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Openness as Tool for Acceleration and Measurement: Reflections on Problem Representations Underpinning Open Access and Open Science

Jutta Haider

Open access has established itself as an issue that researchers, universities, and various infrastructure providers, such as libraries and academic publishers, have to relate to. Commonly policies requiring open access are framed as expanding access to information and hence as being part of a democratization of society and knowledge production processes. However, there are also other aspects that are part of the way in which open access is commonly imagined in the various policy documents, declarations, and institutional demands that often go unnoticed. This essay wants to foreground some of these issues by asking the overarching question: "If open access and open science are the solutions, then what is the problem they are meant to solve?" The essay discusses how demands to open up access to research align also with processes of control and evaluation and are often grounded in ideas of economic growth as constant acceleration.

Introduction

In a way, the rise of open science perplexes me and I have come to ask myself: if science is opened now, then how was it being closed before, by whom or by what? These are questions that defy simple answers. Still, I think, we need to ask them in order to understand more clearly the specific ways in which science and other forms of academic research are constituted by and constitutive of society today and of how central actors position themselves in relation to this institution and the knowledge it creates. The answers – in the plural - are not as simple as they might seem. Often we are presented with a simple dichotomy, introducing a fault line between an open science on one side and a closed science on the other. This builds on the idea that two homogenous blocks representing different stages of maturity face each other across a divide. The open side is typically portrayed as more advanced than the closed side, thus a 'natural' development has to occur in order for closed science to evolve into the mature, open version of science.

Yet, how is this imagined to be achieved? Already a superficial reading of the types of opening strategies that are thrown around in the debates, makes it quite obvious that the aspects of science that are seen as closed are not the ones that were challenged by for instance feminist, postcolonial or post-development science studies scholars in their powerful critiques over the last decades (9). Their work showed over and over how the knowledge regimes and epistemological bases of science are deeply implicated in society's various oppressive strategies. This, as I have argued elsewhere, is not fundamentally questioned in the open access movement (7, 8), rather it is used as a scaffolding and nor is it challenged much – it seems – in open science. So, if it is not this type of closed-ness that is at stake, then what characterizes the closed science in contemporary mainstream descriptions of open science and importantly for the benefit of whom is it being opened?

The problematizations underpinning open access and science

The overarching analytical question that I pose throughout this essay is: *If open access and open science are the solutions, then what is the problem they are meant to solve?* By posing this

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question I follow loosely in the path staked out by political scientist Carol Bacchi (1) who – drawing on Foucault's work - proposes a structured focus on problematizations in order to make visible the politics that organize assumptions and in turn the formation of issues. "Studying problematizations", Bacchi writes, "allows one to consider the relations involved in their emergence through examining how they are 'thought'" (1, p.4) – and practiced, I would suggest.

To do this I start with how open access was framed in the beginning and end up with its integration in a larger apparatus of open science. Other paths would be possible and certainly relevant. However, I see one important red thread running from the establishment of the open access movement in the early 2000s to today's much larger notions of open science where open access has been surrounded by more and more concepts, all amassing into a sprawling openness apparatus to be managed, controlled and kept growing. This thread can also be seen in the way in which those who were the ones challenged by proponents of open access – commercial publishers - have in significant arenas come to represent and exemplify open access and open science. They do this not in the form of a counterproposal but as an appropriation (see also 6, 11).

In times past in Budapest and Berlin

As open access has established itself as an issue that researchers, universities, and various infrastructure institutions, such as libraries and academic publishers, have to relate to, it has been reshaped and – perhaps not surprisingly – mainstream actors are now amongst its most vivid promoters, if of course not the only ones.

If we travel back in time to the early days of open access, when it got its name and the movement first gained momentum, the type of open access that was staked out then was quite different from today's. At the same time, the Budapest Open Access Initiative[i] introduced one of today's most dominant themes, i.e. the need for acceleration:

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge. For various reasons, this kind of free and unrestricted online availability, which we will call open access, has so far been limited to small portions of the journal literature.

In this excerpt, the problem identified is the existence of an access barrier to the scholarly literature. If we go one level higher, this access barrier creates a further problem that needs to be solved, namely that humanity is not united its "quest for knowledge" nor in a "common intellectual conversation". The solution to this problem is presented as two-fold: firstly, the "willingness of scientists and scholars" to freely share their work for a higher cause and secondly, removing access barriers. The latter is advanced as a technical issue. The first part – the researchers' cooperation - is seen as already in place, yet hampered by the said access barrier. In the second part, the speed of research is highlighted as an issue to be addressed. The image invoked is that once the metaphorical floodgate that presents a barrier to the literature is opened, research will accelerate. The need to see an acceleration of research is

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closely linked to the temporal dynamic of capitalism that requires constant acceleration of economic growth (14, 17). This is a theme that will shape how open access merges into the mainstream and into open science over the following decade, however it will also diversify.

