Crystals of Knowledge Production
An Intercontinental Conversation about Open Science and the Humanities

By Thomas Wiben Jensen and Jean-Claude Guédon

Edited by Niels Stern*

Abstract

In this article two scholars engage in a conversation about open access and open science in research communication with a specific focus on the Humanities.

The two scholars have very different points of departure. Whereas Jean-Claude Guédon has been a professor of Literature in North-America for many years and part of the open access movements since its beginning, Thomas Wiben Jensen is in the early part of his carreer and fairly new to the concept of open access.

The conversation begins with a focus on the Danish national strategy for open access and this strategy's consquenses for the journal NyS where Thomas Wiben is part of the editorial board. However, the conversation brings the reader on an unexpected journey through the history of science communication and through alternative ways of understanding knowledge production as frozen moments or crystals in the Great Conversation of science.

It is the hope of the article editor and the contributors that the conversation can lead to a debate about innovative ways of communicating and distributing scientific results

Keywords:

Open access; open science; humanities; science history; journal publishing; digitization; knowledge distribution; communication

* Corresponding author: niels.stern@gmail.com For more author information, see end of article.

Opening remarks by the article editor

"Open access is a matter of getting maximum value for research." So it reads in Denmark's National Strategy for Open Access (2014). Open access gives value for researchers and their institutions, for companies, and for society as a whole. It is by sharing and re-using research results that research itself can prosper and innovation can be sparked. Open access is the best way to ensure this.

Two thirds of the seventy studies listed by SPARC Europe (2015) show that open access articles are being cited more often than non-open access articles. To the benefit of the researchers. One should then think that all researchers immediately would demand open access when publishing in journals or ensure open access by self-archiving their peer reviewed manuscripts in an open repository.

This, however, is not the case. Globally, open access to peer reviewed articles is still below 50 per cent – there is some controversy as to how to actually calculate this number and therefore different measures circulate, see Archambault et al. (2013). Despite the many open access mandates, strategies, and policies that have emerged over the years. Although things may be moving in the right direction in terms of gaining more open access, progress is slow and troublesome. And in some disciplines – especially within the Humanities and Social Sciences (HSS) – open access is still often being perceived as the Obscure Alternative rather than the obvious way to boost a research career.

The idea of this article is not to speculate about why there is such relatively slow progress of open access to research literature. Nor will it perform desktop research or quantitative studies. Rather, the intention is to zoom in on a specific case which in many ways can exemplify a tendency which is prevalent especially in the fields of HSS. Although the case is Danish it resonates tendencies in all of the Nordic countries and beyond.[1]

The form of this article is somewhat unusual. Its core is a correspondence between two HSS scholars from different continents, of different age, and while the one has been part of the open access movement since its early days the other has just recently become acquainted with the concept. The former is Professor of Comparative Literature at the University of Montreal, Jean-Claude Guédon.[2] The latter is Associate

---

[1] The Nordic countries being: Denmark, Finland, Iceland, Norway, and Sweden – see www.norden.org/facts
[2] http://llm.umontreal.ca/repertoire-departement/vue/guedon-jean-claude/

Professor of Language and Communication at the University of Southern Denmark, Thomas Wiben Jensen.[3]

Thomas Wiben Jensen is also member of the editorial board of a well-esteemed Danish journal in linguistics (NyS – Nydanske Sprogstudier[4]) founded in 1970. The journal is hosted by Aarhus University Library using the open OJS platform.[5] It is a subscription based journal, yet the subscription base is rather small (104 private subscribers and a few institutional subscribers making the journals annual subscription revenue around 3–4,000 USD). All articles are online including the backlist, however new articles are set free only after 24 months. The journal receives public funding.

Such a publishing model is not unusual in Denmark – or in the Nordic countries for that matter. But it doesn't quite fit with the national strategy's ambition of immediate open access. Thus zooming in on this particular journal might be a good point of departure when trying to grasp why researchers don't just embrace and even demand immediate open access. And why a Danish journal like NyS hesitates deploying a true open access model. We'll see.

As member of the editorial board of NyS the first question then goes to Thomas Wiben Jensen: Why are articles in NyS not immediate open access? The journal sits on an open platform. It receives public funding. All work is done by public employed university staff. But most importantly, opening up would be beneficial to the authors!

First intervention by Thomas Wiben Jensen

The main reason why NyS articles are not immediate open access is a consideration for our main resource of financial support, Dansk Sprognævn (The Danish Language Board – DSN). DSN covers our costs and basically ensures that NyS will continue to exist. Our subscription base is not large enough to cover the cost of printing, setup, distribution and so forth. The worry is that DSN will not be as willing to "foot the bill" if our subscribers realize that the (printed) journal they pay for is actually available for free online. There is a bond of loyalty between DSN and the subscription base, you might say, rooted in the days when the journal was only available on print. The second reason is a consideration that, in reality, NyS articles are

---

[3] http://findresearcher.sdu.dk/portal/en/persons/thomas-wiben-jensen(56bb9431-f739-4769-abad-6f66016441e7).html
[4] www.nys.dk
[5] https://pkp.sfu.ca/ojs/

actually available immediately for a large number of people. There is access to NyS articles (including the latest issue) via the university libraries in Denmark. These libraries pay a (relatively modest) subscription fee to NyS and if you are either a student or researcher/affiliate at a university you have access immediately if you log in to the system. Furthermore it has even been brought to my attention by another member of the editorial board that in principle everybody in Denmark has access to the resources of university libraries if they create a user account (they probably have to meet up in person at the counter though) since they are all public libraries. Now, it is my hunch that very few people are actually aware and make use of this but the possibility remains and it makes it harder to argue for complete open access on the NyS website.

