

The Open Access Interviews: Stevan Harnad

Stevan Harnad is a cognitive scientist based at the Université du Québec à Montréal. He is also one of the leading lights of the Open Access ([OA](#)) Movement, and a self-styled "[archivangelist](#)".

Harnad is often portrayed as a bully and a fanatic — a man so determined to get fellow researchers to make their papers freely available on the Web that he will brook no disagreement, responding to all contrary views and dissenting voices with such a relentless barrage of rebuttals and reproaches that his opponents are eventually forced to retreat.

But this is too simplistic a picture of the man. For Harnad, OA is not — as his critics claim — the obsession of a pedant with a one-dimensional view of the world, but the prelude to a fourth revolution in human cognition and communication. (The first three, he says, were language, writing, and print).

The goal of OA, Harnad says, is to unleash a potential long latent in mankind's unique language capacity, one that will allow us to exploit at last the full power of our collective intellect through "scholarly skywriting" — a form of communication, he contends, for which our brains were pre-adapted a hundred thousand years ago, but that has been awaiting the online era for its realisation.

However, before we can exploit the potential of this new form of communication, he says, we first need to make all research OA — an obvious next step that has been within our reach since the onset of the online era, but that we have still failed to take. And until we do, he says, we are denying ourselves access to our full potential.

If his OA advocacy is at times on the testy side, adds Harnad, this is not so much evidence of an intemperate nature as of a patience that has been sorely tried by the inordinate amount of time it is taking us to grasp what is already well within our reach.

What cannot be denied is that Harnad has exerted a very powerful influence on the development of the OA Movement. To a great extent he is the person who has articulated the main issues, and it is he who has — obsessively perhaps — kept people's minds focused, both on why OA is essential, and how we can best, and most rapidly, achieve it. Moreover, as Harnad is keen to point out, in addition to archivangelising for the last thirteen years, he has also created and commissioned many of the concrete practical tools now being used in our faltering steps toward OA.

To put Harnad's views on OA into the larger perspective we need to explore some of his many research interests. These range from the origins of language and the "symbol grounding problem", to categorisation and scientometrics. As a result, the interview below is on the long side. For those wishing to dip into particular sections, therefore, a Navigation Table is provided. Simply click on the title of the section you are interesting in, and hear what Harnad has to say.

Navigation Table

<i>The origins of language</i>	3
<i>Category sharing</i>	4
<i>Symbol grounding</i>	6
<i>From Open Peer Commentary to Scholarly Skywriting</i>	8
<i>The Subversive Proposal</i>	10
<i>The Green and Gold Roads to Open Access</i>	12
<i>Zeno's Paralysis</i>	15
<i>Mandate machinations</i>	19
<i>The ID/OA Waystation</i>	21
<i>Copyright Compulsions</i>	22
<i>PostGutenberg Politics?</i>	25
<i>Anarchiving?</i>	27
<i>Creative Disagreement</i>	30
<i>Past Polemics</i>	33
<i>Beyond Open Access</i>	36
<i>The Category Commons</i>	40
<i>Scientometrics and Semimetry</i>	43
<i>Information Liberation?</i>	45
<i>Wampum or whuffie?</i>	47
<i>Optimal, inevitable, and obvious</i>	50

From Glottogenesis to the Category Commons

Stevan Harnad speaks to Richard Poynder



Stevan Harnad

The origins of language

RP: Can you start by saying something about yourself, and your career to date?

SH: I was born in Hungary, just as WWII ended. My parents emigrated to Canada (Montreal). I studied music in the Quebec provincial conservatory and psychology (under D.O. [Hebb](#)) at [McGill](#) University. Then I went to [Princeton](#) for my PhD.

RP: Where you specialised in cognitive science?

SH: No, there was no cognitive science way back then! My first research area was on [left/right differences](#) in the brain (language and perception being the main difference). Then it grew into the question of the [evolutionary origins](#) of language ("glottogenesis"), the perception of [categories](#), the [grounding of symbols and word meaning](#) in direct experience, and, lately, [scientometrics](#) and [semiometry](#) (i.e., measuring the trajectory, impact and "meaning" of scientific and scholarly research).

The category "cognitive science" was invented somewhat later (around the time of the 1982 University of Rochester [Conference on Cognitive Curricula](#)).

RP: You are currently affiliated with both Southampton University in the UK and the University of Quebec at Montreal. How does that work?

SH: I hold a Canada Research Chair in Cognitive Sciences at the Université du Québec à Montréal. I am open-endedly seconded from Southampton, but I continue very close collaboration with my colleagues there.

RP: As I understand it, your main area of research today is on what you call the origin and adaptive value of language. What does that mean?

SH: We are the only species that has language. (Don't believe anyone who tells you there's a "language" of bees, or birds, or dolphins, or chimps! Those species are all smart, each in its

own way, especially the mammals, and they all do communicate; but they definitely do not have language.) I am asking why our species has language. What has having language done for us, in our struggle to survive and reproduce?

RP: *How does one define language then?*

SH: Language is a means of saying [anything and everything](#) (and without that, you can't say anything at all). We're the only ones that can do that. (Otherwise we would be discussing language-origins with the chimps.) The question is about how and why we are able to speak, and how we evolved that capacity ("glottogony").

RP: *So how and why did we evolve language?*

SH: I should start by saying that for over a century, theories of the origin of language were banned as hopelessly speculative (beginning with the edict of the Société de linguistique de Paris in [1866](#)).

In [1975](#), however, inspired by a wealth of recent developments in many different fields, my fellow graduate student [Horst D. Steklis](#) and I helped re-open the topic with a historic 3-day conference at the [New York Academy of Sciences](#). Since then, language-origins has become a booming research area, with annual conferences, journals, and learned societies all its own.

RP: *Developing a theory of the origins of language was not entirely hopeless then?*

SH: Well, the question still remains a speculative one (much like the question of the origin of the universe and the origin of life), since glottogenesis was a one-time, non-repeatable series of events that took place at least one hundred thousand years ago, probably only once — and left the brains, thinking and behaviour of our species permanently and radically altered.

RP: *What specifically changed to allow the origins of language to become a legitimate area of research?*

SH: Many rich developments in linguistics, brain science, psychology, anthropology, zoology and computer science. Today we can even try to *simulate* language origins by computer. [Angelo Cangelosi](#) and I, for instance, have done some artificial-life [simulations](#) to test what the evolutionary advantage of language might have been.

Category sharing

RP: *What have you discovered?*

SH: We found that language gave our species a revolutionary new way to *acquire categories* — and categories are the stuff of adaptive life: To categorise is to do the right thing (approach, avoid, grasp, gather, eat, groom, court, rear, attack, flee) with the right *kind* of thing. That means that most of what we do to survive and reproduce is categorising: most of [cognition is categorisation](#).

RP: *Is a category a concept or what? How do we define it?*

SH: Actually, I've just defined it! A category is a *kind* of thing with which one can do some things and not other things. A category is a kind. There is a potential infinity of them, but our actual categories are the ones we actually pick out and differentiate, if only by calling them one thing rather than another. The potential ones we don't, or not yet.

Examples always help when one is defining any new category, including "category": A chair is a kind of thing you can sit on, a ceiling or lake or pin are not. A morel is an edible kind of mushroom, an amanita is not. Infraviolet light is "visible," ultraviolet light is not. " $2+2=4$ " is "true," " $2+2=3$ " is not.

I've now defined "category." Now *you* define "concept"! I have no idea what it means, though people use the word all the time. It seems to mean roughly the same as an "idea," but I have no idea what an idea is either, except "anything that comes to mind." We are waiting for cognitive science to tell us what concepts and ideas are. My guess is that they will turn out to be what it *feels like* to be able to categorise something! But what I want to know is the mechanism underlying that ability, rather than just what it feels like to be able to do it.

RP: *Do other species have categories?*

SH: Yes they do. They too do the right thing with certain kinds of thing.

RP: *So where do categories come from?*

SH: To find out where *potential* categories come from, you have to ask cosmologists and biologists. Cognitive science can only tell you how we "get" our actual categories, and the answer is: Some are inborn, such as the frog flicking its tongue at a certain kind of moving thing, the baby nursing at the teat, and the duckling following the first moving object. But most categories are acquired rather than inborn.

RP: *Do other species not acquire categories too?*

SH: Yes, but species other than our own can only acquire categories the hard way, through risky, time-consuming trial-and-error experience. We can do that too, but ours is the only species that can *also* acquire categories by "hearsay": For example, you can combine the *names* of categories that I already have into a string of names that defines or describes a category that is *new* (for me) but that you (or someone else you heard it from) have already acquired from direct experience, whereas I have not. That way you share your categories with me.

That's what all these sentences are doing: giving you new categories, and thereby sparing you a lot of time-consuming and sometimes even dangerous learning from direct experience. That's also what instructions, lectures, tutorials, articles, textbooks, monographs, dictionaries and encyclopaedias do.

RP: *So there's already a connection here with the scientific and scholarly literature and OA?*

SH: Yes. Acquiring categories by hearsay is also the beginning of [science](#) and scholarship, which is just the systematic collection of categories to transmit, preserve, use, share, and build upon — collectively, cumulatively, and self-correctively.

RP: *This collective process assumes peer review I guess: Sharing your categories and commenting on those reported by others?*

SH: Yes, we need the help of peers not only to collect categories, but to vet them too: Errors and omissions are detected and corrected, publicly. That's the basis of the formal quality-control process of [peer review](#) as well as the informal, [interactive](#), dialectical and above all [creative](#) process of [peer commentary](#).

RP: *The OA connection is implied in the word "publicly" is it?*

SH: Yes, because it entails sharing and interaction. The most remarkable thing about language is undoubtedly its limitless expressive power: the fact that it can indeed say anything and everything. But the second most remarkable thing is that that power comes from *sharing* categories, rather than from hoarding them, as we do with other precious resources. That is the link between language origins and [Open Access](#).

RP: *And people don't charge a subscription for their categories when they share language!*

SH: Exactly, language implies OA!

Symbol grounding

RP: *You mentioned earlier that you had an interest in the grounding of symbols and word meaning. As I understand it, your main contribution to the subject was in articulating what you call the "Symbol Grounding Problem." Where does that fit here?*

SH: Words (symbols) are the names of categories; if you don't know the meaning of a word, you can look it up in a dictionary, thereby acquiring that category (if you do not have it already, in which case the definition merely teaches you its name).

But if you don't know any of the words in the (unilingual) dictionary, because you don't know that language, then the [definition look-up](#) can just lead you from one meaningless symbol to another, never arriving at meaning. That is the [symbol grounding problem](#).

RP: *So what? Presumably we don't consult unilingual dictionaries in languages we don't know: we consult bilingual dictionaries! What's so important about the symbol grounding problem?*

SH: Its importance is in cognitive science's basic task of explaining what *cognition* (thought) is.

We know from [Turing](#) that computation is symbol manipulation. Computation, like language, is all-powerful. We can compute [just about](#) anything. (Indeed, the power of computation is a part of language's expressive power.)

RP: *But thought is not just computation?*

SH: That happens to be a very controversial question! And in fact the prevailing theory in cognitive science today ("[computationalism](#)") is that cognition itself *is* just computation. But I happen to be a critic of that theory. Symbols have no meaning in and of themselves; they are very much like the words in the (unilingual) dictionary.

RP: *But we do use dictionaries, and we do manipulate symbols, don't we?*

SH: We use dictionaries, and symbols, externally, as tools, yes. But cognition is something that is going on *inside our heads*.

The meaning of the symbols on this page is not in this page but in the heads of the cognizers who see or hear (and understand) the words. Cognition is whatever it is that is going on in cognizers' heads that gives those symbols meaning.

Therefore, on pain of [infinite regress](#), whatever it is that is going on in the cognizers' heads cannot itself consist of just more symbols and symbol manipulations, any more than the meaning of the words in a dictionary can consist of just more words and definitions. There has to be something else too. Hence cognition cannot be just computation.

RP: *So what is that "something else"?*

SH: It's direct [sensorimotor](#) experience, connecting the symbols in our heads to the things that they are about, by detecting the features that distinguish the members of that category from the non-members — exactly as the 18th British Empiricists said it had to be, except that they never had to worry about *how* it is that our brains actually make the connection, nor about how or why evolution gave our brains that power.

RP: *Because they didn't have access to computers or cognitive scientists?*

SH: They didn't have access to computers, and they weren't much interested in explaining brain capacity, hence they could not do much cognitive science. Cognitive science is really [reverse engineering](#): figuring out what are the underlying mechanisms that give our brains (and systems like them) the capacity to do what we can do, by modelling those capacities. There are already a few computational models for the underlying mechanism of the sensorimotor learning of categories (although none of them yet has capacity that is anywhere near human-scale).

RP: *The task, then, is not so much to model the way we compute symbols, but how we map those symbols to the world outside us?*

SH: The notion of "mapping" (association) covers a multitude of sins (of omission):

Symbols are mostly the names of categories. Our artificial-life simulations used a simple category learning model to show that for a system to be able to go on to acquire new categories through symbolic hearsay, some of its categories first have to have been *grounded* non-symbolically, through *trial-and-error sensorimotor experience*. Only then can the *names*

of those grounded categories go on to be combined and recombined into definitions, descriptions and explanations of further categories.

So, the progression is from acquiring categories through direct sensorimotor experience to acquiring categories through language; doing that systematically is science and scholarship, which probably began with the oral tradition, but came into its own with writing, then print, then the web, and now, Open Access.