The hugely influential and signed Berlin Declaration[ii] signed a couple of years later, is more technical in style and also more detailed. However some of the underlying problems that can be drawn out are in fact quite similar:

For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access. /.../

In order to realize the vision of a global and accessible representation of knowledge, the future Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible./.../

Open access contributions include original scientific research results, raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia material. /.../

Our organizations are interested in the further promotion of the new open access paradigm to gain the most benefit for science and society.

Here, the problem that can be addressed with open access is the lack of an accessible global representation of human knowledge to the advantage of science and society. Also here the barrier is a technical one, and it includes a lack of openly accessible content, but also for instance software, metadata and so on, making archiving and accessing possible in a meaningful way. Apart from the Budapest Initiative, the Berlin Declaration directly refers to the so-called Bethesda Statement[iii] as influential for its understanding of open access. Even in the last named, the problem that is indirectly seen as the one that open access should solve is that the public benefit of scientific knowledge is not made the most of. Open access, which also in the Bethesda Statement is possible since researchers already share their knowledge and ideas, is framed as a technical problem and as an issue for policy making.

The researchers, as in the Budapest Initiative, are already part of the solution. As I and others (e.g. 7, 8, 10, 15) have argued elsewhere, these early statements and others from around the same time and the visions that are bound up in them also came with a specific set of difficulties. Specifically, the way science is seen to advance along an almost natural path by means of publishing results in papers and where more and more progress and development flows from science. Besides, they neglect that scientific publications in addition to their epistemic role where they are communicating content, also function as ways to indicate status, merit, advancement, belonging and so forth and are as such profoundly entangled across scholarly practices on many different levels.

For those following the discussions at the time, there were largely three arguments used to make open access an attractive proposition to researchers and policy makers. Firstly, for researchers, measurable impact in the form of increased citations was highlighted, as these can then directly feed into performance measures as the main way for structuring academic careers. Secondly, for policy makers and research funders, costs together with efficiency were advanced as gains; speeding up the scientific process, making things happen faster, and cheaper. Third, the arguments were held together with the notion that the results of research funded by tax-payers should not be paid for twice, but directly be available to tax-payers

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without additional costs. Here, it made sense to connect ideas of an information commons to open access (18). In order for this to make sense in turn a focus on publications was not enough, but the entire process of doing research had to be lifted into the discussions around openness.

London calling: accountability, efficiency and economic growth

In the years that followed the early drives, things changed. Some problematizations increasingly gained in importance while others faded and yet others diversified. Sketching this process in detail is beyond the scope of this essay. However, when in 2012 the so-called Finch group report was issued the difference was quite manifest. This "Report of the Working Group on Expanding Access to Published Research Findings" (5) is an extensive document commissioned by the British government. It details various processes involved in scholarly communication and the actors involved. One section is particularly relevant for understanding what the supposed problem is that open access is meant to solve. It reads as follows (p.5):

Improving the flows of the information and knowledge that researchers produce will promote:

- *enhanced transparency, openness and accountability, and public engagement with research;*
- *closer linkages between research and innovation, with benefits for public policy and services, and for economic growth;*
- *improved efficiency in the research process itself, through increases in the amount of information that is readily accessible, reductions in the time spent in finding it, and greater use of the latest tools and services to organise, manipulate and analyse it; and*
- *increased returns on the investments made in research, especially the investments from public funds.*

Yet, despite the authors' assertion that "These are the motivations behind the growth of the world-wide open access movement" (ibid.), many of the issues identified as being the problems that open access should solve differ from the ones identified in what could be considered the 'founding documents' of the movement. For one, the general public (or humanity) almost disappears due to a significantly more realistic understanding of the level of specialization of research fields that make much of the literature almost impermeable outside a narrow scientific community. Here, the authors call for facilitators to translate the specialized language of science into meaningful communication with the public (p.51).

In the Finch report, the problems that require open access as a solution are, if we take the list above seriously: research's insufficient transparency and accountability, the relative inefficiency and slowness of the research process, distance to innovation, insufficient returns on the investments made in research and hence inadequate contribution to public policy making and thus – ultimately - to economic growth. The language alludes to the economism of new public management, where efficiency, transparency and most prominently accountability are staples (16).