Intervention by the article editor

This description resembles arguments that I have heard often before. Journals that are tied to a publishing model of the print world believing that opening up will eventually mean the end of the journal. My first reaction is that DSN – as the funder of the journal – would be looking for maximum impact which entails that the journal is being distributed as far and wide as possible, and used and cited extensively. Being digital and open is a proven route to obtain exactly this. So the question remains: Why would the funder worry about opening up even though this means losing the (very few) existing subscribers?

It's time to bring Jean-Claude Guédon on board the conversation. Among many, many other things he was the co-founder of one of the world's first open access journal in the Humanities – "Surfaces"[6] – founded in 1991. So, Jean-Claude Guédon, how do you analyze the situation of the journal NyS as outlined by Thomas Wiben Jensen?

First intervention by Jean-Claude Guédon

What is striking in the debate about open access is that the notion of open access is not considered in itself; rather, it is refracted mainly by the ways in which it may affect existing dissemination tools, habits, actors, and institutions. The basic question, raised at the very beginning of the text, is about access, which open access obviously addresses. However, and very

---

[6] http://www.pum.umontreal.ca/revues/surfaces/

rapidly, the text shifts to journals, in this case NyS, and why its articles are not in open access. This immediately begs two questions:

- Why journals?
- Why articles?

Predictably, because journals and articles are taken to be objects located beyond critical thinking, the sought answer rests on the need to preserve the journal (and the articles it contains). Open access is no longer an objective; it is a potential threat to a familiar and comfortable situation. It is immediately viewed as disruptive. As a result, the discussion finds itself constrained within a framework where the emerging digital world is supposed to emulate the printing world, but do its copying faster, more efficiently, more accurately. This is precisely the point that must be questioned.

To understand why, it may be useful to imagine a similar question applied to the advent of print, back in the second half of the 15th century. With scriptoria in place in monasteries, universities and royal courts, a thriving manuscript industry was churning out the many documents that were needed. The growth of demand allowed print to put its foot into the proverbial door, but, obviously, the copying capacity by itself was not sufficient to explain the rapid growth of printing in the late 16th century and later.

Some functions fulfilled by the scriptorium were not easily met by printers. For example, the trust one could place in a manuscript copy was obviously tied to the reputation and reliability of the scriptorium or monastery used. By contrast, printers were newcomers, with an untested reputation at best. Often, the source(s) of the printed document were not known. Printing begins to look like a form of mass production, unlike the bespoke form of service that manuscript copying offered. The printers' motives to print were clearly driven by a form of profit-seeking, but this meant up-front investments and risk-taking quite unlike the service model of scriptoria. Texts chosen for printing, if they are to be profitable, must be either in high demand, or some form of subscription will be required to provide a degree of certainty for the investing printer.

Confronted with such problems, printers came to invent new textual objects. The periodical reflects this kind of innovation. It began to emerge in the first third of the 17th century, first to cover political and cultural news, later to channel scientific news. In this way, the scientific journal

finally stabilized in a familiar form, generally associated with the Philosophical Transactions of the Royal Society (1665); the article form found within these journals began to evolve as well. It can be noted, however, that early "articles" included excerpts of letters to the editors – a practice that still survives in some journals nowadays, and which preserves the earlier, epistolary form of scientific communication.

As these transformations began to take root, new modes of thinking emerged as well. For example, printing hundreds of copies of journal issues makes their content almost indestructible once they are scattered among many institutions and homes. As a result, the act of copying, by hand or print, began to display diverging characteristics. In the manuscript world, copying is the essential act of reproduction that guarantees the survival of a document. Schools of thought (Platonism, Aristotelianism, Galenism) survived in this manner, and expanded through commentaries. However, in the print world, preservation through copying is only part of the story. As older documents became more available – the access issue again – printing gradually focused on producing documents that were either different or at least distinctive from those already produced: novelty began gradually to take its place beside the old, and even began to challenge it: la querelle des anciens et des modernes – ancients and moderns – can easily be related to this new environment. Also, as the new is often perceived as better than what preceded, the notion of progress appears ever more convincing.

This is not the place here to pursue such digressions, but what has been adumbrated allows to see that something very fundamental took place in the transition from manuscript to print: it is not simply a matter of substituting a copying technique by another, albeit more efficient. More deeply, the objects produced, the cultural values attached to them, and the relationships people maintain with these objects shift in a considerable way. The relationships between documents also shift, and, in the end, society reflects those transformations in its very economic and political structure.

Our present transition into the digital age is at least as fundamental as that brought about by print. Consequently, and reasonably, we must expect shifts that will affect our societies, our cultural values, our ways of thinking, our methods to manage memory collectively, and do so at least as deeply and intensely as print did.

Which brings us to the fundamental issue: given the perspective of deep, yet largely unpredictable, transformations, what should we try to preserve? Journals even though journals may not exist in a century? Articles, even

though articles in science represent little more than the unavoidable syncopation of a halting conversation carried out by a technology committed to batch production? Obviously, neither answer is satisfactory when thinking of optimizing knowledge production in the future (and even the near future). Already, new forms of publications are appearing, such as mega-journals which mystify many people because, in point of fact, they do not really look, or behave, like journals. Other journals, such as the Research Ideas & Outcomes[7] try to follow the production of knowledge from its inception based upon various hypotheses and problem settings, to results closer to the traditional article, while also managing the associated data. Yet again, the rising visibility of the concept of "publishing platform" also points to deep transformations in the contexts within which scholarly dialogues are increasingly being carried out.