From Open Peer Commentary to Scholarly Skywriting



RP: *Ok, so it's a straight line from the origins of language to OA! One of the things you did at Princeton was to found an innovative peer-reviewed journal. Was that the point at which you saw the need for Open Access? (I realise this was a long time before the term Open Access came into being)?*

SH: My interest in Open Access derived very directly from my prior interest and involvement in [Open Peer Commentary](#). In 1978 I founded a journal of Open Peer Commentary called *Behavioral and Brain Sciences* ([BBS](#)). BBS was modelled on an earlier Open Peer Commentary journal, [Current Anthropology](#), and it quickly became a very influential and [high-impact](#) journal across the fields it covered.

RP: *What was different about BBS?*

SH: A traditional journal first conducts peer review, and then publishes articles that successfully meet the journal's peer-review standards. [BBS](#) (and [Current Anthropology](#), on which BBS was modelled) first circulates (accepted, peer-reviewed) articles to about 100 researchers, across specialities and around the world, inviting them to submit a 1,000-word commentary that critiques or complements the "target article." The author then responds to the commentaries (12-20 or more) and it is all co-published in the journal.

RP: *Ok so [Open Peer Commentary](#) implies soliciting commentary on a peer-reviewed article from specialists across disciplines, and then co-publishing those comments with the author's response. It doesn't imply OA though does it?*

SH: Not directly. Besides, OA is impossible in the paper medium. It soon became apparent to me, however, that many more articles than just the couple of dozen BBS could afford to treat per year could have benefited from Open Peer Commentary — and that the entire field could benefit more too. I also never felt that paper, and mailing preprints of the target article around the world, was the [optimal](#) medium for implementing Open Peer Commentary.

RP: *So Open Peer Commentary was an idea in search of a better distribution method?*

SH: In a sense, yes, and a faster and more interactive one. So, when the online medium became available in the 1980s, BBS started to use it for inviting referees, for circulating "Calls for Commentators" to the BBS [Associateship](#) (and eventually the entire Web), and for [providing access](#) to the target articles for the potential commentators.

As editor of BBS, however, I was the only one on the planet not allowed to do commentaries! There was one article in particular, by the philosopher [John Searle](#), published in 1980, that I had always wished I could comment on.

RP: *There was a need for a more open forum for reviewing papers then — one in which even editors could participate!*

SH: Not for reviewing; for [commentary](#): In the mid 1980's, however, in [comp.ai](#) on [Usenet](#), the first big online discussion medium (still alive today in Google Groups), I finally got my chance to [comment on](#) the Searle article. In fact, it was that online discussion that gave me the idea for what eventually proved to be my most influential paper ("[The Symbol Grounding Problem](#)").

RP: *So Usenet was a good sandbox for your ideas. Indeed in being able to join in the discussion, and swap and share categories, you were able to make an important contribution to cognitive science. I'm conscious, however, that [elsewhere](#), you have complained about the distractions and noise associated with jousting with the groundlings on Usenet. You described your initiation into Usenet as a baptism of fire.*

SH: I can still feel the heat. It was in another Usenet discussion group, [sci.lang](#), that I discovered what it is to be "[flamed](#)" — publicly, and scatologically. That proved as rude a shock — quite the opposite of genteel BBS Open Peer Commentary — as the Searle discussion on [comp.ai](#) proved an exhilarating revelation.

RP: *It was as a result of your experiences on Usenet that you also developed your ideas about skywriting. As I understand it, skywriting refers to the various ways in which people can exchange ideas on the Internet — e-mails, newsgroups, electronic mailing lists etc. The image is one of texts being written in the "sky" (via multiple emails and a web archive) for all to see ("skyreading"), and to which all can add their own comments. This is done by means of what you call [quote/commentary](#), where passages of text are [cut and pasted](#) and comments focussed specifically on the excerpted passage are written underneath those excerpted passages — the way most people instinctively reply to e-mail messages, in fact.*

SH: That's about the size of it, yes. As therapy for the shock I experienced on Usenet I first wrote an op-ed piece called "[Sky-Writing](#)" in about 1987 (which was never accepted for publication).

I then published the Symbol Grounding Problem in 1990. And that same year, inspired by the obvious (but revolutionary) potential of the new medium, I wrote, and published, [Scholarly Skywriting and the Prepublication Continuum of Scientific Inquiry](#), followed the next year by [PostGutenberg Galaxy](#).

RP: *So the nature of the new medium adds something new to the process in which people are able to arrive at new insights through joint discussion. But there was an inherent dilemma here for you I guess: while swapping categories on the Web can lead to valuable insights, it also means having to negotiate a lot of pointless noise and even personal abuse?*

SH: Yes. And although I did not note it therein, the Scholarly Skywriting idea had also been provoked by an unsuccessful attempt to persuade [Noam Chomsky](#) — with whom I had had a long and very interesting offline discussion about the Searle target article — to allow me to post our exchange online. He declined, on the grounds that Usenet's [demography](#) was not suitable for such discussion and that it would probably just generate a lot of flaming and spam.

RP: *What did you conclude from all this?*

SH: That Chomsky was right (as he is on so many other things). Usenet was not suitable for Open Peer Commentary; it was mostly just unfiltered chatter among students, hackers, and other dilettantes: a "[Global Graffiti Board for Trivial Pursuit](#)."

So that was part of the reason I wrote Scholarly Skywriting: To try to persuade serious scholars and scientists to put their prepublications and publications online, thereby creating a demography and a corpus that *would* be worthy of contributions from thinkers of the stature of Chomsky.

The Subversive Proposal

RP: *With that end in mind, in 1994 you posted your "[Subversive Proposal](#)" — exhorting all researchers to self-archive their articles online, thereby making them free for all to access.*

SH: Yup, and I assumed it would then all happen, virtually overnight....

RP: *We'll come back to that I'm sure. I'm conscious that the term Open Access was not actually coined until the [Budapest Open Access Initiative](#) in 2000, so your activism began some time before there was an OA Movement. What was your actual entry point into the Movement?*

SH: Let me confess quite frankly that at the time I wrote Scholarly Skywriting in 1990 I was only thinking of trying to get everything online. I was not yet awakened to the idea of making it all freely accessible (although in 1989 I had also founded an online-only counterpart of BBS — a peer-reviewed Open Peer Commentary journal called [Psycholoquy](#) — which was free, hence also one of the very first of what we now call "[Open Access Journals](#)").

The focus on free access itself, however, came later.

RP: *How?*

SH: Paradoxically, it was under the influence of [Ann Okerson](#), who in the early 1990's first argued that journal articles should all be not only online but free. At the time, I had thought she was balmy!

RP: Ann Okerson is the [Yale University](#) librarian who, in 1995, edited and published a book based on the [Subversive Proposal](#).

SH: Yes, Ann (with [Jim O'Donnell](#), founder of another of the very early OA journals, the [Bryn Mawr Classical Review](#)) edited that book, which consisted entirely of Open Peer Commentary. Soon after she had won me over to her balmy cause, however, she went and defected to licensing instead. Go figure!

RP: Ann told me she has no recollection of ever having called for free access. In 1989, she says, she wrote a [report](#) for Association of Research Libraries ([ARL](#)) pointing out that the journals of for-profit publishers were priced much higher (for [STM](#) journals) than those of not-for-profits. What she recommended was not free access, but that ARL membership pursue strategies to support publications that were of high quality but lower priced. She added that since 1991 she has also been urging that authors of articles retain copyright and license the necessary rights to publishers.

SH: One of the fascinating puzzles of [consciousness](#) (an insight which we also owe to the British Empiricists, as well as to [Descartes' Cogito](#)) is the fact that (apart from the eternal Platonic truths of mathematics and logic) we cannot be certain about anything except that we are [feeling](#) something right *now* (if/when we are), and that what that something feels like, now, is *this*.

Ann now has the feeling of never having been in favour of free access before she began advocating licensing; I now have the feeling that I got the idea of free access from her.

RP: What you say suggests that writing a history of OA would be a little challenging! How do we establish the truth in such circumstances?

SH: An extant, objective document (or audio or video), if there were one (but there isn't), could settle the matter — and in a law court it probably would.

But the second puzzle of consciousness is that even where there is documentary evidence — the string of symbols — to the effect that I said X, I can always say (truly) that your interpretation of X is not what I meant (or not what it feels *now* as if I meant *then*). That's yet another manifestation of the difference between symbols and meaning...

RP: And [Jean-Paul Sartre](#) maintained that we all constantly re-write our own history to fit present contingencies. Do you re-write your history?

SH: I'm sure I do, both consciously and unconsciously. Inasmuch as my only record is what I remember (i.e., how the episode feels, right now, as having been, back then), I no doubt misremember a good deal.

And, according to [Bartlett](#), even [veridical](#) remembering is reconstruction rather than re-experiencing; and in reconstructing, we try to rationalise and make sense of it all.

Of course, a written record (or tape or video, or even hearsay from other witnesses) can help sort objective facts out: who did/said what, when. (And skywriting our thoughts will certainly

put more of them into the the public record than ever before!) But intentions and interpretations are felt, and feelings don't leave an external trace, any more than the advent of oral language did...

That said, if Ann says she was never for free access, that's fine with me. If I didn't get it from her, I got it from someone else. What is undeniable is that at first I was focussed exclusively on *online* access and had not yet twigged on the need for *free* access. Certainly there is no trace of free access in Scholarly Skywriting 1990...

The Green and Gold Roads to Open Access



RP: *What is also not in doubt (I hope) is that Ann Okerson now runs the [Liblicense](#) mailing list, and you run The American Scientist Open Access Forum ([AmSci](#)). In terms of OA discussion groups, these two lists are competitive are they not, and offer different views of OA?*

SH: If we agree that the underlying problem that both lists are trying to address is *access to research*, then they represent complementary ways to make research more accessible: Institutional subscription licensing (which Ann advocates) allows institutions to get more online journal articles for their subscription dollars (and author publication licensing allows those authors who succeed in persuading their publishers to let them retain more rights, to retain more rights).

OA self-archiving, by contrast, makes *all* journal articles freely accessible to *all* users, worldwide, and not only to those whose institutions can afford licensed access (as now), nor only for those articles for which the author has managed to successfully negotiate the right rights in his publishing contract.

The difference is based on whether one sees the underlying problem as (1) a problem of journal affordability, pricing, and rights, largely in the hands of the publishing community, or (2) a problem of research accessibility, usage and impact, largely in the hands of the research community.

RP: *So you and Ann took different paths. The difference in your two approaches revolved around whether we should seek to reduce access costs (by controlling subscription charges), or rather aim to remove access costs all together.*

SH: That's right: I took the latter path (accessibility) and Ann took the former one (affordability). But even on the former path, Ann actually stopped well short of where it eventually led.

RP: *How do you mean?*

SH: Because the problem of journal affordability and pricing (1) eventually turned into the "[Golden Road](#)" to Open Access, namely, OA Journals that provide online access for free (to the user).

RP: *And they generally do this by shifting the costs: imposing a one-off "article processing charge"(APC) for publishing a paper, rather than charging a subscription to read the journal the paper is published in. Consequently, there are no access charges.*

SH: That's right. Meanwhile the problem of research accessibility and [impact](#) (2) turned into the "[Green Road](#)" to OA, namely, OA self-archiving.

RP: *And this calls on researchers to continue publishing in traditional subscription-based journals but to self-archive the paper on the Web as well. In this way even those without a subscription to the journal can read the paper. Like Ann, however, you too have adapted your views over time haven't you?*

SH: I certainly have. In 1994 I [originally](#) advocated both roads, [naively](#), and continued to do so, with the founding of (what later came to be called) the [American Scientist Open Access Forum](#) in 1998. The [Budapest Open Access Initiative](#) also officially advocated both roads in 2002.

But with time passing and OA still not happening, I realised that Gold OA was far too slow and uncertain, because it depended on waiting for publishers to convert (and finding the money to pay them), whereas Green OA could reach 100% OA, entirely at the hands of researchers themselves (at no extra cost), virtually overnight.

I am still waiting, however, for that magic night! Here we are, in 2007, yet 85% of those "give-away" authors still have not got round to giving their eprints away. The only real barrier between us and 100% OA is [keystrokes](#), yet most of those keystrokes are still not being performed.

RP: *Let's continue to hold that thought for now. I'm conscious that there have been many disagreements about the definition of OA (and they re-surface regularly!). In fact, I sometimes suspect there are as many definitions of OA as there are people who advocate it. What is your definition?*

SH: Open Access just means *free online access* to scholarly and scientific research articles. But let me draw an important distinction here: What makes OA possible is not just the online medium — otherwise *all digital content* could and would be OA. OA is only possible for digital content that its author [wants](#) to make freely accessible online.

That [excludes](#) most [books](#), music, videos, and [software](#) today — anything the author wants to sell for revenue, rather than to give away.

I am of course also in favour of free and open source software, free and open multimedia, and what [Peter Suber](#) used to call "FOS" ([Free Online Scholarship](#)). But what I or Peter or [Richard Stallman](#) or [Larry Lessig](#) happen to favour is of little consequence if its *creators* don't favour it too!

RP: *So in your view OA relates to a very specific type of content?*

SH: In the first instance, yes. That is what is so different about OA: OA's very specific target content is the c. 2.5 million research articles that are published annually in the world's c. [25,000](#) peer-reviewed journals, across all disciplines and all languages.

Without a single exception, every one of those articles is and always has been an [author give-away](#), written purely for the sake of maximal "research [impact](#)" — that is, for the sake of being used, applied and built upon by as many other researchers as possible, so as to contribute to the cumulative growth of science and scholarship.

