen Hazelkorn (2025) to be helpful for understanding the role that rankings and similar tools play. These measures occur in a technology-driven world where publicly sourced open-access data is monetised by the ranking firms to deliver tradable value (see also Zubhoff 2019).

Where quasi-commoditisation does occur, management structures need to keep in mind the fostering of democratic and collaborative academic citizenship. Thanks, however, to a misunderstanding of the DHET scheme, the prevailing ideology of “publish or perish” now focuses mainly on establishing individual-based output targets (productivity units) to which corresponding DHET income-generation goals are assigned. Under such a regime, publishing undercuts self-governance and collegiality, leading, as Klaus Beiter (2019) points out, to underfunding and extremely competitive practices uncondusive to sustainable scientific goals.

The global knowledge economy for which higher education must prepare students nowadays, along with research that produces high-impact metrics, is a construct that guides teaching, learning, and research. Blue-sky and self-initiated research cannot easily fit into such a framework, especially one that is currently governed by the 17 United Nations Sustainable Development Goals (SDGs) that fail to list big philosophical modalities. Asking big questions must always balance the case studies that need to be read in terms of the bigger picture beyond the specified fields that lead to knowledge reproduction. The National Research Foundation (NRF) does offer funds for such a novel, curiosity-driven, open-ended project (see NRF 2017). For the rest, authors are currently required by funders, universities, and now even many journals to more narrowly categorise their research in terms of SDGs.

Through such categorisation, universities, implementing a business analogy, replace collegial decision-making with rigid top-down directives, sacrificing openness for strict control (UNESCO 1997, para. 32). Performance management measures individual output, within unilinear line routings, losing sight of holistic evaluation based on values, goals, and outcomes. This quantification is essential for allocating and/or denying

bonuses, promotions, and research leave. Financial risk management raises concerns about potential losses, redirecting funds from fundamental or innovative research and degrees towards projects that yield immediate results and fast publication (Petrou 2025). Consequently, higher education and research are aligned primarily with the goal of national economic growth, compelling universities to navigate within state parameters while managing the negative effects of decreasing state subsidies for core institutional operations. This shift mutes the aim of fostering “civil responsibility” as everyone is assessed merely as a productivity unit (see Beiter 2023, 102).

A Council on Higher Education *Briefly Speaking* article (McKenna 2024) on this topic attempts to unravel the opaqueness of the university corporation. The “productivity unit”, an entropic measurement, is classified as primary by university key performance indicator (KPI) contracts. However, this discrete output-driven unit, designed to encourage due diligence across all academic staff, is just one aspect of the intended synergistic research policies, which are not always in harmony between ASSAf, the NRF, DHET, and the CHE. The potential synergy for which national policy aims is sometimes squandered when applied within balance-sheet-driven institutional management structures. Public universities operate within a framework of distinct national funding and regulatory bodies, which oversee resource allocation and advocate for best practices, sometimes influencing research agendas.

Although the above agencies collaborate effectively on inter-institutional administrative matters, each follows distinct and often differing agendas and policies to serve the respective stakeholders. For instance, the importance of “accredited journal” (i.e., small, local, recognised by DHET only) is questioned in NRF scientist rating frameworks, which look for international standing and disciplinary impact rather than quantity, even though DHET and universities reward volume. Though each agency defines its own goals, evaluation criteria, and standards, collaboration does occur. For instance, ASSAf, commissioned by DHET, performs assessments of journal quality every five years to augment the CREST publication monitoring studies (see Crewe 2020). ASSAf also considers journal accreditation applications on behalf of DHET. The Academy manages the SciELO platform. SciELO receives support from the Department of Science and Innovation, while the journals that it hosts largely fund themselves. The NRF oversees the national reporting software that consolidates all eligible journal publications submitted by various universities into its Research Output Submission System (ROSS). ROSS serves the DHET output subsidy submission and review processes (NRF 2018/2019, 17).