Behind all of this stands the still enigmatic figure of Wikipedia which, obviously, is not a research instrument, but which nevertheless, as the repository of consensually-acceptable knowledge, defines its complements at the research fronts. It may still be a controverted project, but it points to a deep challenge to the Romantic notion of authorship.

To come back to the initial question, of course journals presently play a number of fundamental and important roles in the production, validation, preservation and dissemination of knowledge. However, would it not be much better to try peering into the future by focusing on these functions? We could then examine how to preserve and even optimize them. We could imagine how to finance them by associating them with the kinds of objects and processes that best fulfill the needs of the "Great Conversation" of knowledge production. Doing so would also allow us to look at the present situation more critically: the present journal format is not without limitations, faults, and deep problems, including its associated forms of business plans. The article as a kind of frozen moment in the scientific discourse may soon look hopelessly outdated and ill-conceived. The task at hand is to start from the digital reality of documents and their management, and create the digital objects, tools and processes needed to enhance dialogue among researchers.

Second intervention by Thomas Wiben Jensen

Thank you for such a thorough and thought provoking reply. It is hard to do justice to the many themes and perspectives that you raise in your

---

[7] http://riojournal.com. Disclosure: I just joined the advisory board of this fascinating project.

historical and epistemological account of distribution of knowledge. Nevertheless, firstly I would like to acknowledge, and perhaps expand, on your questions about the raison d'être of journals and articles as such by relating it, very briefly, to my own field of research, that is distributed cognition and language. In recent years new ways of conceptualizing cognition and thinking have been appearing that look upon cognition, not as abstract internal representations, but as embodied, distributed, embedded and situated. In brief, cognition is no longer reserved to the individual mind – as has been the tradition in Western thinking for millennia – but is now transcending the boundaries of the skull. Thus, cognition is seen as fundamentally distributed between minds, bodies, objects, technical systems, artifacts, and social dynamics that together constitute a complex network – a network that in itself can be seen as possessing emergent cognitive features. Interestingly, the distributed view on cognition and language seems very analogous to the way IT-driven social networks, such as the concept of open access, are changing our basic ways of thinking and interacting with each other. The affordances of the rapidly evolving new social technology not only highlight but also exploit and encourage perceiving, acting, thinking, and communicating as fundamentally shared activities. And this is a development that challenges the traditional division between the individual and the collective. Cognition and thinking have now moved "out of the box" literally as well as figuratively speaking. In that way I completely agree that open access is not just a new tool; it is not just a way of substituting one technique by another, since it will alter our way of sharing, and attributing value, to knowledge and research.

Where this changing process will lead us however and how it will change some of our fundamental conceptions about knowledge distribution I do not know, and I suspect nobody knows at this present moment. This leads me secondly to the point where I disagree or at least would like to challenge some of the consequences you seem to draw from the recent technological evolutions. I still do believe there are some of the conventions and values of the present way of thinking about research, and its distribution, which are valuable and worth maintaining – simply because we cannot do without them if we want to preserve the scientific production as we know it – and that is of course an open question if we want to do that. You talk about challenging the "Romantic notion of authorship". But, I wonder, what would you replace it by and what would be the consequences? In my opinion we still need these "frozen moment(s) in the scientific discourse"

in order to grasp the developments in science. We simply need to be able to track who has come up with what, and who is responsible for the development of this particular set of ideas, in order to have a meaningful conversation and exchange of ideas. Obviously, no one develops ideas completely on their own; you may write and discuss with other researchers, you borrow from others all the time, and on a more general level you will always be influenced by conversations and writings that have taken place before you entered the "great conversation of knowledge". In other words, thinking and the production of ideas are in a constant state of flux, but exactly for this reason we need stable and frozen entities, such as books or articles, that give us a platform from which we can "jump into the conversation" and perhaps even contribute to it by producing articles and books ourselves. Obviously, open access is a powerful way of enlarging that discussion and making it much more inclusive and rapid. But even if open access prevailed completely we would still need something like articles, in the sense of texts produced by specific and identifiable individuals. After all, in order to have a meaningful conversation one needs reliable interlocutors; otherwise it is just the roar of an unidentifiable crowd. Or put in another way; even if cognition and thinking can be seen as distributed and inter-related we still need points of fixation from which the distribution can take place.

In continuation of this my main question to you would be if you really believe that the notion of individual authorship should be altered – and if yes, what would be the realistic alternative to this way of doing things? And I want to stress the word "realistic" here, since I see a tendency to challenge and deconstruct all of the traditional ways of doing science on the one hand but, on the other hand, I do not see a clear formulation of realistic, as well as ethically sustainable, alternatives.

Finally, I would like to bring the discussion a bit more "down to earth" by relating it to the concrete example of NyS. How would you convince the editorial board, as well as our funders in DSN, that shifting to open access is a better option in terms of bringing the journal forward? Or do you perhaps, at a more fundamental level, believe that such a move to open access would imply that we would have to abandon our traditional conception of what a journal, and in this particular case, NyS, looks like and is supposed to do?