Not a single one of those articles was ever written for fees or royalty revenue. On the contrary, scholars' and scientists' careers and income depend on the uptake, importance and impact of their work; hence any access-barrier to their work is also an impact-barrier for their work, and for its just rewards.

RP: *Essentially, you are saying that OA is only relevant to peer-reviewed journal articles?*

SH: To begin with, yes (and refereed conference papers too). Other scholarly and scientific writing can no doubt also benefit from OA. And much more will, with time, also be accorded OA.

But for now, the specific target of the OA Movement has to be that exception-free body of writing, always written solely for impact, never for income, that had always sought to be OA but, because of the real costs of generating and distributing print on paper, could not actually be made OA — until the online era.

OA's only precursor in the paper era, already foreshadowing OA, had been the (limited and inefficient) method — inspired largely by Gene [Garfield](#) and [Current Contents](#) — of writing to the author to request a (paper) reprint. Now, in the online era, all those give-away authors can give away their [eprints](#) limitlessly, to all would-be users, worldwide.

RP: *Why is the giveaway/nongiveaway distinction you are making important?*

SH: Because if OA had adopted a scattershot approach from the outset, aimed at "freeing" all digital content (or all "knowledge" or all "creative work"), whether or not all or most of it *wanted* to be free — in other words, if OA had blurred rather than limned the deep distinction between the one exception-free domain that had always wanted to be OA and all the other domains in which it is the exceptions that predominate — then the target would simply have gone out of focus and OA would have slipped from our reach.

First things first.

RP: *First things first, fine. But I'm struck by the fact that the online era began around twenty five years ago, and yet as you have several times pointed out, very few of these "giveaway" authors are doing what you feel they should.*

SH: You're so right (and you really know how to hurt a guy!). And that is the biggest [paradox](#) in all of this — the most frustrating and at the same time the most fascinating thing about "archivangelizing," which I have been doing now for well over a decade.

Zeno's Paralysis

RP: *Paradox in what sense?*

SH: It is paradoxical that the very population for which the benefits of OA are the biggest and most direct — the research community, those very ones who give away their writings rather than selling them, and whose salaries and research funding and prizes and legacy depend on the uptake and impact of their writings (and who have even professed to be ready to [boycott](#) their publishers to demand OA) — have been the most sluggish and obtuse about actually doing the [few keystrokes](#) that are all it takes to *provide* OA.

RP: *So researchers just don't seem to get it. What's the problem with your colleagues?*

SH: There are at least [34 problems](#) at last count, all of them easily (and trivially) solved (or dissolved). I have been maintaining and updating a [FAQ](#) debunking these pseudoproblems since the late 1990's. I've even given the syndrome a name or two: "[Zeno's Paralysis](#)" and the "[Keystroke Koan](#)"

RP: *I get the feeling that the biggest problem OA faces today is not that people don't see its logic and inevitability, but that no one can agree on how to achieve it. The main disagreement centres on the respective merits of the Green and Gold Roads that you mentioned. Both roads lead to OA, but by a different means. What's the fundamental disagreement here, and how can it be resolved?*

SH: Nothing about OA is either profound or complex. This is not rocket science. In fact I've dubbed it "[raincoat science](#)," in that the message — "*It's the online era, researchers, and your research impact is being needlessly lost: Time to make your articles OA by self-archiving them!*" — is as trivial and transparent as "*It's raining, kids, and you're getting wet: Time to put on your raincoats!*"

That is the Green Road to OA. The Gold Road is to sit in the rain, and just keep waiting passively for climate change while ranting at the clouds (and occasionally paying someone to hold an umbrella over your head, if there's anyone willing to do it, and you have the spare change).

RP: *You say there is nothing profound or complex about achieving OA. But given all the disagreement and delay surely it cannot be such a simple matter in most people's minds?*

SH: The disagreement and delay is undeniable. Part of the reason for it is, as I noted earlier, a [conflation](#) between the journal affordability/pricing problem and the research accessibility/impact problem (but a conflation arising from carelessness, not complexity).

There is a connection between the two, of course: If journals were free for all users (Gold OA), there would be no accessibility problem. But journals are not free. Nor can they be made free by the research community: That is in the hands of the publishing community.

Making their own published research freely accessible to all users (Green OA), however, *is* entirely within the hands of the research community. (As I said, ironically, the most likely thing to [lead](#) to Gold OA, if anything ever will, is eventual cancellation pressure generated by Green OA itself.)

So the "fundamental disagreement" you referred to is about the purpose of OA and how to achieve it: Those who think the purpose of OA is to maximise research usage and impact, now, favour the Green road; those who think the purpose of OA is to reform publishing and/or to save money, eventually, favour the Golden road (though, with a little reflection, even *they* ought instead to be favouring the Green road now too!).

RP: *What's wrong with supporting both the Green and the Gold Roads?*

SH: Nothing; they are complementary (like seat-belt laws and more impact-resistant cars, or smoking bans and tobacco industry reform). Gold OA has demonstrated that there are viable alternatives to non-OA publishing. Hence when publishers try to lobby against Green OA [mandates](#) by claiming that mandating Green OA would lead to [Doomsday](#) for journals and peer review, the research community can calmly [reply](#), no, if Green OA mandates led anywhere at all — over and above 100% OA, of course! — they would just [lead to Gold OA](#).

The disagreement is about *immediate priorities and probabilities*. Gold OA depends on the publishing community: on whether/when they decide to convert to OA and how much they decide to charge for it. Green OA depends only on the research community. Researchers are the ones by and for whom the research is conducted, written up and published; and they are also the ones by and for whom OA is provided, either way (Gold or Green).

RP: *As we've agreed, however, Green is a long time coming. While waiting for Green, have you given up on Gold altogether?*

SH: I don't think I can quite be described as waiting passively for Green! (Others, though, are [waiting passively for Gold](#)).

But to answer your question: I have since about 2003 distanced myself (for the time being) from Gold, because it became apparent that Gold fever was actually getting in the way of Green action (for the [time being](#)).

RP: *How?*

SH: For various reasons (but mostly the failure to think it through), as the notion of OA itself spread, many OA enthusiasts (and many of the growing number of pious [statements](#) and [declarations](#) and [demands](#) for OA) took the lop-sided and simplistic view that *only Gold OA was OA*, and hence that Green was somehow either a [lesser form](#) of OA or [not OA at all](#).

Nothing could have been further from the truth. Green OA is not only full-blooded OA, but a far faster and surer way to reach 100% OA than Gold OA, because it is already fully within the reach of the research community, rather than dependent on publishers changing their ways. Hence Green OA must come first.

RP: *You've always said that OA is "["optimal and inevitable."](#) If that's right, then it is only a matter of time before we reach 100% OA.*

SH: Sure, and the heat death of the universe is also just a matter of time (and inevitable, though perhaps not optimal)!

RP: *So this is essentially an issue of timing in your view?*

SH: Yes. The difference between the Green and Gold roads is that Green is immediately available, fast, and certain to reach 100% OA, because it depends only on the research community — the providers and the beneficiaries of OA content.

Gold is only [10%](#) available, slow, sometimes [costly](#), and far from certain ever to reach 100% OA, because, as I've said, it depends on the publishing community, whose current revenue-streams (and hence their interests) are in direct conflict with OA.

RP: *In other words, publishers could convert to Gold by simply deciding to charge to publish papers, rather than charging to read them. Since this would reduce their profits, therefore, they are very reluctant to do so.*

SH: Right, but the most important point is that because Green OA is entirely within the hands of the research community, it can be accelerated, and its attainment can be ensured, immediately, by mandating it. For Gold OA, all the research community can do is badger and threaten boycotts, and just [keep waiting](#), needlessly.

RP: *So the take home point is that the Green Road will provide OA far more quickly?*

SH: Yes, more quickly, and more surely — since it depends only on the research community to do it, and it can be mandated. Among the 34 causes of the [Zeno's Paralysis](#) that is holding up spontaneous Green self-archiving is the syndrome of "[Waiting for Gold](#)" (umbrellas).

On evidence and reason alone, those who think Gold OA is the *only* road to OA, or the *fastest*, or the *surest*, are simply mistaken. The fastest and surest road by far is Green OA, especially once it is mandated. Hence our priority today should be mandating Green OA.

Mandates are not necessary if we are content to create Institutional OA Repositories, encourage deposit, and then sit passively, hoping they will fill up, without looking too closely at what is being deposited, or how much of it is OA's target content, or how soon that content is likely to reach 100% OA unmandated, or how much cumulative impact we keep losing (and how wet we get) while we keep dallying.

RP: *Why is achieving 100% OA so urgent?*

SH: Part of the urgency is the continuing, needless, cumulative daily, weekly, yearly [loss](#) of research usage and impact, productivity and progress because of access denial.

But there's also what is waiting for us on the other side of the OA rainbow: Scholarly Skywriting, collaborative cognition at the speed of thought, Open Peer Commentary, and the dramatically accelerated growth of the "Category Commons".

RP: *So the second take home point is that the solution lies in the hands of the research community itself, not in the hands of publishers?*

SH: Indeed. (I think I've just got done parroting it at least 6 times in our interview so far!) Green OA is within immediate reach. The only thing researchers need to do is self-archive their articles; failing that, the only thing their institutions and funders need to do is to mandate that their researchers must self-archive their articles (just as they already mandate that they must publish them — or perish).

To keep fussing about Gold OA instead of mandating Green OA is just to throw more good time after bad. (Working for Gold OA after Green OA is mandated, however, is another story, and I'd be all for it.)

RP: *But as we agreed, researchers won't do it of their own accord. So you believe they must be induced to self-archive?*

SH: Yes, and that conclusion, as they say, was "data-driven": It became clear, once a half dozen fallow years had followed the Subversive Proposal to little effect, that evidence and reason alone were not going to be enough to rouse the research community from its inertial stupor.

RP: *What data are you referring to?*

SH: First, the failure to self-archive. Subsequently, researchers themselves, in several international, interdisciplinary [surveys](#) conducted by [Alma Swan](#), reported that the only way to get them to stop sitting on their hands and start doing those few [keystrokes](#) that stand between all of us and 100% OA was for their institutions and funders to [mandate](#) the keystrokes, by mandating Green OA self-archiving (just as they already mandate publishing — or perishing).

RP: *Researchers have said that they would self-archive if their employers required it?*

SH: They did indeed. And that might — just might — be what the [research community](#) is getting round to doing now, at long last.

Mandate machinations



RP: *Ok, let's review where we are: You say that the best way to achieve OA is for researchers to carry on publishing in traditional subscription-based journals and to self-archive their papers on the Web. Since they won't self-archive voluntarily they should be mandated to do so.*

SH: Right.

RP: *Others, however, argue that mandates are not only not necessary, but unenforceable. Might they be right? I am conscious, for instance, that the Netherlands has, to date, been more successful than any other country in the world in encouraging researchers to self-archive their papers, and it has done so not by means of mandates but by incentivising researchers to self-archive — through initiatives like [Cream of Science](#). When I spoke to the manager of the Dutch [SURFshare](#) Leo Waaijers he said, "The fact is, our universities are just not interested in a green mandate. Mandates cause resistance and they do not solve the problem."*

SH: I am in the process of writing a commentary on some of the points that Leo Waaijers made in his interview with you regarding the successes (admirable and undeniable) of the "Dutch Incentive".

RP: *What are your main points of disagreement?*

SH: (1) I do not disagree that the Netherlands has been more successful than any other country in (1a) establishing a national network of [Institutional Repositories \(IRs\)](#) at all universities in the country, (1b) providing a system of incentives and assistance to encourage author self-archiving (the Dutch Incentive), and (1c), as a result, generating [one of the world's highest](#) average rates of *deposit* per IR (although not the highest: at the moment, that distinction is held by [Finland](#)).

(2) But the average deposit rate per IR does not tell us (2a) what fraction of those deposits is *full-texts* rather than just metadata, (2b) what fraction of those full-texts is OA's target content (*refereed journal articles*) rather than other forms of content, (2c) what fraction of those full-text articles was published *in a given year* (rather than being bulk retrospective deposits by a much smaller number of researchers) and, most important: (2d) what *percentage of the Netherlands' annual article output* (which Leo estimates at 55,000 articles per year currently) that fraction of annual full-text articles comprises, and (2e) *how long it will take to reach 100%* at that current growth rate.

RP: *You are saying that while the Dutch initiative has undoubtedly had some success, we cannot judge the extent of that success without having the additional data that you refer to?*

SH: I am. Without those data, all we have is impressive total deposit counts, but no way to compare the success of the Dutch Incentive objectively with other approaches, such as mandates, or mandates coupled with incentives.

Using Australian data, however, [Arthur Sale](#) has actually compared (a) IRs alone, (b) IRs plus incentives, and (c) IRs plus incentives plus mandates, and he found that the resulting annual full-text article deposit rates are, respectively, about (a) 15%, (b) 30%, and (c) 50+% of annual institutional article output (with (c) approaching 100% within about 2 years).

RP: *What do the Australian figures tell us about the Dutch Incentive?*

SH: In the absence of actual annual percentages for the Netherlands, we can only assume that the Dutch Incentive is generating about the same annual OA content as other incentives — that is about 30% (except that it is happening at a national level, rather than just a single institutional level), and that it would be doing at least as well as 50+% (and approaching 100% within about 2 years) if the Dutch Incentive were upgraded to a mandate.

RP: *What about Leo's claim that mandates would be resisted, and so are unenforceable?*

SH: Just look at the actual evidence!

RP: *What is the evidence?*

SH: All the evidence to date is that actual mandates do work: Authors do comply (exactly as they said in [Alma Swan's](#) various surveys that they would, worldwide, and in all disciplines,) without the need of any coercion or sanctions.