Academics and universities must navigate these domains when engaging with these agencies. Thus, academics tend to find themselves, often unwittingly, crossing between different organisational maps with their associated appraisal criteria that sometimes contradict each other. This article can only try to illuminate the administrative geography concerning the national and global research and publishing environment.

The foundation of future national research and publication policy was set out by ASSAf during the early 2000s. It is this framework that the PQFP is currently assessing, not with reference to its philosophical groundings and undoubted quantifiable success, but with regard to its ethical implementation within universities. The question arising from these contradictions is how to reconcile and valorise research metrics with productivity units. What kind of conversations result from scholars regarding their works, and the offshoots of these works, as foremost scientific efforts or as performance units? The concept of chirality, originating from chemistry and physics, provides a useful framework to discuss this contradiction.

## The Chirality of Publishing Quality and South Africa's Publication Strategy

The term *chirality* derives from the Greek *χείρ* (*kheir*), “hand”, a familiar chiral object, and refers to “the ‘handedness’ (as in left-handed or right-handed) of a molecule. Molecules of the same substance that exhibit chirality are those that exist in two forms—like left and right hands—that cannot be superimposed on each other” (Bell 2004, 36; Wagnière 2007). My adoption of this metaphor is not to find a resolution to research policy asymmetry but to analyse below how chirality 1) is manifested in our public university funding and rewards infrastructure, and 2) clarifies the productive simultaneity of economic and scientific ideals that operate concurrently in academic publishing. Through this collocation of functionally interdependent setups, where scientific excellence and financial sustainability operate as chiral systems, one cannot do without the other. Neither can displace the other; neither mirrors the other's functions; and neither can be exchanged for the other. These are the tensions—even contradictions—that apply to the DHET incentive scheme in its implementation within public universities, as I shall demonstrate below.

A brief recent pre-history of the South African research environment that has resulted in chirality now follows. The analysis will briefly examine the genesis of national policy and how the handedness plays out—is mirrored—in the actual public university practices and how it affects individual researchers.

### The Genesis of National Research Policy

The state-funded Bureau for Scientific Publications (BSP), operational between the late 1970s and 2001, provided centralised editorial services, production, and marketing for 20 peer-reviewed journals (Pouris and Richter 2000). Despite this support, the impact factors of BSP journals remained low. Further, the science environment was ethnically fractured between the Akademie vir Wetenskap en Kuns, the Royal Society of South Africa, and the Science and Engineering Academy. These were reconfigured into the Academy of Science of South Africa in 2006, following inter-academy discussions that had started in 1991. The new Academy includes the humanities and is evidence-based, while its membership criteria combine excellence in scholarship *and* associated demonstrable service to society (Gevers 2025, 237). After the closure of BSP, ASSAf

and the then Department of Arts, Culture, Science and Technology created a new strategic framework for all extant and new research journals (ASSAf 2006, 2008a, 2008b, 2018, 2019). The objective aimed to create the conditions for improving South African journals' local and international profiles, strengthening productivity through emerging digital platforms, and enhancing public benefit.

The resulting stabilisation and professionalisation of journals and their management significantly increased the global exposure of South African work post-2005. The number of journals rose dramatically to 337, while accredited outputs surged from 6,661 in 2005 to 20,017 by 2022 (Figure 1). A community-responsive policy-making environment that includes editors initiated by ASSAf was crucial for strategically organising the national publishing system. The success of the DHET system in stimulating quantity, in an environment where new journals appear daily, caused the NSEF, which contributes to policy-making and national editor and publisher training, to issue a call for journal editing and peer reviewing to be recognised for university KPIs (de Jager et al. 2024). Perversely, these are the discipline-shaping professionals who are excluded from the DHET value chain. Their work also lacks sufficient institutional recognition, as it is expected that they must “perform”, usually pro bono, though there are some exceptions. Internally to some universities, even globally, editors and peer reviewers are encouraged to dispose of their disciplinary service to others (who are then caught up in the same exclusion) so they too can feed (rather than service) the system that is under the kind of constantly intensifying stresses (retractions, fraud, predatory behaviour, artificial intelligence [AI] misuse, overproduction) that are now reported daily by Retraction Watch.