Second intervention by Jean-Claude Guédon

What a wonderfully interesting response: I resonated with much of it. I believe you have fully grasped what I was trying to say. I should add: thank you very much for a truly enlightening, synthetic, crisp, recap of my embryonic musings. And, of course, you have done much more than that.

Obviously, I have a few important challenges to meet, and you have pointed them out very well. Let me try taking them in order.

Like you, I believe that there are fundamental values and objectives in the present process of knowledge production that should be preserved. Because the invention of a humanly distributed system of knowledge production – an essential element of the so-called "scientific revolution" – appears to prefigure the approach to cognition that you beautifully outlined in the first part of your text,[8] it is conceivable to describe it as the social and institutional implementation (and transposition) of what cognition may indeed mean at the most fundamental level. At the same time, it is also conceivable to imagine that this is an on-going process that probably emerged with language itself, was propelled forward by ever more efficient forms of writing, and is undergoing deep transformations with shifts in technical infrastructures such as print, and, nowadays, networked digitization.

In saying this, of course, I find myself located at a much deeper level than the entity "journal". A journal, in that perspective, is probably the best approximation to feeding the "great conversation" of science in the print world. Its purpose was to help make that conversation as fluid as possible, given the technical limits of print. Unlike books which the journal form tried to complement, ideas could be circulated relatively quickly (although that became also an issue: the Royal Academy of Science in Paris, in the 18th century, was running three years late). They were generally fast enough to fulfill the needs of scientific controversies. And, as a derivative of the print form, the journal article easily comforted the notion of "author" as it emerged in the wake of print.[9]

But there is a deeper level. The deeper level I am trying to identify corresponds well, I believe, to formulations you use most felicitously: "reliable interlocutors", "frozen moments", "stable and frozen entities" and which I like very much. I like them because they do correspond to functions (or services, depending on the viewpoint) of journals. The peer review

---

[8] In passing, in the thirties, Maurice Halbwachs was studying similar ideas. See, for example, Halbwachs (1997).
[9] On this issue, see Rose (1995), and, from a radically different perspective, Foucault (1969).

process, to the best of its abilities, ensures the presence or reliable interlocutors. To me, "peer review" is a bit like a passport: by addressing the question of quality in relation with a piece of work, it provides an entry document into the "scientific territory". From that point on, the piece of research can be exposed to the rough and tumble of scientific exchange. "Frozen moments or entities" as well as "stable" entities are also direct consequences of the print process, and they are precious.

My question, however, is whether these entities, frozen and stable as they must be, need be caught in the Procrustean bed of the article format. Obviously, the answer is negative. In fact, journals have tried, within the limits of what print and its economics permit, to accommodate other formats: letters to the editors for short inputs, and articles in installments for longer pieces that fall somewhere between the acceptable article length and the monograph – the pesky 40–90-page piece in the humanities and social sciences. The latter example, however, shows all the awkwardness of the "solution": the piece is cut into parts, and distributed over periods of months, if not years.

In effect, the same forces that worked to produce the article form within journals as a complement to the monograph are still present, and, in my opinion, they are demanding ever shorter, faster solutions because the "great conversation" also needs it. I am not arguing that all discussions taking place within the "great conversation" have these requirements, but many do.

So, let us move on with other possibilities. Although, obviously, I do not have the gift of predicting the future, I do believe that signals around us can give us some ideas of what might be in the offing. I will take the example of coding which, after all, was the earliest form of "writing" in a fully digital context. What strikes me in the coding experience is that all the requirements proposed above remain valid. Computer programmers know how to identify the "valid interlocutors": this is simply a consequence of recognizing coding competence. It is a form of "peer review", but a peer review focused exclusively on competence and quality. "Frozen moments and entities" remain in the form of versions. However, a version significantly differs from an article in one major way: the difference between two versions can be quite small, almost infinitesimal, and a version constantly provides a global image of a programme. In this regard, programming provides both the totality of a monograph, and the possibility to intervene at a variety of scale ranging from minor corrections (bugs) to total overhauling of a programme (major new version or even forking). This

is why I mentioned Wikipedia in my earlier intervention, while being fully aware that Wikipedia does not answer the issue of credible interlocutors.

The issue of authorship is really interesting in this context. Coding is sometimes done, like a monograph, as a grand, solitary, masterpiece: the famed Emac written by the equally famous, GNU project mastermind, Richard Stallman is a monument in this regard. But, even in that example, it was released and then worked over by battalions of volunteer programmers to improve and extend it. Most pieces of programming, just like scientific research, are done in a distributed, half collaborative, half competitive manner, and this is particularly true in the sphere of "free software". What is interesting in such cases is that, at the level of the "source" (as in "open source"), the interventions of the individuals, however minuscule, are normally and regularly attributed to someone. The reason for this is both obvious and familiar: if the software is to be used in mission-critical situations, and it fails, knowing where the fault lies and who is responsible is important; but attribution can also feed a portfolio of achievements that are crucial to develop a career. Amusingly, the first reason (accountability) was also at the heart of the appearance of the author's name in a printed text. Legal deposit, whatever its name then (I am placing myself more or less in the 16th century) was designed to create an archive that could be used against an author, should the printed document prove to be a nuisance in the kingdom (or whatever). Royal libraries, in this perspective, were meant more as a tool of the judiciary than as a form of public enlightenment. In fact, they were not made public until quite later.