All the confident a-priori claims that mandates *wouldn't* work seem to be coming from those who have neither actually tried them, nor taken into account the results of those who have.

RP: *The priority for you is to achieve OA as quickly as possible. To that end you have proposed a Green mandate. Others have suggested that Gold OA should be mandated.*

SH: How? Who mandates whom to do what? Research institutions and funders have some say over what their employees and fundees do with the research they pay them to conduct, but (with one [prominent](#) and probably [premature](#) exception) they have no say over how publishers conduct their business.

Gold OA, unlike Green OA, cannot be mandated. About 10% of journals are pure Gold today, and a growing percentage of subscription journals are "[optional Gold](#)," meaning their authors can pay extra if they want the "umbrella-holding" service.

RP: *You mean researchers paying a Gold publisher to make their paper OA?*

SH: Yes. And the [current asking price](#) is not trivial (averaging about \$1,000 per article, and sometimes three times that), particularly while the potential institutional funds to pay for it are still tied up in paying for the institutional subscriptions for the 90% of journals that are not Gold OA.

So the choice for the research community is between continuing to wait (perhaps forever) for publishers to provide Gold OA (and then finding the extra money to pay their asking price); or providing Green OA for themselves, right now, by mandating it (and thereby perhaps even eventually inducing the institutional cancellations that [release](#) the subscription money to pay for a conversion to Gold OA, and at a realistic price).

The ID/OA Waystation

RP: *Let's explore your claim a little further. You say the solution lies in the hands of the research community, not the publishers. While your logic is irreproachable, it is also clear that publishers are doing [everything](#) they can to resist OA — not least by lobbying research funders and governments to dissuade them from introducing mandates. (And they are proving highly effective in at least delaying OA in this way). In addition, by insisting that researchers assign copyright to them as a condition of publishing, publishers are, in effect, able to claim ownership of the papers they publish, and so able to impose [embargoes](#) that prevent researchers from self-archiving their papers for six, or even 12 months.*

SH: And it's in order to moot such embargoes that I proposed the Immediate Deposit/Optional Access ([ID/OA](#)) compromise mandate.

RP: *Talk me through the ID/OA mandate.*

SH: The purpose of the ID/OA compromise is to remove publishers from the decision loop altogether, insofar as the research community's own research self-archiving policy is concerned at least.

RP: *As I understand it, this would still require researchers to deposit their papers in their institutional repository (IR) immediately on acceptance for publication, but it would permit them to restrict access to those papers to members of their own institution only for the period of any embargo. What you call "Closed Access".*

SH: Yes — for that minority ([38%](#)) of journals that impose any embargo at all. (The majority of journals ([62%](#)) already endorse immediate OA self-archiving.)

The important thing to note is that publishers *have no say whatsoever* over institutions adopting Deposit Mandates per se, nor over the timing of the deposit in their Institutional Repositories (IRs).

RP: *But publishers still get to decide when the deposited paper can be made OA.*

SH: Inasmuch as publishers have any influence over the date at which access to that immediately-deposited article is set as Open Access rather than Closed Access, the IRs' "[Fair Use Button](#)" allows any would-be user worldwide, if they reach a Closed Access article, to cut/paste their email address in a box and just click.

RP: *You mean by clicking on the Fair Use Button, any researcher in the world would be able to automatically request that the author email a copy of the paper to them. This is what you call "Almost OA"?*

SH: Yes. Clicking the button sends an instant email to the author. And in that email there is a URL. The author need merely click on this URL in order to authorise the instant automatic emailing of one copy of the full-text to the eprint requester.

So publishers can make access-provision less efficient, but they cannot stop it.

RP: *But the aim of OA, surely, is to ensure that all articles are made freely available, not just deposited and made "Almost OA" via what you call the Fair Use Button?*

SH: The immediate priority is to get those deposit keystrokes done, at long last. Those keystrokes have been the only thing standing between us and 100% OA all along. The ID/OA compromise mandate gets N-1 of the N keystrokes per article done for 100% of articles — plus the Nth (OA) keystroke for that [62%](#) of articles whose publishers are Green (i.e., who already endorse immediate OA self-archiving).

For the remaining 38% there is almost-OA, via the Button, for now. That can tide us over for our research usage needs during any publisher-imposed access-embargo period. With 62% OA and 38% almost-OA, the dominoes are poised to fall under the weight of the increasingly obvious and pervasive benefits of OA, and 100% OA will not be far behind.

Without OA or ID/OA mandates all we have is the 15% spontaneous deposit rate (plus perhaps another 15% if we add a Dutch Incentive). Life is short to keep sitting in the rain like this...

Copyright Compulsions



RP: *Many, however, argue that this does not address the fundamental problem, since it still leaves ownership (copyright) of the papers in the hands of publishers. The ID/OA Mandates, they say, just doesn't go far enough.*

SH: I wait patiently for someone to explain to me how and why, if all 2.5 million annual articles, in all 25K journals, were accessible free for all online, webwide, it would make the slightest difference whether copyright had been transferred to the publisher or retained by the author. The author remains the [author](#) either way; and the paper is freely accessible (i.e. OA) either way.

RP: *But wouldn't it help Green OA if authors retained copyright?*

SH: You said that some argue the ID/OA mandates "don't go far enough." My guess is that [copyright retentionists](#) think that getting authors to both retain copyright *and* self-archive might somehow be *easier* than just getting them to self-archive. In reality, it's much harder.

Self-archiving is just a few keystrokes. [Retaining copyright](#) requires negotiating with the publisher, and (whether or not the perception is realistic) it gives authors the impression of having to put at risk the all-important acceptance of their articles by their preferred journals.

That worry alone generates at least a half dozen of the 34 forms of [Zeno's Paralysis](#)! It's hard to see how needlessly increasing author resistance, and asking them to do more rather than less, likewise needlessly, would help get Green OA mandates adopted. (It's rather like trying to get someone one has unsuccessfully tried to persuade to jog to agree instead to jog *and* quit smoking *and* retake his driver's license too. (All good stuff, but hardly added incentives for the already recalcitrant!))

RP: *One form of Zeno's Paralysis results from researchers' fear that if they self-archive the copyright police will come after them. That suggests that retaining copyright might indeed make it easier for authors to self-archive?*

SH: Yes, but the real question is whether it is easier to mandate copyright retention than just to mandate ID/OA!

I also think there may be an element of [PDF fetishism](#) in copyright retentionism: a sense that access to the author's final, accepted draft is somehow not access enough — that it is the publisher's definitive PDF that is desperately needed, and that that's the one for which copyright retention is so important.

RP: *Let's clarify this: those publishers who sanction self-archiving generally insist that it is only the author's final peer-reviewed paper that is archived, not the publisher's PDF. And since it is held to be the definitive version of a paper, researchers prefer to have access to the PDF.*

SH: That's the claim. My reply to that is: "Who on earth cares whether it's the author's final, refereed postprint or the publisher's PDF, when the pressing problem today is *access-denied users* and *impact-denied authors*, not a missing [differential](#) between (accessible) authors' final drafts and (inaccessible) publishers' PDFs?"

RP: *This in turn is connected with the issue of the Fair Use Button you mentioned, about which there was an extended [discussion](#) recently on AmSci. During that discussion some questioned whether "[fair use](#)" does actually permit authors to email copies of their papers to colleagues as envisaged under the ID/OA Mandate. The conclusion seemed to be that while they can self-archive and email their final peer-reviewed papers, researchers cannot archive the publisher's PDF. Is that your understanding?*

SH: Not quite! Authors can *email* individual copies of either version to individual eprint requesters; that is fair use, based on a half century of "best practice" in mailing individual paper reprints to requesters.

Authors can also *deposit* either version in their Institutional Repository, whenever they wish.

The only difference is that publisher restrictions on the author's version are much lighter insofar as access-setting (Open vs. Closed Access) is concerned. Of the 62% of journals that endorse immediate, unembargoed OA, most do not allow it for their proprietary PDF.

But I think I know the answer to the question I posed earlier ("Who on earth cares about the PDF/final-draft difference?"): It is not the access- and impact-denied researchers who are fussing about this difference: It is librarians.

RP: *Well, it is a librarian's job to provide access to research, and in doing so they are expected to ensure that copyright laws are not contravened. You could argue therefore that it is their responsibility to fuss about such things, and that they have the interests of their patrons (researchers) at heart when they do so.*

SH: Their worries are misplaced. Users who don't have paid access to the publisher's PDF are infinitely better off with the author's final, peer-reviewed draft than with no access at all. And authors are likewise better off when their final, peer-reviewed draft is used and cited by users who don't have paid access to the publisher's PDF.

Users would not prefer to be denied access, and authors would not prefer to be denied impact, in order to wait for the publisher's PDF to be made OA. Researcher and librarian desiderata are being conflated here.

RP: *Are you sure? Leo Waaijers told me that, when asked, researchers in the Netherlands expressed a preference for the PDF.*

SH: Yes, Leo says that Dutch scientists, when asked, replied that they only wanted to see the publisher's PDF in their repository. But perhaps they were simply asked to choose between the PDF and their own final version. If I had been given those two alternatives in a context-free choice, I'd probably pick the publisher's PDF too!

RP: *That was his point!*

SH: That might be Leo's point, but it is certainly not the point of OA! The real issue to put to researchers is this:

"Would you rather have (a) your final draft freely accessible to would-be users who cannot afford access to the publisher's PDF, now, or (b) would you rather delay access until the publisher allows you to provide free access to the PDF?"

If asked that, what do you think the researchers' reply would be? Especially if accompanied by the actual data (a) on [publishers' current self-archiving policies](#), (b) the [success of mandates](#), and (c) the [OA citation advantage](#) for self-archived articles...

RP: *You are saying that when conducting a survey if you are careful about the way you word your questions, you can be sure of getting the answers you want!*

SH: If, unlike in an interview, the respondent must simply pick between fixed, forced-choice alternatives — no context, no queries, no declaration of premises — one can certainly bias the outcome. (You can even ask whether they have stopped beating their wives: True or False?)

But this is a non-issue anyway, because in the case of the Dutch Incentive, no one knows whether authors are depositing final drafts, PDFs, metadata only, or other kinds of content, because only total deposits are being counted.

So the moral of the story is that although the final-draft/PDF difference is a difference that [makes no functional difference](#) whatsoever to the needs of researchers, it is sometimes foregrounded by librarians and even elevated to serve as a justification for not adopting mandates at all (for reasons apparent only to librarians!).

RP: *You said earlier that researchers can archive (and e-mail to others) either the PDF version, or the author's final draft. Why then doesn't the ID/OA Mandate recommend archiving the publisher's PDF, and so avoid any disagreements about this matter?*

SH: There is nothing wrong with depositing the PDF if/when you can. And with ID/OA-mandated Closed Access deposits, distributed via the Fair Use Button, it does not even matter whether the "Fair use" Eprint that is emailed to requesters is the final draft or the PDF! As I said, it is Fair Use either way. But in the ID/OA mandate, the final draft should be the [default](#) option.

RP: *But why?*

SH: Because the publisher restrictions and embargoes on the author's final draft are the fewest.

PostGutenberg Politics?

RP: *You describe OA as "raincoat science." I'm still scratching my head however. Some people agree it is a simple matter, but reach very different conclusions. Still others deny that it is a simple matter, and reach yet different conclusions. What is particularly striking is that when they disagree with you people often cite the same "facts". What is the layman to make of this?*

SH: Richard, I wish I could give you the answer, but I have no idea! My own impression is that I, for one, pay *extremely* close — near-obsessive — attention to what those who are disagreeing with me are saying, and that I take enormous pains to reflect upon and answer them, point for minute point, in my quote/commentaries on AmSci and elsewhere.

RP: *And yet this so frequently fails to convince people. Why?*

SH: Never mind convincing! Is my point-for-point attention, reflection, and responsiveness even being read and registered, let alone reciprocated, by my interlocutors? Far from it. I find that the simple, transparent, raincoat-science points and counterpoints I keep making are, in equal parts, read superficially, misunderstood, or simply ignored, despite the fact that each and every one of them is a no-brainer.

So I don't think it's true that we all know and cite and pay attention to the same facts, or all the facts, despite the fact that the facts are indeed all simple and transparent.

RP: *I still don't get it. You say it is so simple, and yet disagreement is rife, and we are still waiting for OA. Why would people ignore or misunderstand a no-brainer?*

SH: I cannot explain why the misunderstandings and disagreements persist. But two candidate explanations that seem to me to be non-starters are (1) that there is some undetected profundity or complexity that is the true, substantive basis for the continuing disagreements; or (insofar as it concerns me and my archivangelising) (2) that it is I who am not paying close enough attention, rather than those who are disagreeing with or disregarding what I am saying!

(And, as I said before, although conflict of interest does explain why some publishers are being or acting obtuse or obdurate, there is no conflict of interest within the research community, so that can't be the explanation either.)

RP: *Can I suggest a possible explanation?*

SH: Please do!

RP: *As you agreed, some publishers are deliberately trying to delay or deter OA by lobbying and introducing embargoes, and you suggested that even well-intentioned librarians are impeding progress. Might it be, therefore, that for most people this has nothing to do with evidence or reason, but reflects a determination to preserve the status quo? In other words, people are resisting OA not on grounds of reason or logic, but out of fear that their profits, their status, their jobs etc. are under threat. Indeed, this has all the hallmarks of an ideological struggle (where reason generally has little place), and so the fundamental problem you face could be that it is just not enough to be right?*

SH: Those are interesting possibilities, but let's look at them a little closer:

Let's distinguish the active opposition of the publisher lobby (whose interests are indeed in conflict with OA) from the sluggishness and passivity of the research community (whose interests are congruent with OA). It is apparent to anyone who takes the minute it takes to grasp it that publishers can be taken out of the loop *completely* by the ID/OA mandate. So inasmuch as the delay to date has been caused by tooth-and-nail opposition from the publisher lobby, adopting ID/OA will simply moot that, once and for all.