The academic public sphere is under threat as output—at whatever cost to quality and collegiality—becomes dominant. Could the dilemmas regarding the push for journal “accreditation” worsen in a saturated local environment? In my recent email conversation with editors of a SciELO-listed journal (May–June 2025), one of the editors suggested that “[j]ournals should be a place where ideas are debated”, further adding: “even though ... the journal has a provision for publishing commentaries and reviews, and even industry case studies, we hardly receive any, except from very seasoned authors”. The editor explained: “Because these contributions are not subject to DHET subsidy, many academics consider them not worth the effort. The debate is stifled by the system.” One of the unintended chiral consequences of the DHET scheme indeed is discouraging South African academics from engaging with each other outside formal incentive-earning full articles (or at conferences). So, instead of journals offering debating venues, many are now seen by scholars as product display venues.

This informal conversation clearly illustrates the unintended consequences of prioritising financial considerations over scientific knowledge. It also highlights the relationship between a university's economic interests and scientific obligations in more practical terms: that while academics are appointed on scientific merit, they can easily slip into productivity routines motivated by point-systems and may abandon the

scientific conversation altogether in pursuit of the singular merit of earning output credits—and their financial incentives.

The remainder of this article addresses some of the main forces that characterise South Africa's contemporary scholarship as a functor of the global academic ecosystems. This task is approached through two frames: publishing quality and national research economy. Through these, one can ask: How can one pragmatically theorise the chiral-type tension between scholarly publishing as an economic product on the one hand and as scientific research on the other? What relationship exists between both—are they exchangeable one for the other, or do they mirror the same or comparable academic idea or even a philosophy through which we can grasp the practical interface between academia and sustainable university in South Africa today?

DHET provides a binding force, a molecular binding if so to speak, that brings together the scientific and the financial ideals to function simultaneously within the overarching academic system. But this does not mean that these can be morphed, only simultaneously actuated. These two ideals (the left and right hands) can work together to achieve a more optimal common good. To stretch the metaphor further, we have a kind of scissors—one fork optimised for scientific excellence, and the other for incentives. With the objective of being a sustainable and progressive university institution, both dimensions remain differentiated yet reciprocal, with DHET coordinating both to achieve optimal results for the contemporary university. A practical framework to discuss this dialectical tension manifesting in chirality between scientific and economic interests of the university is to see where DHET and ASSAf intersect: the process through which research knowledge accrues and is accessed.

Research accessibility and the infrastructures of knowledge production and consumption are suggested as the basis to rethink how research as an intertwined two-forked financial and scientific process can be approached. In the latter, while university-level policies on DHET are necessary to ensure sustainability of the institution, the reproduction of research and researchers should not be primarily framed as a financial or ranking exercise.

The priority of self-improvement over mere productivity was similarly of concern to Socrates five millennia ago. He was concerned with writing and its implications for memory: Through their use of “written characters” learners “will be hearers of many things and have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality” (Innis 1946, xxiv). New technologies, concluded Harold Innes, also increase “the difficulties of thought” (1946, xxiv) as submission overload occurs. The Promethean paradox of humanity's mastery over nature, in concert with the advance of science and technology, also implies the shackling of the intellect and the replication of endless case studies that confirm what is already known. The turning point for Western civilisation was the invention of the printing press that activated mechanised patterns of

thinking. Printing technologies and “their commercial and political applications” fostered an unreflexive “inter-subjective mentality” characterised by an absence of critical self-awareness (Comor 2018, 184). Per Innis, this “reflected and furthered the capacity to manage, administrate, and control—to apply power—on an unprecedented scale. Unreflexive and present-minded norms of thinking thus were both consciously promoted (especially through advertising, the price system, and mass democracy) and structured into the relations of daily life” (Comor 2018, 184).

The same logic is enhanced in the contemporary media-saturated era. For example, the long-term DHET philosophical goal with its corresponding financial compensation is to reward the scientific process and its knowledge outcomes. Research as a scientific process means using DHET incentives to increase the value of the researcher’s capacities within the university and of the university itself. It is about the development of scholars into more accomplished scientists, empowered to improve the knowledge ecosystem more meaningfully.