So, as a partial conclusion, I certainly do not question the crucial values, moments, and entities that have underpinned the design and gradual evolution of scientific journals, but I question the kinds of frozenness and stability that are all too familiar to all of us simply because we have lived with printed journals for exactly 350 years.

Now remains the toughest of all nuts to crack: the editorial board. What can be done?

My first answer would be to begin, to the extent possible, with a calm and serene discussion about the wider context. This should be possible because print journals and their present electronic transposition (Gregory Crane, famously, declared a while back that we live in the age of digital incunabula) are going to evolve only gradually. Journals will disappear, I believe, but I certainly will not see their demise, and, probably, neither will my children. My grandchildren, on the other hand ... Note that the production of manuscripts which ultimately was largely limited to letter

writing, is finally coming to a close thanks to a second technical revolution – namely digitization: we e-mail rather than write letters by hand, except on rare occasions.

My second answer would be to look at what is happening in science at large and note the ever-growing importance of model building. Models are interesting because they rely heavily on data and their insertion into various theoretically inspired relationships. They behave a little like a programme in computer science. The refutation or verification test that is so fundamental to the scientific conversation is then carried out by making the model work and "predicts" (sometimes retroactively) the results to which a complex system will give rise or should correspond to. From climate change to vaccination testing on body models, all kinds of fields in science are being transformed by this approach. It has been made possible only thanks to computing power that is growing ever more immense every day. In effect, reality itself is seen as a model, and the challenge is to create a faster, yet accurate, model that will allow us, humans, to beat reality at its own game, to identify what are the crucial parameters affecting its evolution, and to use this knowledge to make the model evolve in a "better" direction. Then all this may be applied to reality itself.

Now, imagine models to be the future equivalent of journals: they would assemble people interested in very specific problems, so that the community aspect of journals would be retained. But the modes of intervention would begin to resemble more that of computer programmers than present "authors" of articles. Also, models would need to define their frozen moments for taking stock, etc. Models, in other words, will require a certain form of governance which could be carried out by the mutation of an editorial board.

By this time, I can sense your editorial board is shuddering and fretting loudly. But I will continue all the same. Remind these colleagues of yours that this is going to take place only gradually, and then suggest to make small experiments destined to "liquefy" the elements of the conversation: how would you like to introduce new frozen, stable "small moments" that would be on a smaller scale than articles or even letters to the editor, that would be more rapid, etc. Already, web sites include reader's reactions: how could these reactions be included in a "living document"? Etc. And, of course, open access would greatly stimulate this process by increasing the number of possible participants (once they are recognized as credible interlocutors by the quality of their intervention).

At this point, my impression is that we have room to create an enormous amount of intellectual fun!

Third intervention by Thomas Wiben Jensen

Again, I have to express my admiration for your innovative way of addressing this problem; it really has enlightened and expanded my view on the phenomenon of open access. It rarely happens that you read something which is truly new and makes you see things in a different light. Both your answers, however, have done exactly that. I feel honored to be part of this discussion and can only hope to contribute a little by following up on your thoughts, asking for clarifications and trying to synthesize. As I read it, you raise (at least) three important issues concerning knowledge production and ways of sharing new ideas. One concerns the issue of time, another, the question of formats, and the third one the impeding questions of identification and accountability – all of them pointing to new ways of perceiving these issues of course. Now, let me try to deal with them in turn.

Time

Obviously, open access has an enormous advantage here compared, not only to the technique of printing but to the production process too. The difference in terms of the trajectory of production from the time of writing over peer review to the time of publication is really remarkable when you think about it. I have had the experience of publishing in an open access journal once before and it was quite astonishing actually experiencing a production time of less than a month (as I am sure you are well aware it can easily take up to a year, and sometimes even more, in "regular" journals). When you tell friends or family members, not working in the academic world, about how slow the process is before you get something published in a peer reviewed journal they are often in disbelief. Still, when you have worked in academia for several years in the end you forget to notice how long it takes before anyone else can actually benefit from your work. However, for this reason exactly open access has something substantial to offer which would make the work of the average researcher feel much more rewarding I am sure – and in the end meaningful. Again, an analogy to human conversation can illuminate this point. Speed and timing is everything in conversations; a conversation needs timely and constant feedbacks from both interlocutors in order to continue and feel meaningful. If there are too long silences between any sort of reply or feedback the

conversation loses its energy and sense and will probably dissolve quite soon. In academia, due to both technical restrictions as well as social conventions, we have become accustomed to an extremely slow pace in the flow of ideas from the time of their design (in the writing) to the time of their publication – and hence the opportunity for feedback and critical reception. But what would happen to the development, the shape and heights of the conversation of ideas if the speed and timing could be adjusted to the pace of the modern IT-technologies? And what could it mean for the feeling of purpose and fulfilment for the researcher struggling to develop still new ideas? Obviously I am not talking about the actual work behind the publication here – the design, the analyses and the writing – these thinking processes need time and they need to be protected from any demand of high speed. It is the review and publication processes I'm addressing. I believe that we think anachronistically about the publication processes because we tie them to the era of print and therefore accept these processes to be extremely slow.