And although librarians can be maddeningly pedantic and out-of-touch at times, their hearts are basically in the right place, and some of them are OA's most committed and effective allies. (Nor do I believe that librarian job insecurity is a factor at all.) The decisive factor is that the research is not theirs to make OA. Opening access to it is entirely in the hands of the researchers, not the librarians.

As to the sluggishness and passivity of the research community: Well, that's why the mandate is needed: because waiting for voluntarism would take forever. So it all comes down to the probability of persuading funders and universities to mandate ID/OA (or some other Green

variant). I am guardedly optimistic, based on the recent [growth of Green mandates](#), adopted and proposed, to date.

Could it still stall? Yes. But certainly not because it is impractical or infeasible: The already-adopted mandates, and their success, have already confirmed that it *is* practical and feasible, and that once put into practice, it works.

If universities and funders do not choose to do what has already been demonstrated to be practical, feasible and successful, and congruent with their interests, then I think only ignoring "evidence and reason" can be blamed, not ideology.

RP: *You say that OA is not in publishers' interests, and they have proved pretty successful in dissuading funders and governments from introducing mandates, or at least mandates with teeth. Moreover, they often do it on grounds that to impose OA on the world would be [a form of socialism](#). In doing so they are appealing to ideology I think.*

SH: (Ask publishers whether they think mandating publish-or-perish was a form of socialism — and where their business would be without it!)

Whether publisher lobbyists are appealing to ideology or to superstition or to credulity, the idea is to take them out of the decision loop entirely. Whether institutions mandate *deposit* is quite simply none of publishers' business: it is purely a research community matter.

Governmental funders are perhaps more susceptible to publisher lobbying than [universities and research institutions](#) are. But let us not forget that whereas not all research is funded, just about all of it originates from universities and research institutions. Hence the double-barrelled (funder + university) mandate is somewhat redundant (hence more robust).

The ID/OA mandate moots all publisher lobbies, and it is especially designed for institutions depositing their own contents in their own repositories. At the moment there are about an equal number of funder and institutional mandates, and the [bigger funder mandates](#) have more scope than any one university.

But once the slumbering academic giant awakens to its own interests and possibilities, it is institutional mandates that will carry us to 100% OA, whether anarchically or in concert.

Anarchiving?



RP: *Here's another thought: the development of OA is an inherently anarchic process (particularly the Green Road). For this reason some believe that it threatens chaos, and could damage or destroy the scholarly communication process. This is a threat that*

publishers have been keen to emphasise, and surely explains in part the continuing reluctance of funders and governments to introduce mandates.

SH: [Anarchy](#) is not such a bad thing! The Web itself is distributed and grows and functions anarchically. "Chaos" is another story, but what is chaotic about institutions and funders mandating that their employees and fundees deposit their articles' final drafts in their Institutional Repositories? Sounds quite orderly to me.

RP: *Many people disagree. As you say, the very nature of the Web is anarchic, and I suspect it is the Internet's decentralised, bottom-up anarchic nature that worries governments and institutions. They are more used to dealing with top-down, centralised processes. At the very least, they can see that OA implies change, and people find change unsettling and threatening, which is why they prefer to cling to the status quo? Essentially, what people worry about is the possibility of unintended consequences.*

SH: I expect you mean the "[Doomsday Scenario](#)" according to which mandated Green OA will destroy journals and peer review by destroying journal subscriptions.

RP: *That's one scenario, yes.*

SH: The obvious reply is that if and when 100% Green OA should ever make subscriptions unsustainable it will merely induce a [transition](#) to the Gold OA publishing model, paid for, per article, out of the institutional subscription cancellation savings. However, because self-archiving, and self-archiving mandates, grow [anarchically](#), it will take some time for Green OA to reach 100%, and it will take still longer for it to generate cancellations.

RP: *Why?*

SH: Because it will not be at all obvious at what point 100% Green OA had been reached for any given journal, let alone all journals. Moreover, there still seems to be quite a persistent market for the paper edition, even in the online age. (And even in those few subfields that have already reached 100% Green OA years ago, there is as yet [no evidence of cancellations](#): On the contrary, they seem to be moving toward a transition to Gold OA — [prematurely](#), in my view, as the rest of the research world first needs to reach 100% Green OA.)

RP: *But you think that reason will eventually prevail?*

SH: Not among researchers themselves, but among their institutions and funders. After 13 years of waiting I don't want to sound too sanguine, but lately at least 14 research funders and 14 departments and institutions around the world (especially the UK) don't seem to have found it too "unsettling and threatening" to actually go ahead and adopt the [Green OA self-archiving mandates](#) (which Arthur Sale and others have shown to work).

And 5 more funder mandates plus 2 multi-institutional mandates have been proposed (with one of the funder proposals being for [all the major US funding agencies](#) to mandate Green OA and the [multi-institutional proposal](#) being for all the universities of Europe to do so).

And although the [25,000 European](#) keystrokes and the [2,500 American ones](#) to date could have been used to even better effect (to deposit articles!), the European and US petitions for mandating Green OA do seem to betoken some settling of any sense of threat...

RP: *But while the mandates you refer to are clearly encouraging, they are still a drop in the ocean. I think we both agree that this is partly because publishers have been surprisingly successful in delaying OA to date. One problem Green OA advocates face, of course, is that they cannot match the lobbying power of the publishers, or indeed of the Gold advocates — which includes for-profit organisations like [BioMed Central](#)) — who have far greater resources and punch. Both [you](#) and [I](#) have in the past proposed the creation of an OA Foundation, or Green lobby group. What's your current thinking on that?*

SH: I got the idea from you, disagreed at first (because of the disanalogies between the Open Access and [Open Source](#) movements), but then, with the successes of the publishing lobby against Green OA mandates, I realised you were right. The [European](#) and [US](#) Green OA petitions might well be the potential core of a Green OA lobby.

RP: *You are referring to the various petitions researchers have signed called on European and US politicians to support OA?*

SH: Yes.

RP: *Do you believe an OA Foundation or Green lobby group is realisable?*

SH: I hope so, but I don't know how one goes about creating a Foundation or a lobby.

In the US there is already the Alliance for Taxpayer Access ([ATA](#)), backed by [SPARC](#) and [ARL](#), serving as a lobbying organisation for the passage of the US Federal Research Public Access Act ([FRPAA](#)), the biggest Green OA funder mandate of all.

But I think there are problems with ATA's casting the OA problem [too narrowly](#), as the problem of the tax-paying public's access to research (mostly health-related research). The research literature is written mainly to be used and applied by researchers. So the public interest is chiefly in *researcher access to research*, not in direct public access to primary research in all fields, most of it technical, irrelevant to public health, and of no direct interest to the public (although of course [public access](#) too comes with the OA territory).

There is also [Public Knowledge's Open Access Project](#), of which Peter Suber is Director. Public Knowledge is a lobbying group too, but on behalf of a much *wider* issue: digital information technology. Peter's subset seems to be focussed on the right target though, and that's another possible core for a Green OA lobby — except that I think Public Knowledge is at least equally committed to promoting Gold OA, which would again dilute and divert Green OA efforts.

Creative Disagreement

RP: *Let's turn the spotlight on you for a moment. You've been advocating OA for some thirteen years now, and you have done so with a great deal of passion. You have also demonstrated very real exasperation at times. Why do you care so much?*

SH: That's a reasonable, indeed a shrewd question, and I will answer, and try to do so candidly and openly. My reply has three parts:

First, I do not think it is because I am that passionate about OA per se. I would say that the intrinsic dedication of [Peter Suber](#), [Subbiah Arunachalam](#), [Barbara Kirsop](#), [Leslie Chan](#), [Hélène Bosc](#) (and probably others) for the cause of OA exceeds my own. I do care about OA, but not enough to explain all the time and effort I have put into archivangelising.

Second, the penchant for "[Creative Disagreement](#)" that impelled me to start an [Open Peer Commentary](#) journal almost three decades ago was the very same thing that drew me to "[Sky-Writing](#)," and to the [Usenet](#) discussion that led to the Symbol Grounding Problem, then to [Psychology](#) and [Scholarly Skywriting](#), and that even got incorporated into my teaching as "[Student Skywriting](#)".

RP: *I guess Creative Disagreement — which you describe as the "interaction of data, ideas and minds"— is an important part of your thinking?*

SH: Yes. And this has always made me see OA not just as an end in itself, but as a [means](#) of reviving — through online [quote/commentary](#) — that ancestral, interactive [oral tradition](#) for which human brains (and mine especially!) were specifically adapted by evolution.

The advent of writing, along with all of its obvious advantages, slowed down the turn-around time of communication and interaction so much as to put it radically out of phase with the speed of interactive thought — which happens (not coincidentally) to be about the same as the speed of real-time (conversational) speech. I think skywriting quote/commentary will restore some of that lost [creative potential](#) on a scale that (for example) live oral symposia could never do.

RP: *Ok, we can come back to that. But before we do, you did say there was a third reason why you are so fervent an advocate of OA.*

SH: Yes, there is. You remarked on my exasperation at the too-slow pace of OA, and that exasperation's there alright; but it's not just about OA and its sluggishness. The fact is that *I've been here before*, many times, with other ideas of mine, ideas on which I gave up long ago, never persisting like this.

RP: *Why did you give up?*

SH: I'm not sure. But what I can say is that I'm all too familiar with the quick, confident dismissals, the inattention and the indifference. In the past, they always led to the still-birth of my ideas: In response, I would readily give up on each of them, for one simple reason: *that none of the ideas was itself simple*. Hence I could not really be sure it was right, and the

critics were wrong. But looking back at it now in hindsight, I gave up far too readily, I'm afraid.

RP: *How do you mean?*

SH: I rarely encountered a critique or rejection I found decisive or convincing in its own right either, but it never took much effort or imagination on my part to elaborate each inchoate incoming critique, in my own terms, in such a way as to bring out genuine weaknesses or uncertainties in each idea I had had.

RP: *You are saying that in the past you were more easily persuaded to give up in the face of criticism than you have been with OA?*

SH: *Dissuaded* is a better descriptor! It's not that I was ever sure that my ideas had been wrong and that the critiques had been right; but the confident dismissiveness that some of my ideas often evoked, and, even worse, the uniform disinterest that most of them inspired, just made me conclude that I must just be incapable of cooking anything that anyone cares to eat.

Until the symbol grounding discussion on Usenet, that is. There something different happened — probably a combination of some natural affinity I seem to have with the online [quote/commentary](#) medium, plus the many frustrating years of having been ineligible, *ex officio*, to do any Open Peer Commentaries on the papers I was umpiring for BBS: Instead of giving up on my ideas in the face of the usual criticism, in skywriting I kept refining them and rebutting the criticism until the ideas eventually turned into my [most influential](#) paper (perhaps my *only* influential paper!).

RP: *It was something about the online medium that caused you to persist with your ideas about symbol grounding?*

SH: Yes. I think what kept me going was (1) the openness of the Usenet medium (unmoderated online discussion) and (2) the frustrating fact that that most of my interlocutors were dilettantes: students and computer programmers with no special expertise and lots of time on their hands. (Yet I did yearn for an upgrade in the demography of Skywriting Space: I wished that the peers of the realm had been up there in the skies too, rather than leaving me skirmishing with rookies; so that too became a motivation for OA.)

RP: *Yet, ironically it was in skirmishing with rookies that you gained the confidence to stand firm, and refine your ideas: Perhaps you were better off without the peers of the realm?*

SH: I don't think *that* would have deterred me one bit! On the contrary, I think higher quality commentary would have inspired me more, and I yearned for it. It was the medium itself — skywriting — that transformed me.

But the amateur level of discourse in the symbol grounding exchanges did give me a foretaste of what it would be like to keep hearing the same bad arguments over and over, and how to try to rebut them from a different angle each time.

RP: *So the kind of people you were skirmishing with was not the issue; it was the nature of the medium in which those skirmishes took place — a confirmation presumably of the potential of the medium for encouraging and enriching creative disagreement?*

SH: This might be a clue: I actually entered the symbol grounding discussions thinking I was a *critic* of Searle's argument. But from the very outset, I found myself rebutting naïve counterarguments by others *against* Searle — counterarguments that were patently wrong.

I didn't want to praise Searle. I just wanted to get those obviously invalid counterarguments out of the way so I could get to my own argument against Searle. But I never did. I just kept rebutting the counterarguments, over and over, as they kept coming back for more.

In fact, it was not until Searle himself wrote to me (offline) something to the effect that "Look Stevan, you disagree with me on a few points on which reasonable people might disagree, but on the essence of my argument you are one of the few who actually agree with me! So why don't you just admit it and say so?" And he was right. And that was what led to the symbol grounding problem.

RP: *Are you now entirely confident in the symbol grounding problem as you have formulated it?*

SH: No. I wasn't sure about symbol grounding either, and I'm still not sure, because the idea is nontrivial, and hence it is not transparent to me whether it is right. (Always the Cartesian doubt!)

Moreover, once symbol grounding [caught on](#), I kept having the disheartening experience of discovering that most of those who purported to be agreeing with me had in fact misunderstood symbol grounding, and were agreeing for dead-wrong reasons.