This then brings us to the relationship between DHET-motivated research and its consumption, which is where we can objectively evaluate the goals of research productivity. The question would be: For what purpose do we produce knowledge under the DHET scheme? To rephrase, what is the end point of DHET-motivated publishing beyond the internal university-level targets and metrics? This requires re-examining the question of open access qua knowledge consumption as the optimal quadrat for evaluating the merits of research as a productive scientific process in service of the global community, rather than a mere productivity unit for a specific university.

This matter of open access will now be examined in global terms.

### **Open Access: Some Questions**

Plan S introduces an extra layer to the above discussed conflicting work, production, and consumption realms. It advocates for free online access to scholarly publications and largely unrestricted utilisation and reuse of these materials. As mentioned, however, Plan S has unexpectedly strengthened the hold and size of the existing market leaders. The legacy publishers have also absorbed many independent society publications as the latter try to remain relevant and to meet the additional costs imposed by the Plan (Crotty 2021).

Plan S’s flipping of who pays while also prescribing the form and platform for publishing has implications for academic freedom, elevating as it does funder-driven research over researcher-driven, blue-sky or curiosity-based inquiry. In Europe, divisions have occurred between universities, institutions, and national consortia that can afford Read and Publish agreements that eliminate article-level page fees. New barriers arise with institutions that cannot afford these schemes or which decline participation (Kamerlin et al. 2021). Ironically, where Plan S aimed to prevent publishers and authors from monetising their so-called “paid-for” research, as per the

law of unintended consequences, Plan S has enabled a new scholarly oligarchy, seemingly at a higher cost to authors (but not for readers) than was previously the case.

Diamond OA offers publishing and reading “for free” (but in South Africa, this is done at the taxpayer’s expense). A portion of the DHET research incentive that rewards universities now needs to be ringfenced to pay for OA publication whether the publishers are “for-profit” firms or university journals. Prior to OA, costs were largely absorbed by the commercial print format publishers. Thus, an incentive intended by DHET for reinvestment in research capacity is now being diluted to finance an OA system (both public and private, locally and internationally) in an article-based charge economy that is supposed to be “free”. In South Africa, the swing towards SciELO and open journal systems formats has generated its own microeconomies based on author-paid OA fees and in many instances, university library subventions.

The key question that needs to be asked in the current transitional conjuncture is, to what extent are the international legacy publishers adding or subtracting value in this hybrid print/subscription digital OA environment? Corporate-added value includes computerised processing, thereby ensuring content quality and academic freedom, offering plagiarism, libel, similarity, and AI checks, cross-referencing, copy editing, legal safeguards, ethical frameworks, marketing strategies, shielding from predatory exploiters and unanticipated disruptions, software hosting enhancements, and ongoing archiving, among other services. This behind-the-scenes support often goes unnoticed by individual authors, no matter the cost to the journal/publisher of hosting and protecting a single article forever. The scholarly myth that journal publishing “just happens” elides questions about the labour-intensive, administrative, and technological complexity of the publishing value chain and associated steep expenses (Tomaselli 2021) or how this cost is recovered, and by whom. Indeed, the 2006 ASSAf report observed that “the possible expansion of (private sector) consolidated editorial and publishing services” would permit “editors to concentrate on their critical editorial functions” (2006, xxviii). This issue is more relevant than ever in the post-2023 AI landscape, where volunteer editors are inundated with AI-generated submissions that often evade initial editorial assessment and/or software detection.

ASSAf and NRF ratings committees expect authors to publish for the social good rather than to merely secure DHET monetary incentives for their universities and/or themselves, depending on respective institutional policies (see Muthama and McKenna 2020). If the latter, are academics any different from avaricious company directors who overpay themselves irrespective of their own or the company’s performance? The PQFP initiative is geared to assessing the ways in which the DHET incentives are allocated internally to universities, as the impression conveyed in recurrent NSEF meetings is that the scheme has unintentionally given rise to a cadre of editors and authors-as-predators indirectly subsidised by DHET and the taxpayer. The PQFP could, for example, evaluate local pricing set by the paid-for publishers and authors-for-hire (see below).