The Finch report is neither declaration nor statement and hence less sweeping in its claims. Its recommendations are detailed, often well-grounded and considerate of the complexities of scholarly work and communication. One pervading theme in the report is acceleration and growth: speeding up access, speeding up research, growth of the number of publications, of information, of innovation, and ultimately of the economy. However, in the dictum of new public management, economic and other kinds of growth or increased returns on investment only exist when they are measured (ibid.). Hence accountability and transparency, typically translated into often numeric indicators make their entry. Publishers are seen as playing a key

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part in this. Curiously the universities' own repositories are scarcely mentioned in the path towards open access that is sketched in the Finch Report. Open access is turned into gold open access and gold open access is equated with the commercial publishers' version of it – pay to publish rather than for instance open access journals that are financed through grants, memberships, universities, or public funding as established for national journals in South America.

In the Finch report a few staple issues are engaged and these still re-appear and shape much of the mainstream discourse on open access and now also open science. Open access, at least from the vantage point of policy makers and research funders, is now primarily a business model for managing relations between public funders and private enterprise, tied to the scientific community through performance indicators with the ultimate aim to increase efficiency, enable (commercial) innovation and economic growth. It is now also just a puzzle bit in a larger idea of open science, where the entire research process needs to be opened up according to very specific ideas about their previous closure.

The New Berlin: cash flows and evaluations

This business model approach becomes very palpable in the way in which the libraries' role is described. In the OA2020 Initiative for the large scale transition to open access –a follow-up to the Berlin Declaration – libraries get a prominent role and in the roadmap to implementation they get their own headline "The transition begins with libraries" right after the introduction (13). Yet, the role of libraries is quite specific:

As libraries are the organizers of the cash flows in the subscription system, they are the ones who must show leadership in grasping that their acquisition budgets need to be liberated and reinvested in open access publishing services. Libraries are also predestined to be the organizers of the cash flows in an open access publishing system, because they have the skills, the experience with publishers and the staffing to take care of the necessary administration. Their implicit challenge is that they must evolve their roles, responsibilities, profiles and workflows.

Considering that a considerable part of the transition once did begin with libraries and librarians, it is interesting that what counts here is not their experience with open access or even their role in scholarly communication, collection building and in preserving and making accessible the records of science, but their experience with publishers and budgets. After all, libraries and librarians were one of the earliest driving forces behind open access and in the course they have already considerably evolved their "roles, responsibilities, profiles and workflows" as they lobbied university management, funders, researchers, promoted open access to the media and the public, developed and maintained institutional repositories, directories of open access journals, held lectures and seminars, organized conferences about open access and much more.

Furthermore, leaving aside the constrained position libraries are in regarding control over their assigned budgets, what is fascinating here is that this is the only role libraries are seen to have for open access in this roadmap: dealing with the budget and the costs of open access as well as administrative duties related to redirecting the cash flow from subscriptions to open access publications, presumably author fees. In most cases the recipients of this re-organized cash flow will be the same publishers that previously charged subscription fees (see also 11, 12).

The OA2020 initiative is interesting also in a different way. In the Finch report we could see the language of new public management's audit culture shine through: open access should usher in improved efficiency, increased return on investments, accountability, and innovation. The

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OA2020 initiative sees itself as "one element of a more profound evolution of the academic publishing system that will lead to major improvements in scholarly communication and research evaluation" (13). An exact discussion of how open access should improve research evaluation is beyond the scope of the initiative, yet statements like these tie open access closer to a form of administrative enclosure through which research policy actors express and enact control. Open access has been turned into an indicator, one amongst others, to motivate researchers and to assess their performance.

Brussels taking interest: acceleration galore and disruption as the new normal

This becomes interesting in the final document that I want to discuss, the European Commission's 2016 publication "Open innovation, open science, open to the world – a vision for Europe" (3). Here it becomes clear just how many different concepts have been latched onto open access. Open access has now become just a small wheel in a type of *deus ex machina*, where a specific kind of ideologically confined, technical openness becomes part in an imagined transformative system change that is almost entirely impregnated in the language – some would say jargon - of economic necessity, commercial interests and technological determinism.