RP: *It sounds very much like the OA debate!*

SH: Only in some respects. With the OA idea (or rather, [raincoat science](#)), I was indeed encountering the same familiar pattern of confident prima facie dismissals and, worse, mostly disinterest. But the difference was that this time the idea at issue was so utterly trivial that it was *transparently correct*.

If it weren't for its human, empirical dimension, which makes it unprovable, I would say that the case for the optimality and inevitability of Green OA self-archiving is almost tautological. Hence the denials and critiques were almost tantamount to arguing fervently that one plus one does not equal two.

RP: *And it is this that has really motivated you to argue the case for OA so fervently?*

SH: It became addictive. Not because I have an overwhelming need to defend tautologies, but because that pattern of negative reactions and neglect was so overwhelmingly familiar to me.

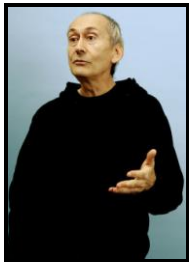
In a nut-shell, then, the obsession with archivangelism is partly to avenge all those stillborn brainchildren of mine, and partly a [genuine fascination](#) with the cognitive dynamics of how

so many clever people can keep being so systematically wrong, yet so convinced they are right — about something so patently obvious.

For me, the OA debates are a kind of microcosm of all intellectual interaction; and since one can only live once, and ideas are evolving all the time, I might as well try to get to the bottom of this one, this time, once and for all.

Perhaps this 3rd motivation will seem trivial to you, Richard, even petty, or pathetic, or bathetic. But you asked! (I do think that this interview has turned into something of a psychoanalysis — but not an unwelcome one.)

Past Polemics



RP: You described your OA advocacy as near-obsessive. Your critics would I think agree. You are also accused of fanatical intransigence, and of intolerance towards those who disagree with you. Do you think that your combative approach may sometimes get in the way of your message?

SH: Yes, all of that is true. I think a decade and a half of unrequited archivangelism has turned me into something of a curmudgeon. (Maybe precursors had already primed that propensity, as I confessed earlier.)

But I think there may be a bit more to it than that. My tenacity itself is not intransigence and intolerance. I think it is important to distinguish the occasional eruptions of curmudgeonliness (which I do not deny or defend) from what I described earlier, about my style of minute, point-by-point quote/commentary.

RP: Nevertheless, some of those who have disagreed with you on AmSci must surely have been hurt by your response?

SH: I hope not, and I hope I am not fooling myself in thinking that the overwhelming majority of my point-by-point quote/commentaries on AmSci have not been combative or ad hominem, but addressed objectively, if obsessively, to the substantive points under discussion. It is perhaps ironic that although my style is often polemic, my nature is actually [irenic](#), and it genuinely pains me to think I might have hurt feelings.

RP: Yes, your friends and colleagues often make this point — saying that there is a striking contrast between Harnad the private individual and Harnad the OA advocate. But what about the obsessiveness?

SH: Obsessiveness is the hallmark of many things, both good and bad, in human nature. It should be possible to calculate how often and to what extent my point-for-point quote/commentary has been *reciprocated* by my interlocutors. There are almost 10 years' worth of data from the [AmSci Forum](#) from which a simple perl script could extract the reciprocity scores, point for point, for me and for my interlocutors: I think they would reveal not a small, but a huge asymmetry.

Now, obsessive that may well be; but whether that persistence was based on valid or invalid points is quite another matter, I hope you will agree, and would require a closer evaluation than merely to categorise it (validly) as obsessive.

And surely, for OA, the validity or invalidity of the points is what matters, rather than the obsessiveness of the style.

RP: *But bludgeoning someone with your point-by-point quote/commentary — no matter how valid the points you are making — will appeal to their emotions, not their rationality, and so perhaps degrade your message.*

SH: About my occasional bouts of combativeness, I have agreed with you that, on those occasions, it has got in the way of my message. But to agree that my mainstay — point-by-point quote/commentary — is tantamount to "bludgeoning" would be quite another thing!

With the excruciatingly slow march of OA, the devil is in the details, on which I focus very specifically, whereas many others keep shrugging them off. You seem to be suggesting that just persistent, detailed commentary itself is, in and of itself, off-putting — which it might indeed be; but surely that's not what's meant by bludgeoning, or combativeness, or causing pain?

RP: *Well, the founder of the first pre-print archive ([arXiv](#)), [Paul Ginsparg](#) has certainly [used the term](#) bludgeon in connection with you.*

SH: And to think that I once used to portray myself, fatuously, as playing John the Baptist to his [Messiah](#)!

RP: *But bludgeoning, or even just perceived bludgeoning, can have rebound effects, can it not?*

SH: It can indeed, and I think it is unmistakable that I am being blackballed by some factions of the Open Access Movement. I was part of the founding meeting in [Budapest](#), but I was not invited to [Bethesda](#); I was invited to the first [Berlin](#) meeting, but never invited again (I party-crashed [Berlin 3](#)!); I was at the first [CERN](#) meeting, but never invited again. Nor is my popularity high in the Gold contingent of the (uneasy) Green/Gold coalition either. And then there is of course that [prominently immortalised](#) falling out with the Open Archives Initiative (OAI) you just mentioned: That even predates the Open Access Movement.

Perhaps there is some point in blackballing me, as I have very pointedly criticised each of these factions (except Budapest) on many occasions. But perhaps it would have been more to the point to respond substantively rather than pointing me unceremoniously to the door!

RP: *Many would leave the room and not return. You, however, stand outside arguing with anyone going into the room!*

SH: Well, I can give many examples of OA points on which I have persisted doggedly, to little direct, palpable avail, for years, but with the points (not me!) eventually prevailing, years later, when they either proved themselves to be valid or were simply proposed by someone else, in a less dogged way.

So I'm not sure whether I've just agreed with you! (I think I half have!)

RP: *Ok, I see the distinction you are making, and I agree that you are far more punctilious in arguing your case than your opponents. I also suspect that many of those opponents know they cannot out-argue you (how can one defend a vested interest in a point-for-point detailed debate!), so rather than responding on a point-by-point basis they dismiss your arguments as the rantings of an OA "advocate", or "activist" — or sometimes "zealot".*

SH: And my own self-mocking term "archivangelist" has not helped me in that regard either...

RP: *Nevertheless, you are an advocate for OA aren't you?*

SH: It's not that I'm not an OA advocate as well. But that leaves out the long list of things that are not advocacy at all, but concrete, practical tools that I and my collaborators and students have created, to serve the needs of OA.

RP: *What would you include in that list?*

SH: [Psychology](#), [BBSprints](#), [CogPrints](#), [EPrints](#), [citation-linking](#) and [Citebase](#), the [self-archiving FAQ](#), [ROAR](#), [ROARMAP](#), [Eprints-ROMEO](#), the [UK](#) and [UQaM](#) access/impact studies and [bibliography](#), the [preprint/corrigenda strategy](#), the [Green OA Mandate](#) proposal, the [metric RAE](#) proposal, the [ID/OA strategy](#), the [Fair Use Button](#) — and more that does not come immediately to mind.

RP: *Fair enough. That's an impressive list!*

SH: Not impressive until/unless it helps propel us to 100% OA, but certainly not just "advocacy" either. Whereas things like the [Subversive Proposal](#), the postings on [AmSci](#) and elsewhere, plus my [talks](#), [PPTs](#), the [papers](#) I've written on OA, my [blog](#), and even my [evidence to the UK Select Committee](#), can all be dismissed as mere OA advocacy, the previous practical list surely cannot. Each item was a genuine innovation, which led to a lot of consequences (many unacknowledged!).

Let me hurry to add that it's not really acknowledgement for its own sake that I seek, but in order to give my words more influence than something that can keep being dismissed as the mere rantings of a zealot!

RP: *What is undeniable is that you are untiring in your efforts on behalf of OA (whether concrete tools or advocacy). I recall Gene Garfield once enquiring on the AmSci mailing*

list if you [ever sleep](#)! As a matter of curiosity, how many e-mails do you write in an average day?

SH: I've just checked my mail log for the past 14 months, and (unless I've made a calculation error) it shows that I have been sending an average of 19 emails a day (a number I actually find surprisingly low!). What is perhaps peculiar to my quote/commentary skywritings in particular, is more their length and degree of minute detail than their absolute number.

RP: *How many hours a day do you spend at your computer, and how much of that time is spent on OA?*

SH: I don't have a tally of my online air-time, but I think I average about 14-16 hours a day, every day, at the keyboard, about 60% of that time spent on OA. I used to have a life...

Beyond Open Access

RP: *And you will again! I want now, however, to get to the nub of the matter. Once we have achieved OA (and you can start living again) what will it do for mankind. Let's agree that OA is inevitable, and let's assume we have arrived there — whether by means of the Green Road or the Gold Road it doesn't matter...*

SH: I'm ready to play the game, Richard, and to examine this counterfactual conditional, but can I first point out that it is indeed still highly counterfactual, and that (if I'm right) the reason we still have not arrived to the optimal and inevitable lo these 15 years is because it *does* matter which Road we take...

RP: *Ok, ok, I asked for that. But here's my question: Once we arrive at the OA terminus, what have we gained? What is the point of OA? I know that OA advocates argue that OA will speed up research, and so lead to more rapid cures, and faster scientific progress. But from what you said earlier, you clearly see OA as part of a larger picture, and positioned across a much longer timeline. You said, for instance, that language is a way of sharing categories, and that science is a high-level exemplar of this category sharing.*

SH: So far I agree...

RP: *Essentially, you believe that human progress depends on our being willing and able to share categories, not just by sharing languages, but by sharing everything we do with those languages, including experiences, information and research — because in doing we can enhance our understanding of the world.*

SH: I didn't say "everything," but so far I'm still with you...

RP: *I was struck when you said earlier, however, that writing "slowed slowed down the turn-around time of communication and interaction so much as to put it radically out of phase with the speed of interactive thought." The implication of this seems to me to be that, whatever its benefits, the print age was an "unnatural" state of affairs, not only in terms of slowing down communication, but also in (necessarily, since printing words on paper and then distributing them to your readers is a costly process) interposing a toll fee for the exchange of categories. In the digital age, of course, this is not necessary. Indeed, one*

could argue that in the digital age to charge people to access research is about as irrational and counter-productive as charging people to use words themselves? Have I understood correctly?

SH: Yes you have. I would just add (predictably) a few points by way of commentary:

(1) Yes, the picture is bigger, and OA's outgoing timeline is long — indeed it's Eternity. (It's OA's *incoming* timeline that's taking far too long!)

(2) Print was unnatural for peer-reviewed research publishing, but not for trade publishing, which is the much bigger end of the Gutenberg egg.

(3) And the reason "experiences, information and research" (i.e., categories) are shared is not human altruism, but self-interest: because that's the way to use the categories and to keep them growing.

(4) It's also important to note that what writing and print slowed down was the [real-time, "online" \(oral\) dialogue](#) for which human language and thinking evolved: Writing and print did not slow down *communication itself* overall: they accelerated it!

But skywriting will now accelerate communication even more, in part by allowing written dialogue, too, to take place at (almost) the speed of thought — and in part by allowing it all to take place at an unprecedented and hitherto unthinkable scale: almost instantly visible and accessible to everyone on the planet.

Speaking — and now skywriting — are the "online" media of mental interaction, and writing and print are the "offline" media. Only the online media can engage multiple minds, interacting in real time, at the speed of thought.

And whatever speeds up and widens those interactive category growth cycles, enhances the Category Commons; whatever slows or narrows them, diminishes the Category Commons. Open "aerial" accessibility and interactivity are optimal; toll-based and terrestrial communication is not.

RP: *It is important to note that when it comes to generating new ideas and knowledge no man is an island I guess?*

SH: No single brain is an island.

There is no such thing as "[distributed cognition](#)" in the sense of a single mental state, spread over many heads, any more than there can be a single migraine headache spread over many heads.

There is, however, *collaborative cognition*, in which ideas are generated through creative interactions among multiple heads. Two heads (and more) are better than one. And plural heads are essential for language, the main medium of collaborative cognition.

RP: *To put it another way, speaking did not evolve for soliloquy.*

SH: Definitely not. Wittgenstein was largely right that a "[private language](#)" is not viable. (A private language could never have evolved: You could have sensorimotor categories if you were alone in the world, because the world corrects your miscategorisations with consequences; but who/what would correct you if you misnamed them *to yourself?*).

And language would not be public, or productive, if we each kept our vocabulary (i.e., our categories) to ourselves. So its benefits to individuals have been (roughly) proportional to how *public* language managed to make itself.

The trajectory from the oral tradition (the first form of *publication*) to writing, then print, then skywriting has been a natural process of optimising the original medium, language, by extending both its reach and its scope for interactivity.

RP: *Can we say that in order to benefit from mankind's intellectual "products", we cannot afford to treat them as private property?*

SH: That's a bit too general. Perhaps the best example of where the open sharing principle does apply is the one that looks at first glance like the paradigmatic *counterexample*: patented drugs. Nothing could be more different from the Category Commons, in which all categories are openly shared, used and built upon by one and all, than a proprietary patch in which I hide my category in order to be able to sell my product.

Yet that sort of proprietary patch is, in a sense, what we are all naively rooting for, in dreaming of a cure for cancer. *So why is all, or most, or even much of the research on cancer (even the R&D research of pharmaceutical companies) not being withheld from publication?* Even patented categories are only being withheld long enough to stake a proprietary claim on the exclusive right to create and sell products derived from the patented string of symbols.