The legacy publisher is also an investor and collaborator in the publication chain, while the for-hire author or firm is a product service provider. However, both rely on the same legitimization regimes to ensure their validity with DHET and, thereby, South African author/reader recruitment. The PQFP could thus analyse the respective business models of different publishers, platforms such as SciELO, and enquire as to how these affect publication integrity.

Then there is the question of the growing collaborations between the “once were predators” and the legitimate legacy operations. Taylor & Francis’s recently launched F1000Research promotional discourse is disconcertingly similar to that used by the known predators (though it does operate in terms of global best practices). Then there is the Hindawi debacle, a firm that initially might have been classified by Mouton and Valentine (2017) as a “weak case” predator, which brought together PLOS, Springer, the Royal Society, and others over the need for rapid results relating to COVID-19. The impetus here relates to supply (authors) and demand (university auditors, health crises, readers), paradigm disruption (immediate publication, open access), cross-over marketing tactics (phishing discourse), and legitimization (indexes). The merger between Hindawi and Wiley in 2024/5 into Wiley has seen the retraction of 8,000+ articles that first appeared in Hindawi journals (Kincaid 2023). How to address these developments concerning the DHET scheme needs attention.

## Further Issues

Beyond the matters addressed in the preceding discussions, the chirality of the publishing face and the national research economy encompass other underlying conditions. I briefly highlight these below, starting with issues in the publishing side such as access, inclusivity, and technology.

*1. Cost of Access:* Multinational publishers are routinely blamed for above-inflation cost increases, but among the contributing factors are, foremost, punitive exchange rates, inflation, declining state subsidies for universities, and other factors beyond the control of African authors, publishers, and libraries. Further, few identify above-inflationary increases wrought by fluctuating exchange rates and taxes: digital, import, customs, VAT, bank charges, and other duties that massively increase the price of printed works, shipping, supplies, and equipment. Such government revenue appropriations thus significantly decrease the services affordably offered by a university. Lastly, the high cost of computers, ink, software licenses, upgrades, and the half-life of still-functioning hardware and software, not to mention paper, replacement, maintenance, etc., are rarely identified as mitigating cost factors (not to mention carbon emissions). These products and services are market-driven innovations rather than necessity-driven. Increasingly, to remain viable, even local university-hosted journals (and some local private firms) are charging comparatively high article processing charges, which, pro rata, are sometimes in the ballpark of the global publisher fees, though some of the latter do offer discounts to low-income countries. Scholarly publishing in the digital era has thus

become a global industry, with patterns of both inclusion and exclusion, to which I now turn.

2. *Inclusivity*: In a just-published critique, “Article-Processing Fees and Subsidies: The Colonial Entanglement of Knowledge Production in South Africa”, Van den Brink and Andreason allege exclusion of non-academics from formal academic discourse, itself rendered as a by-product of the DHET incentive scheme. The case study examines situations where authors lack access to APC funds to enable them to publish in their areas of expertise, and on topics not recognised by the departments in which they were once located. In operating external to the DHET-delimited academy, these authors imply that potential readers of the excluded studies are thus constituted as information victims. Their complaint is that authors external to the university-based research economy are required by default to publish in magazines that lack the credibility of peer-reviewed journals.<sup>2</sup> The solution suggested in the Kulczycki et al. (2025) study calls for a more integrated bibliometric system that is inclusive of the currently operating ecosystems.