The document consists of four parts, the first three are reflected in the title and the last contains a selection of tone-setting speeches by Carlos Moedas, European Commissioner. Other fundamental concepts discussed are open data and citizen science. The way in which open science is couched between a section on Open Innovation and a part called Open to World is symptomatic for the conflicting framing of the issue, a conflict between a notion of universal science collaboratively produced for the common good and "capitalism's speed imperative" that within the structures of academia is often enacted as "competitiveness talk" (17, p.35 and 95seq.). Open science itself has to become part of a competition:

Ensuring Europe is at the forefront of open science means promoting open access to scientific data and publications /…/. (p.7)

Throughout the text, and certainly in the speeches, the most eminent reasons for implementing open science and open innovation are framed in terms of competitions. Allusions are made to a race in science in which Europe is lagging behind or at risk of falling behind and which open science should help win. Acceleration, speeding-up, a theme that was already established in the Budapest open access Declaration, fifteen years earlier, is a defining feature of this vision for open science in Europe. It is translated into winning a race, topping a league table, winning Nobel prizes, taking on the USA, and importantly transforming scientific results into commercial output, i.e. innovation, which should put European industry ahead in various ways. Crucially, open science is to be helped by open innovation "to connect and exploit the results of open science and facilitate the faster translation of discoveries into societal use and economic value" (3, p.15) and so on.

The document is packed with metaphors alluding to speed, races, rankings, competition, the need to catch up – in short today's (closed) science is too slow, openness means acceleration and acceleration means winning the all-defining, all-encompassing race progress is seen to be. Superficially, this stands in some contrast to an "open to the world" attitude which is also present in the text and where global challenges (e.g. Zika, Ebola, food, water, health and energy) must be solved across national borders. Yet, even collaboration is cast in a terminology of competition, "global competition for talent" (p.60), "the rapid rise of China" (p.60), but "Europe has been able to maintain its lead in terms of highly cited papers" (p.61), yet the US is, at least according to certain measurements, better at collaborating with Asian countries, a problem that means "All available instruments are put to use to maximize the impact of

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international cooperation on research and innovation"(p.64). In short, open science is a means to win a race, even when it is about working together. The market-place rhetoric of competition is also reflected in the general framing of open science in the section's introduction, where science and open science are likened to businesses:

Open science is as important and disruptive a shift as e-commerce has been for retail. Just like e-commerce, it affects the whole 'business cycle' of doing science and research – from the selection of research subjects, to the carrying out of research and to its use and re-use - as well as all the actors and actions involved up front (e.g. universities) or down the line (e.g. publishers). (3, p. 33)

The image of disruption of retail is here presumably intended as a positive signal for change, yet it also gives way to images, I suggest, of a concentration of power and wealth in the hands of fewer and fewer internet companies, of abandoned city centers, of labor market deregulation and increasingly worsened working conditions for workers in the so-called gig-economy, and exploitation of free labor and automation of work.

Closed is open and open is closed: openness as a performance indicator

In the early days of the open access movement and to a degree also in the Finch report, scholars were framed as part of the solution to the respective problem that was identified. In the latest version of open science, their role is imagined differently. In fact the tables seem to have turned. Here scholars are part of the problem while those that once were the barriers have come to signify openness.

In a figure in the report (3, p.15) open science is illustrated by various digital services from discovery, analysis, writing, publication, to outreach and assessment. The services and tools are presented in four rows, whereas three list services by Elsevier, Springer, and Google. The last row lists services by Wikimedia. Publishers and the biggest internet company of them all, Google, have here come to illustrate and signify open science. The roles of researchers are a lot less obvious. Theirs is a role that needs to change, adapt, transform, be surveilled, incentivized and most of all improved.

For this, open access and open science are turned into performance indicators to be used for evaluating individual researchers. "One incentive is to integrate open access in the evaluation of a researcher's career" (3, p.50) a statement reads on the same page as the illustration described above. The notion of competition and acceleration that underpins much the contemporary mainstream discourse of science (17) and which is often expressed in terms of various indicators (2) is applied directly to open science, at the same time as it is framed as a transformation, a disruption of the system, thus further solidifying the imaginary of open science as part of the never-ending acceleration and economization of society.

Openness: acceleration, measuring and economization

In this short essay, I argue that a significant part of how open access and increasingly open science is imagined today and specifically of how mainstream actors, such as funders and national or supra-national policymakers present it, is part of a drive towards a further economization and privatization of a vast and diverse field of publicly funded knowledge production. This is not the case, for all of open science, of course, as evident in numerous alternative scholar-driven projects, often in the humanities, the arts and related fields, which are about a different kind of change.

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Yet, the version that has traction, and policy making and funding behind it, needs to be understood, I suggest, within larger tendencies of capitalist dynamics of constant growth, acceleration and value accumulation framed in simple trajectorial narratives (4, p.134-136) where progress largely means following a linear path towards increased efficiency while chasing a relentlessly delayed future. To go to the bottom with this – also in order to enable alternative narratives and to attend to diverse ways in which actual research practices are reshaped as a response – is a large project and here I could only sketch some preliminary lines of analysis while zooming in on a few selected instances of how the aspired openness and the imagined closed-ness of science are given meaning in relation to each other on a macro-level.

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