The answer is obvious: because everyone — not just the patients, but the tradesmen — would be the loser if cancer research findings were not made public for use, in their research phase, by publishing them. And that "research phase" is not only by far the biggest phase of the R&D process: it is essentially unending ...

RP: *... hang on. I think I can see what you mean, but this glosses over the many thorny issues currently surrounding intellectual property doesn't it — not least the undesirable monopoly impact produced by the patenting of drugs and medical procedures, which has the effect of pricing the developing world out of modern medicine?*

SH: I wasn't praising patents, Richard, just noting their existence! I have no expertise at all on patents, or "intellectual property" in general, just a profound personal aversion to the patenting of life's essentials. I was only pointing out here the paradoxical fact that even proprietary, patented findings are *published*, and the prior research on which they were based all the more so.

RP: *Ok. So you are making a distinction between information that even those with a proprietary mindset may see some value in sharing, and information that some will argue ought to be proprietary?*

SH: Maybe that's it. The relevant distinction insofar as publications are concerned is not the distinction between patented and unpatented findings but between trade and non-trade publishing (let's call them ["income" and "impact" publishing](#)).

In income publishing it has always been the *words* that were being sold for trade. And that was always the wrong model for the Category Commons, where it was the *content* of the words, the categories they described, not the words themselves, that mattered — both to the readers who wanted to use and apply those categories, and to the creators, who likewise wanted their readers to use and apply their categories, rather than wanting to sell words to them for royalty income.

Hence the access restrictions imposed by the Gutenberg medium on all forms of publishing were congenial for income publishing but always counterproductive for impact publishing (the "[Faustian Bargain](#)"), and the Postgutenberg era was just waiting to shake them off. (Why it took so long to realise this, and to go ahead and shake it off, once it became possible to do so, just brings us back again to the puzzle of [Zeno's Paralysis](#)...)

RP: *Leaving aside such distinctions for the moment, you are saying that the OA era will return us to a situation in which people can again communicate at the speed with which they think (as they did in oral cultures) — by means of quote/commentary?*

SH: Not just at the speed at which people think, but at the speed at which they *co-think*, in real time, which is the speed of oral dialogue. Writing made it possible to preserve an off-line record of our thoughts ("[verba volant, scripta manent](#)"), but at the same time it lost that real-time interactivity for which our brains are specialised and optimised. Skywriting will bring that back.

RP: *How exactly?*

SH: Let me count the (three) ways:

(1) Skywriting reduces the turn-around time for written interactions to almost instantaneous exchanges, via email; but that alone is not enough, because speech is still faster, indeed just the right tempo. No one would rather have a real-time conversation by email than by telephone except when it is critical to have an instant written record (and a good enough approximation to that should soon be available via online automatic voice transcription).

(2) Skywriting increases its power when the interaction is not one-to-one but many-to-many (via email discussion lists with threaded web archives).

(3) But the real power of skywriting comes from being able to bring an otherwise inert text to interactive life: Quote/commentary is a real-time dialogue between the commentator and the text. (It can even be done with the text of a dead author!)

For what really brings the text to life is not just that its author can respond and continue the dialectic interaction, but that any other skyreader/writer can respond as well -- although, with Chomsky's admonition in mind, skywriting (but not skyreading) privileges in certain designated sectors of OA space may need to be reserved for qualified peers.

RP: *That sounds somewhat elitist. After all, you said you had your biggest creative breakthrough skirmishing with the dilettantes. I'd like to suggest again that you might lose something if you restrict your debating to the peers of the realm.*

SH: Experience and practice will tell. Have you forgotten spamming (and [flaming](#))? If it is not elitist to filter out spam, then why would it be elitist to filter out inexpert contributions from an expert forum?

There's plenty of room in [cyberspace](#). Not only can everyone skyread everything (thanks to OA), but everyone can [skywrite](#), about anything and everything, somewhere. Just maybe not in a forum reserved for board-certified cardiologists...

There are peer-reviewed articles and unrefereed preprints. The user can choose whether to hew to just the one, or the other too. Similarly, there will be sectors for unmoderated, moderated, and peer-reviewed quote/commentary. Users can again choose what to hew to, just as they can choose between [Wikipedia](#) and [Scholarpedia](#).

The Category Commons



RP: *What is it that you expect to emerge from this online dialectic among heads and texts?*

SH: Ever more, new, creative *categories*. We don't have a viable theory of ordinary, non-creative cognition yet, to explain how we learn our ordinary, everyday categories, through experience and through hearsay. So we are even further from being able to explain the much rarer capacity to discover or create new categories that no one has ever thought of before. But we can already say that OA will help.

RP: *Which I guess gives us — at the practical level — potential new cures for cancer, new ways of feeding the world's poor etc. Etc. But tell me: language-origins theory was banned for a century for being too speculative. Are you not being speculative here?*

SH: I'm certainly being less fastidious than in [other contexts](#)! Let me paraphrase [Walt Whitman](#) (and conflate him a bit with [Isaac Newton](#)): [Hypotheses fingo?](#) *Itaque hypotheses fingo!*

RP: *So what's the hypothesis?*

SH: It's really just a cartoon theory of creativity:

[Pasteur](#) suggested that the only thing that would-be [creators](#) could do was to prepare their minds as best they could, by mastering the existing [categories](#), and then hoping for a bolt from the blue ("Chance favours the prepared mind").

[Russell](#) summarised the creative process (without, of course, explaining it) thus: If I encounter a new datum, I first see whether I can fit it into my existing categories. If I can, then that's that. If I cannot, I see whether I can find a justification for rejecting the datum, as wrong. But if I can neither reject the datum nor fit it into my existing categories, then I need to revise my existing categories to fit the datum.

RP: *Which brings us back to creative disagreement, and to potential new cures for cancer. But does this process only happen when creating categories?*

SH: No. Something like it happens even in ordinary, non-creative trial-and-error learning of categories from experience: The features and rules underlying our day-to-day categories are always being revised, consciously or unconsciously, as we keep sampling new cases, until we are no longer making errors.

One might say that the ongoing process is "error-driven": It is when a set of features and rules *fails us* that they have to be revised.

RP: *But you were talking about discourse, not direct experience.*

SH: That's right. When we learn the features and rules through hearsay rather than direct experience, we are being handed them on a platter. But if hearsay instead *challenges* the features and rules that we are *already* using, telling us that they don't work, then we have a kind of error-driven revision process.

RP: *So where does the right solution come from?*

SH: I certainly can't tell you how failure manages to generate success in this sort of "[creative disagreement](#)," when it's successful. (My hands are already full trying to explain ordinary non-creative learning from experience!).

But I think failure itself can be as important a contributor to a creative outcome as well-prepared prior categories are: If Chance favours the prepared mind, Necessity is the mother of invention.

Some creative outcomes are arrived at "off-line," rather than during real-time interactions, whether sensorimotor or symbolic. Some occur during unconscious consolidation periods (that some think happen while we are asleep).

RP: *So we don't quite know how new categories are created, but you think that quote/commentary is a more effective (and faster) way of discovering or creating them?*

SH: Scholarly quote/commentary can engage the real-time part of our brain's inborn creative capacity, the one for which the speed of thought — hence our quick wits — were specifically adapted by evolution.

RP: *But to benefit from that, we first have to get our brain-children up there in the sky, for everyone to access and quote/comment on toll-free. As you pointed out earlier, the paradox of OA is that the main potential beneficiaries — researchers — have signally failed to*

embrace it. Your view is that were they to do so they would lose very little (essentially only the time it takes to [key details](#) of their papers into their IR), but they would gain a great deal — since if everyone could access, use and quote/comment their research, the growth of the Category Commons would be maximised, and mankind as a whole would benefit.

SH: Yes, so far only 15% of researchers have bothered to do those keystrokes. But there may be a way to induce the rest to do it too, and it's based on what it is that researchers really want. All that earlier talk about "give-away authors" cultivating the "Category Commons" may have given the wrong impression that scholars and scientists are saintlier than they really are.

RP: *How so?*

SH: Researchers have renounced the greater material rewards of trade for their higher, monastic calling, in the pure pursuit of categories. And they do give away rather than sell their intellectual property, their brain-children. But they would still like to receive credit, where credit is due.

RP: *So is it glory, rather than gold, that researchers are really looking for?*

SH: Not quite. It's important to note that in wishing to give away their texts, researchers do not wish to give away their [authorship](#) of those texts. And that's not just for the sake of posthumous, platonic glory.

Authors care about the current uptake, usage and impact of their research, and about getting credit for it in the here-and-now, because that is what pays their weekly salaries and funds their ongoing research (and draws students, collaborators, and users).

So glory is partly an end for researchers, but partly just a means to an end, something that helps them go on to make more, bigger contributions to the Category Commons, contributions still more deserving of that glory.

RP: *This suggests that they are just as selfish as those who take the trade route; they just happen to obtain their gold in an indirect way?*

SH: Again, that's not quite right (or fair)! Researchers do have an *intrinsic* motivation for doing research in the first place, as an end in itself, rather than for extrinsic reward. They want their findings to be taken up, used, applied and built upon by further research; they want to contribute to knowledge. We can't take that away from scholars and scientists; and that's what definitely sets them apart from, say, merchants.

But then impact metrics do go on to monitor and "monetarise" their research impact, providing *extrinsic* incentives and rewards for success. (There is probably a Wittgensteinian "private research" argument to be made against the viability of solipsistic research, driven purely by subjective curiosity, its findings just destined for a desk-drawer rather than for publication.)

Scholars and scientists give away their work. In exchange, they don't want royalties but they do want (and need) credit to keep working. So there needs to be a way to measure and assign that credit.

Scientometrics and Semiometry

RP: *In other words, researchers are motivated — and materially rewarded — by the "impact" that their research has, bringing us neatly to your latest interest in impact metrics?*

SH: Directly. Already in the publish-or-perish days of the Gutenberg era, publications were being counted. And not just their quantity, but their quality. That's partly what peer-review did: qualified experts decided whether or not a paper had successfully met the established quality standards of a given journal. (Remember, I am focussing here on journal articles, though much of what I say applies to books too.)

RP: *As I understand it, the impact of an article is essentially a measure of the impact of the journal in which it is published, not necessarily the impact of the article itself.*

SH: Not quite. First, although there are many different kinds and measures of impact, we are talking here about citation impact: The number of times an article is cited. (If research has made an important and useful contribution, that should be reflected in part by the fact that it is taken up, used, and hence cited by further research.)

Clearly each individual article does have its own individual citation impact. But in addition, there is the "[impact factor](#)" of the journal in which it was published: that's just the average impact of that journal's articles.

There is a known quality hierarchy among the journals in every field. So authors' raw (publish-or-perish) publication counts tend to be "weighted" by the peer-review quality level of the journal whose publication standards it has met. Some of that weight came from the journal's reputation, but often that has been found to be correlated with the journal's impact factor.

RP: *The Journal Impact Factor is a very crude metric then?*

SH: Very. Both publication counts and journal impact factors are weak, approximate, and error- and bias-prone measures of the quality, importance and impact of research.

More informative than just the average citation count of all the *other* articles in the journal in which an author's article was published (i.e., the journal impact factor) are the exact citation counts (1) for that article itself, and (2) for all of that author's articles. But there are other, new online metrics; and the OA era is spawning [still more](#).

RP: *And these new online and OA metrics have given birth to the field of scientometrics?*

SH: Yes. This is a new field that will really come into its own as the OA digital database grows. It has already been shown that [OA enhances citation counts](#) of articles, across all

fields tested (physical sciences, biological sciences, social sciences, humanities). It also enhances [download counts](#); and early download counts [predict](#) later citation counts.

RP: *Again, the important point to note I guess is that these new — and more detailed and sensitive — measurement tools require research to be freely available, since it needs to be accessible to specialist search engines and [spiders](#).*

SH: That's right.

RP: *So what other metrics are there beyond article counts, journal impact factors, download counts, and raw citation counts?*

SH: First, we can already do better than raw citation counts. The miracle of Google is partly due to the [PageRank](#) algorithm, which ranks websites not just by their raw incoming link counts; it also weights each incoming link, recursively, by the link count of the website from which it comes. (In other words, a link from a much-linked site is worth more than a link from a little-linked site.)

This has an obvious analogue as "[CiteRank](#)" for citations: A citation from a more-cited article should be worth more than a citation from a less-cited one. And similar measures can be derived from *co-citations*: being co-cited with a Nobel Laureate, for instance, should give a higher co-citation score than being co-cited with a postgraduate student.

RP: *I'm told that when they were developing Google's technology [Larry Page](#) and [Sergey Brin](#) had the model of the citation [in mind](#). I guess this is an example of the kind of positive feedback that occurs when categories are freely available for everyone to share!*

SH: A good example. [Google Books](#) and [Google Scholar](#) are also helping to provide [book](#) citation metrics, especially useful for fields that are more book-based than journal-based. And it goes on: There are also *chronometrics*.

RP: *What are those?*

SH: Both downloads and citations have a time-course. For both downloads and citations there is an initial growth rate, a peak, and a long-term decay rate. And authors too, have time courses, so the length and size of their publication time-lines (number of papers, number of years of publication, etc.) can be taken into account, separately, and in new composite measures such as the [h-index](#).

Alongside time, there's space: "[inbreeding/outbreeding](#)" scores can be calculated, based on whether an article is only cited by its author and co-authors, or by a wider circle of collaborators, or a still wider circle covering a field, a discipline, or crossing disciplines.

RP: *Would more inbred articles also resemble one another more?*

SH: Probably, but not necessarily. With "[semiometrics](#)" (word frequency, [co-occurrence](#), and sequence analyses), topic and text distance and overlap can be calculated separately too, as a measure of how unique an article's text is, all the way from a few shared terms to outright plagiarism.