To hammer home the point, Van den Brink and Andreason leverage some South American social theory scholars to assist in questioning the supposedly white “elites” in South African universities who are assumed to be the managers of the internal DHET funding distributions. How do “non-affiliated” researchers access publication funds where formal university affiliation is a qualifier? Their argument, drawing on feminist and decolonialist frames, makes some sweeping claims while framing those who are recipients of DHET funding as “academic elites”. The latter framing—a kind of academic capitalism—is obvious to any critical scholar, but in recalling Innis’s (1946) requirement of self-reflexivity, it is novel in that recipients of the DHET subsidy rarely problematise how they are positioned as beneficiaries of state largesse and internal university disbursement policies. The two authors here do offer such self-reflexive analysis, and they do examine some of the implications of this positioning of themselves. But their argument also slides along the implicit assumption that the APC-charging journals are financially exploitative. Unless such journals obtain some kind of institutional support (as perhaps do many medical journals), they (and their editors and publishers) are the ones that are absorbing the operating cost and enabling the annual DHET transfers, without themselves directly benefiting from these funds (except where they can persuade always reluctant authors to process page fees or APCs via their universities). Even where “for profit” publishers are concerned, the legitimate journals licensed to them are aiming for viability, and the corporate publisher is also an investor in these journals. Some of the international publishers do offer hefty open-access publishing discounts for authors in low-income countries. If one then also examines the fee structures of some university-hosted open journal systems, the cost to publish is on

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2 Not mentioned is the fact that many journals have waiver policies that can be applied for by independent researchers.

average R10 000 per article, as calculated by the University of Johannesburg's head of information services (see IFK 2023).

My sense, however, is that the appeal to feminism and decolonial theory, powerful in theory in their own respective rights, clutters the key basic argument: the sense of exclusion derived from a non-university location. This is perhaps a multilayered chiral factor at work. To recall, the property of an object (the left hand, the public university research system) cannot be superimposed on its mirror image (the right hand, the private or independent research sector). The object and its mirror image are thus distinct and non-identical. The DHET incentive system was designed to capacitate the left hand, not the right hand, though universities have found a middle way in the appointment of external individuals as research associates and postdoctoral fellows who can leverage the DHET funding system.

*3. Overwhelming Technological Change:* The Socratic implications of the first printing press remain prevalent in the current context. A former Vice President of *Nature*, James Butcher's (2024) comment cements my own narrative above:

Technologists are taking the helm. They're tasked with making the publishing process faster and doing more with less. Speed, efficiency and cost control are what matter most. Editorial traditions, honed over decades, are perceived to be part of the problem. Corporate executives' primary concern is delivering double-digit revenue growth, and in an APC economy that means publishing more articles.

I now turn to the flip side, the national research economy in South Africa, where pertinent issues include the incentives, research practices, and the academic journal editors.

*1. The Incentive End of the Value Chain:* The incentive is just one "pull" component of research coordinating infrastructures whose functions are generally interdependent and best considered from a systemic (i.e. chiral) point of view (see Simpson and Gevers 2016). The publication subsidies as "pull" factors fit within the system as one of its many interacting components. The publication incentive to boost research productivity drives the "push" initiative. These two interacting forces were intentionally designed to integrate at the institutional and systemic levels. The synergetic result is that "the capacities of individual and groups of academics have occurred while expanding the resourcing opportunities" (email, Wieland Gevers, 17 May 2024).

*2. Management of Incentives:* The undoubted success of the DHET incentive scheme can be a double-edged sword. On one side, it offers the potential that the overarching system enables. On the other hand, there is the entropic tendency that, via corporatisation (of the university and publishers), elevates quantity over quality that rewards article overproduction, which stresses the academy's editorial and peer-review sectors, a gap now filled by the predatory publishers. The relative asymmetrical distribution of DHET funds between research-intensive and less research-active

universities and between the science and humanities also impacts internal university resource allocations (Figure 2). The question is whether the system can better integrate the available resources to bring the less research-productive institutions into the research mainstream. This is where the third metaphorical chiral layer resides, the stark differences between the urban-located high-research and the rural-located low-research institutions. Here, while institutions such as University of the Witwatersrand (WITS), University of the Western Cape (UWC), and University of Pretoria (UP) show lower outputs between 2021 and 2022, overall, it is the urban institutions that show greater productivity.