Format

Sometimes the right metaphor can make you see things in a new way. This, I believe, is the case with the image of "frozen moments" introduced by you in your first reply and since elaborated by both of us. It is a suitable metaphor because it captures the essence of why we need stable and recognizable formats while allowing for a level of abstraction making the idea of formats generalizable in a way which liberates us from solely focusing on specific formats such as "the article". Your analogies to coding and the work of computer programmers, and in particular the way you draw a line to model building, are truly interesting, almost mind blowing for someone brought up with firm notions of articles and books as the cornerstones of scientific work. It may still be hard to see it actually carried out in real life but I can definitely see the potential of new exciting ways of collaborating, developing ideas in communities, yes perhaps even dividing a line of argumentation up into different authors. In short, ways of thinking together; ways of embedding, not just the final result, but the processes of thinking, making arguments and interpreting, into a larger pool of ideas and inputs – and thereby "liquefying" the elements of the great conversation of knowledge as you accurately put it. In this way open access is not just about access, it is not just distribution and new techniques. It is just as much

about openness in terms of thinking processes; it is about developing new formats for the ways in which we think and develop knowledge.

Identification/accountability

This last point is of a more critical nature in relation to the possible pit-falls of open access. The arguments being made that we could benefit from changes within the first two points concerning time (a faster pace in the distribution of knowledge), and format (new open process-oriented formats) also raises serious concerns. At the same time though, I actually do believe that elements within the digital world might, at best, offer a solution. Not surprisingly the concern is about being able to identify the individuals behind specific ideas or contributions. Stable interlocutors as we called it above. If we stick to the traditional formats of articles and books we are on stable grounds in relation to identification and accountability. But what happens if these formats change and begin looking more like model building, as you suggest? Will it just be one big pool of ideas floating around without any specific authors whom we can quote, cherish or argue against? No one in particular is responsible and no one stands out. That sounds truly horrifying for an individualized culture like the Western one. However, there might be rather simple solutions to this made possible by digitalization. In fact, whenever we write something in any kind of digital document it is very easy to detect it and tie it to a specific author. I have been made aware of the ORCID initiative[10] as a way of solving this issue. When all authors carry a unique ID (an ORCID) it will be easy to track and trace who writes what in a digital context – no matter how "liquid" it is. It is very easy to get an ORCID, still I don't think it is very widespread. Another option is of course DOI (Digital Object Identifier) which already today is a widespread and useful tool for a unique identification of any given scientific article published in a journal, collected volume, anthology etc. Today it is solely used to identify the well-known format of articles but I don't see any reason why it not be expanded to include much smaller text formats which, coupled with ORCID, could provide small frozen "ice crystals" of scientific production.

So in conclusion, if we combine the time, format, and identification aspects I do think that we are beginning to have a strong argument for why a change to more open access oriented types of production and distribution

---

[10] http://orcid.org

clearly carry a number of benefits that can enable a substantial development and improvement for the great conversation of knowledge and science.

Third intervention by Jean-Claude Guédon

Once again, your intervention has helped clarify issues, and I thank you for this. This trans-Atlantic dialogue will remain as an eye-opener for me. Many thanks. And many thanks for the lovely compliments at the beginning of your last intervention, but, truly, I do not deserve them. Many of these ideas have been assembled across time, rather than being the product of my very imperfect brain. So call me a compiler at best.

In reading your latest contribution, I was tempted to call it "last" and add "amen" to it. Essentially, this is what I am trying to say here. However, I will add a little quibble, if only to spice up the argument a bit.

I really like your comments about the present pace of scholarly communication. If lovers ever had to follow such rites, they would never marry! But, more to the point, by the time one's work is published, noticed, and commented, one may well have moved on to problems so different as to make one indifferent to the earlier issue. In short, the train has fully left the station. How many intellectual opportunities have been wasted or delayed because of this is anyone's guess, but the result cannot be insignificant.

This said, the speed of communication that we both aspire to, I believe, is very fundamentally tied to formats, rather than to open access. Print, for a whole series of technical and economic reasons, favours bundling, but bundling means waiting until a certain amount of material is ready to show all of it at once. And bundling has also contributed to the visible presence, the identity, of a journal. But, if a journal is identified with a website, and if it benefits from a particular visual distinction, then both the website's address and the screen appearance of the journal will be enough to ensure a strong identity. Bundling can be abandoned and articles may be published as soon as the editorial process is finished. In fact, many journals, in the electronic format, do just that already, and many of these journals are not in open access.

Digitization is what speeds up the communication process, not open access which, in any case, is only a spin-off of digitization. Open access, as its name shows, *broadens access*. By increasing the number of people accessing various kinds of materials, open access should increase the probability of earlier responses, but this is a second-order effect, not a direct one, and it

is difficult to evaluate how intense this effect is. In short, I tend to believe that open access applied to journals will accelerate communication only marginally because the major bottlenecks will remain. One of these is simply the time that it takes to review a submitted article, given the pressure on time, and the fact that this is donated time for the common good of the scholarly community.

On the other hand, if scholarly communication began to behave more like coding, open access would become centrally important to the speed of the process. In particular, peer review, when applied to short contributions, could be performed in a matter of minutes, as the reviewer would not have to think in terms of setting a few hours aside to do the job properly. This would not solve the slowness of peer review for longer contributions, but at least, it would take care of a significant fraction of all new contributions. It might also make the task of finding new peer reviewers easier: reviewing a two-page contribution should be easier to accept than a 30-page article.

This said, I agree with your points about formats, and about identification/accountability issues. Let us transmute the "frozen moments" that were brought up earlier in the text into a slightly more material metaphor, that of "Crystals of knowledge". Crystals of knowledge should be an important part of how to frame the Great Conversation. Multi-carat crystals are quite acceptable, of course. In fact, defining the range of these "crystals" will be important, and it will require empirical testing. Which leads me to my last point.