| Year to year comparison of journal publications |                 |                |                 |               |               |          |              |
|-------------------------------------------------|-----------------|----------------|-----------------|---------------|---------------|----------|--------------|
| Institution                                     | 2021            |                | 2022            |               | Difference    | % Growth |              |
|                                                 | No. of Units    | % of Total     | No. of Units    | % of Total    |               |          |              |
| CPUT                                            | 290,42          | 1,48%          | 275,2106        | 1,4%          | -15,21        |          | -5,24%       |
| CUT                                             | 128,93          | 0,66%          | 148,2104        | 0,7%          | 19,28         |          | 14,96%       |
| DUT                                             | 358,16          | 1,82%          | 460,9942        | 2,3%          | 102,83        |          | 28,71%       |
| MUT                                             | 55,17           | 0,28%          | 78,0837         | 0,4%          | 22,91         |          | 41,53%       |
| NMU                                             | 485,88          | 2,47%          | 468,307         | 2,3%          | -17,57        |          | -3,62%       |
| NWU                                             | 1366,26         | 6,96%          | 1342,095        | 6,7%          | -24,16        |          | -1,77%       |
| RU                                              | 471,59          | 2,40%          | 454,4945        | 2,3%          | -17,10        |          | -3,63%       |
| SMU                                             | 237,69          | 1,21%          | 228,67          | 1,1%          | -9,03         |          | -3,80%       |
| SPU                                             | 35,88           | 0,18%          | 39,9483         | 0,2%          | 4,07          |          | 11,35%       |
| SU                                              | 1774,54         | 9,04%          | 1750,5181       | 8,7%          | -24,02        |          | -1,35%       |
| TUT                                             | 246,81          | 1,26%          | 390,0329        | 1,9%          | 143,23        |          | 58,03%       |
| UCT                                             | 1534,42         | 7,82%          | 1514,2384       | 7,6%          | -20,18        |          | -1,32%       |
| UFH                                             | 194,21          | 0,99%          | 255,1466        | 1,3%          | 60,93         |          | 31,37%       |
| UFS                                             | 1015,67         | 5,17%          | 1020,3773       | 5,1%          | 4,71          |          | 0,46%        |
| UI                                              | 2006,49         | 10,22%         | 2359,6458       | 11,8%         | 353,15        |          | 17,60%       |
| UKZN                                            | 2436,71         | 12,41%         | 2343,0419       | 11,7%         | -93,67        |          | -3,84%       |
| UL                                              | 515,24          | 2,62%          | 416,5429        | 2,1%          | -98,70        |          | -19,16%      |
| UMP                                             | 52,65           | 0,27%          | 50,1119         | 0,3%          | -2,54         |          | -4,82%       |
| UNISA                                           | 1202,81         | 6,13%          | 1290,0311       | 6,4%          | 87,22         |          | 7,25%        |
| UNIVEN                                          | 109,13          | 0,56%          | 308,3237        | 1,5%          | 199,19        |          | 182,53%      |
| UNIZULU                                         | 198,93          | 1,01%          | 187,9218        | 0,9%          | -11,01        |          | -5,54%       |
| UP                                              | 2036,00         | 10,37%         | 1884,8999       | 9,4%          | -151,10       |          | -7,42%       |
| UWC                                             | 553,50          | 2,82%          | 552,7264        | 2,8%          | -0,78         |          | -0,14%       |
| VUT                                             | 106,27          | 0,54%          | 101,2659        | 0,5%          | -5,00         |          | -4,71%       |
| WITS                                            | 2046,33         | 10,42%         | 1822,3556       | 9,1%          | -223,98       |          | -10,95%      |
| WSU                                             | 173,65          | 0,88%          | 274,0543        | 1,4%          | 100,40        |          | 57,82%       |
| <b>TOTAL</b>                                    | <b>19633,36</b> | <b>100,00%</b> | <b>20017,25</b> | <b>100,0%</b> | <b>383,88</b> |          | <b>1,96%</b> |

**Figure 2:** Year-to-year comparison of journal publications (CREST 2024)

**3. The Scholarly Community:** Currently self-constituted by most universities as rent-seekers, it needs to be rebalanced as organic explorers of quality knowledge that synergistically closes the overarching two-forked system. However, when universities participate in manipulating the system, they jeopardise the very source of their success. The integrity assumed by the system's designers to promote quality research and researchers and to level the playing field is at risk of creating scholar-writers and publishers-for-hire, where a rentier class of unemployed scholars exploits the chirality of the system. These are the issues that the DHET-CREST PQRf project is examining. One such example of a "scholar-for-hire" offering to compose works on receipt of payment was recently exposed by Retraction Watch. This author had, ironically, also

offered his services to CREST. The letter read: “Dear Colleagues, Please, do you need retired research professors to publish by contract articles and books on behalf of your University. Thus, I can publish annually at least 20 papers in SCOPUS journals, accredited by DHET, and 1 academic book every second year” (21 May 2024) (cited in Mouton et al. 2025, 73–74).

4. *The Researcher*: Researcher-driven publications facilitate the DHET financial transfers that underpin the national research economy. Editors and publications need to be recognised as significant contributors to the value chain (see de Jager et al. 2024). The fast-diminishing *homo economicus* model where selfish individuals are driven by incentives would be better replaced with *homo academicus*, where doing research for its own sake is encouraged. Compare this plea with the points made by the striking journalists at *Nature* (see also Whalley 2024):

Day-to-day duties alone often demand 10-hour days and six-day weeks. On top of this, editors do significant outreach—spending their evenings at events or online conferences, giving talks, helping to negotiate standards and, as science becomes ever more interdisciplinary, helping researchers find a common language.<sup>3</sup> It’s obvious that a lot of this goes beyond their basic contracts. We do these things because we are dedicated to science, inspired by the progress of knowledge and driven to help disseminate the results for the greater good. The reward is not solely financial—it is the connection to the acquisition of knowledge and the societal benefits that these yields. (Anonymous 2024)

Lastly, and most importantly, the scientist’s academic freedom should remain at arm’s length from the state, publishers, funders, and universities even as one must navigate all the above contradictions and complexities. University research offices are the means to ensuring synergy rather than entropy. If the structures and publication morality are in place, then the integrity, viability, and purpose of the funding and regulation of the system are assured.

## Conclusion

In delving beyond the instrumentalist university administrative discourse of publication targets set for individual researchers, I have tried to find suitable practical metaphors with which to understand the symbiotic relationship between scientific and economic interests as they operate within the contemporary South African university. By excavating the brief history of immediate post-apartheid research and publication formulation the metaphor of a scissors presented itself: with scientific efforts being one fork, and the financial interests being the other, separate by chirality (see also Pieterse 2023). As such, the centrality of collaborative DHET and ASSAf efforts in bringing sustainability to the university knowledge enterprise has been examined. The quest for open access, discussed at length, should be prioritised as the practical anchor of the

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3 Reader access and ease of readability are two of the objectives of the *South African Journal of Science*.

university's biforked (chiral) system, which is necessary to avoid chaos between the university's obligation for excellent scientific knowledge production and economic sustainability.

So, where does the conversation go from here?

A definitive conclusion is impossible as all the above processes are rapidly changing, affecting daily practices. The threats are real, and the figures in retractions and fraudulent work are staggering, as measured by Retraction Watch. Self-styled forensic investigators in South Africa, as elsewhere, are on the prowl, and if our regulatory agencies falter, others will step in concerning the predatory phenomenon at the least (see de Lange 2023; Kerr and de Jager 2021).

On the positive side, the oversight offered by DHET and ASSAf regarding publication behaviour protects against predatory journals, and the NRF also warns about these when scholars compose research grant applications. South Africa uniquely develops a continuously comprehensive bibliometric map of authors, outputs, impacts, and social benefits. This enables long-term national and annual university planning based on concrete data. The CREST studies are clear on what works, how government policy contributes, and how best to leverage the available resources. The question is whether the cost of publishing will overshadow the research quality in determining where and what is published. The researcher's relationship with independent commercial publishers and university presses should not become dependent on DHET funds intended for research and open access expenses.

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