What remains to be solved is the issue of the transition toward this kind of vision. And, of course, this is always the most difficult question. I remember a discussion with an Elsevier employee, about 20 years ago – yes! 20 years ago, if you can believe it – where he said that open access supporters might well be right in their vision, but the "energy barrier" to overcome in order to move from the familiar, traditional, stable, subscription state, to a stable open access state was probably so high as to make the transition highly improbable. In short, he was condemning all of us to contemplate the moon forever, and losing the hope of ever getting there.

To this dismal counter to the open access vision, I would like to oppose two points:

1. Twenty years after this conversation, even Elsevier is including open access in its commercial arsenal. This means that the open access "stable" state is no longer a mythical horizon, but this also means that

it may take a variety of forms, some of which may be highly problematic, not to say negative. In fact, at present, the debates about open access really concern the acceptable forms it can take. The so-called "hybrid journals" which combine subscription costs and articles processing charges, for example, are hotly debated at present. Beyond the accusation of "double-dipping" – i.e. the ability of publishers to generate revenues twice out of the same item – this new form of publishing portends a world in which open access and closed access would cohabit in a murky form of equilibrium largely determined by marketing strategies of journals. All of this lies very far from the true concerns of the Great Conversation.

2. It may be a surprise to discover that the very notion of "journal" may act as a form of blockage, but this is the case if the journal is taken as a proxy of the Great Conversation. The same would have been true, at the end of the Middle Ages, if scriptoria had been taken as a proxy of the copy-function.

If journals are construed as tools to create intellectual communities that share an evolving, yet relatively bounded, set of problems[11], then the way to avoid being tied down by the idea that the "journal" must be saved could take the following form: let us envision a platform – i.e. a website – with certain rules about accountability and identification which are actually close to those used in running a journal. Let us add further a starting set of problems that roughly correspond to the kinds of topics that the "journal" has been encompassing in the last few years of its existence (e.g. 5–7 years). In short, we have something that starts looking like an "electronic journal", to use this familiar, yet fuzzy, term. In fact, if an electronic journal is already functional, all is already in place to try moving beyond the journal as far as technology and processes are concerned.

At this point, through the use of "gentle" experiments with colleagues who are willing to act as "consenting victims" – this means scholars that are largely free of promotion concerns and have a sufficient reputation to be willing to "sacrifice" time normally devoted to article writing – trials can be conducted aiming at "liquefying" the communication process. Perhaps this means accepting much shorter notes (exactly as we two have done

---

[11] Looking at journals as dissemination tools for sets of problems is a position that institutional repositories should also explore. In fact, repositories could reorganize their holdings according to problems, if only to foreground the broad usefulness of the materials they hold. Problems, because they are smaller than disciplines or specialties, may also be part of the fluidization process affecting the communication processes of science.

together in the last few weeks, despite my own prolix proclivities); perhaps, the experiments can move to even smaller units of intervention, exactly as when we pick up typos or small mistakes in the text we are producing together. But this approach does not prevent longer pieces either, except that the accent is increasingly placed on the process rather than the product. Not that the quality of the product should be neglected at all: what "product" means here is not the product of intellectual work whose quality should remain as high as possible; it is the format – the article – that should no longer be taken as the sacrosanct form of validated intellectual work.

Finally, small, modest, active, creative experiments should ultimately help identify and dismiss the bad processes and retain the better ones.

3. But how to do this with the limited resources of a journal? This is where the role of funders can become important. Could they not be convinced to devote a relatively small amount of money to help a handful of journals carry on parallel experiments designed to reshape the Great Conversation around problems and around communities, with "liquefied" processes? My belief is that they can if the issues of attribution and accountability are fully met and if the anxieties about quality are fully addressed. They would do so even more willingly, I believe, if it meant much more reliable ways to evaluate the actual input of any individual involved in a given platform/community/problem set. They will also engage much more willingly if they are invited to become active participants, or at least close observers, of the experiments. And carrying parallel experiments with a handful of journals will certainly help identify and evaluate "best putative practices".

Finally, if it means better returns on the Krone, the funding agencies will be tickled pink.

In partial conclusion, I believe we are reaching here a "frozen point" of some value, when the "liquid" crystallizes into some lovely shape. I would be tempted to reiterate my offer to say "amen" to this "crystal of knowledge". However, I would rather not have the last word, and I will invite you to conclude. I know you have the right words to lead us to action and you know I will do all I can to help.

Closing remarks by the article editor

With the consent and even encouragement of Thomas Wiben Jensen I open up this invitation to include you – the reader – into the conversation. Please, do take part by commenting and thereby adding small "frozen moments" to the debate!

Where has the conversation left us so far? First of all I want to thank both Thomas Wiben Jensen and Jean-Claude Guédon warmly for this unexpected journey. We departed from a question about a specific journal's hesitant transition toward open access in the Danish context of a national open access strategy. Enlightened with a historical and epistemological account of the distribution of knowledge we arrived at another, deeper level. While acknowledging the present and historical importance of journals and articles as vehicles for the distribution of knowledge we witnessed the limitations of these kinds of "frozen moments" due to the lack of speed by which they are being produced and distributed, and, very importantly, also due to the nature of the article format itself.

Rather it was suggested to experiment with smaller units of intervention in an attempt to "liquefy" the scientific conversation (as has always been the ambition – the invention of the journal aimed at this, too) hence changing the focus from the product (the journal entity) to the process (the exchange of research results). If this is going to happen, it was argued, researchers with sufficient reputation to allow time for experimentation of this sort are needed as well as public funding. And perhaps, it could be argued, a common understanding and agreement that we should be looking ahead for new ways of communicating scientific results other than through the traditional channels like journals and articles is also needed. Digitization goes far beyond just electrifying journals!

We also need experimentation with new technical platforms to leverage new forms of crystalizing the scientific communication process. The good news is that experiments are taking place. However, the main focus rests on the journal entity when looking for answers for the future. It's a common mistake to look backwards when trying to answer tomorrow's questions. New questions don't fit well with old answers.

As part of the implementation of the Danish national strategy for open access the university libraries in Denmark will offer a joint national journal publishing platform based on the OJS software.[12] Perhaps this could be a stepping-stone in the direction indicated by Thomas Wiben Jensen and

---

[12] https://pkp.sfu.ca/ojs

Jean-Claude Guédon. That is, of course, if the direction is perceived as the right direction by the stakeholders in the research community. Views are warmly welcome.

REFERENCES

Archambault, E.; Amyot, D.; Deschamps, P.; Nicol, A.; Rebout, L. & Roberge, G. (2013) *Proportion of Open Access Peer-Reviewed Papers at the European and World Levels—2004-2011.* [Online] Available from http://www.science-metrix.com/pdf/SM_EC_OA_Availability_2004-2011.pdf Brussels: Science Metrics Inc.

Danish Agency for Science, Technology, and Innovation. (2014) *Denmark´s National Strategy for Open Access.* Copenhagen (http://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/open-science/open-access-to-research-publications/engelsk-version-national-strategy-for-open-access.pdf)

Foucault, M. (1969) "Qu'est-ce qu'un auteur", *Bulletin de la Société Française de Philosophie*, 63 (3). p.73-

Halbwachs, M. (1997) *La mémoire collective.* Nouv. éd. rev. et augm. Paris: A. Michel.

Rose, M. (1995) *Authors and Owners: The Invention of Copyright.* Cambridge, Mass.: Harvard University Press.

SPARC Europe. (2015) *The Open Access Citation Advantage Service.* [Online] Available from http://sparceurope.org/oaca/ [Accessed 16th October 2015]

ABOUT THE AUTHORS
Niels Stern http://orcid.org/0000-0001-6466-9748
Nordic Council of Ministers (Denmark)
(http://linkedin.com/in/nielsstern), who has edited this conversation, is head of publishing at the Nordic Council of Ministers which is the intergovernmental co-operation between the Nordic countries (www.norden.org). He also works as an expert for the European Commission.

Niels has more than ten years of experience working with e-publishing and research communication. He has played a key role in two international Open Access projects, one Nordic (Nordbib, 2007-2009) and one European (OAPEN, 2007-2010 oapen.org). Lately he has been the initiator and project manager of the NCM Open Access project finalized March 2014. Niels holds a Master of Arts in Nordic Literature (Univ. of Copenhagen) and a Master of Arts in Communications (Univ. of London).

Jean-Claude Guédon http://orcid.org/0000-0002-7342-8046
University of Montreal (Canada)
American Field Exchange Student 1960-61
Chemistry B. Sc. (with distinction) at Clarkson University (1966)
History of science Ph. D. at University of Wisconsin-Madison (1974)
Lecturer at York University - Glendon College, in Toronto, 1970-73
Professor at the Université de Montréal since 1973, first in "Histoire et sociopolitique des sciences" until 1988 and then in Comparative Literature (to the present). I became Full Professor in 1985.
One of the three winners of the Charle-Hélou "Francophonie" prize in 1996
Former vice-president of the Canadian Federation for the Humanities and Social Sciences (2006-9)
Trustee of the Nexa Center for Internet and Society, Politecnico of Turin since 2011
Member of the Advisory Board of Redalyc since 2014
Expert at the European Commission
Has lectured over 500 times on all continents
Has published three books and well over 100 articles

Thomas Wiben Jensen http://orcid.org/0000-0003-1428-4414
University of Southern Denmark (Denmark)
Thomas Wiben Jensen is Ph.D. and Associate Professor at the Department of Language and Communication at University of Southern Denmark (Slagelse Campus). Thomas' main research interests include the role of emotion, gesture and cognition in social interaction, the overlaps and differences between metaphor in writing and metaphoricity in spoken whole-body interaction, and an ecological approach to philosophy of science. In 2008 he finished his Ph.D. on cognition in interaction, in which he investigated memory and emotion as embodied interactive phenomena in video recordings of couple's therapy combining insights from Conversation Analysis (CA) with Cognitive Science and various types of emotion research. Since then Thomas has published two books (in Danish), one as co-editor (with Martin Skov) another as sole author. The former is a volume on the relationship between cognition and emotion and it's implication for the humanities based on recent neuro-scientific studies. The latter, Cognition and Construction, deals with the relationship between the paradigms of Cognitivism and Constructionism and thoroughly describes how the two paradigms have informed various discussions on mind, language, human behavior, gender, literature, the arts and so forth. In recent years Thomas' work has primarily been on distributed and enactive cognition, affordances and metaphoricity with reference to video recordings of social interaction in various organizational settings.

To contact the authors: Please create a reader account with the journal and use the e-mailing functionality of the journal site.