["Authority" and "Hub" weights](#) can also index whether a paper is an authority on a topic, cited by many authorities, or a hub, citing many authorities. [Commentaries](#) and [tags](#) will be countable too; and eventually the commentaries and even each citation's context may be analysable to estimate how positive or negative they are.

RP: *Ok, let's stop there. My head is spinning now. The point to take away is that impact need no longer be a one-dimensional property, but a whole spectrum of properties.*

SH: And that spectrum of metrics will have different meanings for different fields: In some fields, fast early growth will be valued; in others longevity. Some fields will assign more weight to interdisciplinarity, others to uniqueness.

It will be possible to put them all together into a "[multiple regression equation](#)," with the weight of each metric customised for each field or subfield. Each individual metric, and combinations of weighted metrics, can be validated and adjusted against other forms of evaluation, including peer review, other human ratings (such as the panel rankings in the UK [Research Assessment Exercise](#)) and other metrics.

RP: *Once again, what we learn from all this is that, although they may have to be mandated for their own good, researchers have a lot to gain from OA — always assuming they want to be recognised and rewarded for their work.*

SH: And most do. This will allow research performance to be evaluated, credited and rewarded, field by field, extracting and comparing the individual contributions of authors and papers from the complex network of co-authored works crisscrossing trajectories across time in OA space (including the detection of gaps and unsung heroes) in ways that could not be dreamt of in the Gutenberg era, or even in the online era, until the [Open Research Web](#).

A foretaste is already available from Tim Brody's scientometric search engine, [Citebase](#).

Information Liberation?



RP: *Ok, enough with the scientometrics and semiometrics! I'd like now to return to a claim you have made several times if I may. That is, that OA's "very specific target" is peer-reviewed journal articles.*

SH: Sure.

RP: *What I'm thinking is that if, as you maintain, humans have more to gain by freely sharing categories rather than hoarding them, and if, in a digital networked world, the cost*

of distributing these categories goes away, then is it not logical that eventually all types of information and creativity will be shared in a toll-free manner? After all, as you know, an increasing number of open and free movements are emerging today, and these movements tend to argue that in the age of the Internet most, if not all, information wants (or perhaps needs) to be free. That suggests that your distinction between giveaway and non-giveaway information also goes away doesn't it?

SH: Before I reply to this important question, can I first stress that archivangelising has led me in directions I would never have gone of my own accord. I have no intrinsic interest in promoting average research (which is most research, by definition), nor in enhancing researchers' citation counts, nor in designing or promoting more beans for bean-counters to count.

The purpose of the Subversive Proposal was just to get it all online and free so we could get on with it, discovering and creating new categories, and quote/commenting it all. If the researchers had just put on their raincoats when it first became possible, they wouldn't still be getting soaked right now, and I and many others would not have had to go into the arcana of weather-forecasting technology and humidity indices.

RP: *I hear what you saying, and I can see that since OA is clearly part of a much larger development it would be easy to get distracted. But I feel I should ask my question anyway.*

SH: Distracted, and diverted, and derailed! And, for much the same reason that I don't like promoting average research, it also goes against my nature to argue that all other creative callings (other than the scientific and scholarly ones — and even those, only for their peer-reviewed journal articles) only do what they do in order to make a buck, and will only do more or better if it will make more bucks for them.

I am as certain as I am of anything that not Mozart nor Michelangelo, not Shakespeare nor Socrates did what they did for money, any more than Einstein or Euclid did. I am simply going by today's demographics, and desiderata.

RP: *Which tell you what?*

SH: That there is a profound fault line here, which needs to be taken into account rather than just wished away. The giveaway/nongiveaway distinction and the impact-maximising/income-maximising distinction have to be brought into focus, not fudged — at least long enough to get us over this absurd hump, with researchers sitting on their hands instead of keying in their articles.

RP: *I think you are saying that while Mozart and Shakespeare may not have been particularly motivated by money, today's scribblers and creators are. But here's the thing: the Web appears to be encouraging more and more people to give up any expectation of being able to directly sell their words, or works. Instead they appear to be looking for less tangible things — things not unlike what sci-fi novelist Cory Doctorow calls [Whuffie](#), a hypothetical measure of reputation or esteem. Doctorow, by the way, is happy to live by the sword over this: He makes his novels freely available on the Internet under a [Creative Commons](#) licence. And is not Whuffie what researchers seek when they publish their research? They just happen to call it impact.*

SH: Is it not telling that there exists only one or a few Cory Doctorows among novelists seeking "whuffie," whereas, despite their sluggishness at self-archiving, the authors of peer-reviewed journal articles have been giving their articles away all along, even in the paper era? And that the academic world has had a (crude) reward system based on research impact rather than sales income all along too?

Doctorow giveaways are the exception, whereas research giveaways have always been the rule. With novelists, you still have an uphill battle persuading them to renounce royalties for whuffie, whereas whuffie in research already has its own currency (citations, etc.), and is already influencing researchers' salaries and their research funding.

Wampum or whuffie?

RP: *Well, the huge take up of the Creative Commons suggests that people may be more interested in Whuffie than that implies. Look, I know you want to hold the line, and emphasise that the author giveaway mindset of researchers is unique; but let me put this another way: You said earlier that instead of seeking royalties researchers are looking for credit. You also said that in seeking that credit their motivation is career advancement, and so presumably material reward. Could one not therefore argue that their motivation is essentially the same as trade authors; that it's just a question of how you correlate impact/whuffie with material reward?*

SH: I don't think that quite captures it either. Researchers have both an *intrinsic* motivation (to contribute to knowledge) and an *extrinsic* motivation (to put bread on the table). I hope I am not doing an injustice to the traders in proprietary goods and services if I say that their motivation is largely only extrinsic.

RP: *You may be. But perhaps the point is that, like it or not, in a digital world the rules change, and all creators of words, information and knowhow will have to give their "products" away, and so seek material reward indirectly — in the way that researchers have always done.*

SH: The question to ask yourself is this: Is there something about a *digital* product versus an *analogue* product that makes a human being suddenly switch from extrinsic to intrinsic motivation (i.e., from wanting [wampum](#) to wanting whuffie), from proprietary mode to esteem-based mode? I wish it were so, but I somehow doubt that the contingencies of survival designed our selfish genes that way:

Yes, we share categories, and that way we all gain. Yes, science cures cancer, so we're all better off if collaborative cognition is public and published and OA, rather than private and proprietary and toll-gated.

But novels and poems and textbooks and journalists' articles (and music and movies and even software) are something else. They may have become digital today, instead of analogue, but unlike research (and unlike language in general), they remain squarely in the same proprietary domain as that of the irreducibly analogue products such as physical goods and services, just as they were in the paper era. They were not an impact-seeking anomaly,

yearning for a way to give itself away big-time, the way research has been all along (more akin to today's Hyde Park blogs than to eBay or even Amazon).

RP: *But I'm saying that this is not a matter of choice, but necessity. Doctorow will tell you that he would love to make bucket loads of money, but he believes that in a digital world the only way most fiction writers will make money is by building up sufficient whuffie from their writing to allow them to earn a living from associated services — such as giving paid talks or providing consultancy etc.*

SH: I had much the same [discussion](#) with [Hal Varian](#) several years ago, about what would be for fee and what for free, in the online age. He argued that, wampum-wishes or not, most writers don't make much from their writing.

RP: *Well exactly. Unless you are someone like [J K Rowling](#), and have authored a series of Harry Potter books, say, you will never make money from writing a book.*

SH: I accepted that, but invoked the eternal springs of hope: We are a species that will work (hard) for delayed gratification — even for the remote possibility of delayed gratification (we're gamblers too). But remove that hope altogether, and I'm not sure what you have left, by way of motivation.

Starting writers may well be happy to give away their first writings for free on the web for the sake of self-promotion — but if they knew for sure in advance that they never would or could make a penny from selling their writings?

Many of my own ideas, as I said, were still-born because of dismissal and disinterest on the part of my peer audience, but I am not a trade writer. If I *were* a trade writer, however, would my ideas not be still-born if guaranteed in advance never to have a chance to make a bundle, simply because we are now in the digital rather than the analogue era? Are actors inspired to perform for free on a DVD, when they used to require a fee to perform on stage?

RP: *You are saying that novelists, unlike researchers, would never do the keystrokes without at least the dream of making money?*

SH: That sounds too harsh! Let's say some, maybe many, wouldn't do some, maybe many of the keystrokes. (Whether that would lose us the best keystrokes or just the average ones, I cannot say.)

But researchers are different in two respects. They do research in order to play their part in the game of Human Inquiry — the collective accumulation of categories. This is a bit like a computer game (likewise non income-generating), where success is its own reward. In addition, because the benefits of expanding the Category Commons are shared by all, our institutions and our taxes fund and reward the successes of researchers.

So there is an extrinsic reward system in place, over and above the intrinsic thrill of the quest (which, I agree, exists in both domains). But where is the counterpart for this extrinsic reward system in the arts (let alone in software-writing)? Subsidies? Can they replace all dreams of riches? If they can, then OA will indeed spread to all fields of human digital endeavour. (But

first things first, and research is already an open and shut case for OA, with no need of hypothetical conjectures to shore it up.)

RP: *Well if you're right the number of scribblers looks set to plummet, although your suggestion that there is no extrinsic reward to be found in writing doesn't explain the explosion in blogs. There is, however, another aspect to this: Since digital information can be so easily and freely copied, the only way that you can protect it is to make it behave like analogue information (or creativity) is by hobbling it with [digital rights management](#). This has two consequences: First, people will eventually not be able to buy and own books (unless you believe that people will always buy books in print and so spurn eBooks), but only rent temporary access to them. Second, and more worrying, DRM will surely destroy, or significantly curtail, rights that we have come to expect — privacy, fair use, free speech, etc. The question then is: Are we prepared to forego those rights in order to prop up an outdated mode of communication, and insist that digital content must behave as though it were still living in an analogue world?*

SH: Can I plead ignorance and inexperience on that one? I just don't know enough about the human selfish genome, the yearnings of the human ego, or the economics and technology of the digital medium to do anything but freely opine on this open question, like everyone else.

Of one thing I am sure, however. A clear line has to be drawn between this uncertain territory and the open and shut case of research and OA, where these questions simply do not arise, because it is impact and not income that is and always has been the goal, and where the reward system for impact is already in place, and will only become more sensitive and accurate, thanks to OA scientometrics.

But let me ask you a question in return: You are a journalist. You used to sell your words for an obligate fee in the analogue world; now you are experimenting with giving them away digitally and asking for a voluntary fee: What if it turns out that voluntary fees don't work to make ends meet? Will we have as many articles from you as we had before?

RP: *I can't say. But I am a freelance journalist, not a salaried journalist. Your question is premised on the belief that it is still possible for a freelance journalist to make a living by means of an obligate fee model. I do not believe that to be the case.*

SH: How so?

RP: *The rate per word paid to most freelance journalists by trade publishers today is so derisory that it is not possible to make a living unless you seriously limit the amount of time you spend on an article. In effect, this means that you can do little more than cut and paste press releases — like a worker on a factory production line! This is not the same as investigating a topic and then reporting on it — which is what I believe journalism implies.*

SH: What changed?

RP: *A number of things, not least the shift to a digital environment. Some of the best "reporting" now takes place on blogs, and is usually done by non-journalists. As you know, the content on blogs is free. This means that, as New York University journalism professor [Jay Rosen](#) explained when I [interviewed](#) him, newspapers and magazines are in*

a lot of trouble. One consequence of this is that freelance rates have been falling in real terms.

Add to this the fact that newspapers have responded by encouraging academics like you — as well as consultants, lobbyists, corporate and political spin doctors, and a host of other people who have a message that they want to convey to the world — to contribute articles and the situation is even starker than it first seems.

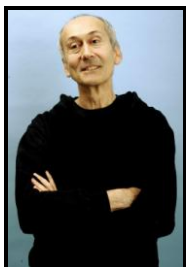
Since these non-journalists earn their living elsewhere they can afford to provide them for free, or at least at nominal cost. This is good news for them, because they get access to a public platform from which they can deliver their message (and increase their whuffie), and good for newspapers and magazines, because it allows them to lower their costs, and so put off the day of reckoning that the digital world promises.

For freelance journalists, who discover that the market price for their product is on a downward spiral, however, it is not such great news. It means they must deskill themselves and become cutters and pasters, or seek an alternative "business model", in the hope that this will allow them to continue practising journalism.

I should add that I don't disapprove of any of this. Approving or disapproving is irrelevant, since it is the reality of the situation. My point is that if I don't want to become a cutter and paster I need to find another source of income to support my journalism.

SH: This is very informative and all sounds very plausible to me. Freelance journalism — and probably journalism itself, along with the magazines and newspapers it appears in — are all undergoing a profound revolution in the online era, and it may eventually spread to books too. I can only offer a few half-baked hypotheses, based on a few potentially relevant analogies.

Optimal, inevitable, and obvious



RP: *Please do!*

SH: (1) Consider teaching, "distance learning" and online courseware. There is something similar brewing there: Do I invest my teaching skills in paid real-time courses and remunerative textbook writing, or do I put all that effort and energy into free-for-all online [courseware](#) (at the risk of losing my day job teaching, and renouncing potential textbook royalty revenues too)?

Well, there's still the accreditation trade: Students, even if they use free courseware, still need to be reliably "par-reviewed" to see whether they have acquired the knowledge and skills the

courseware was meant to impart. Higher Education Institutions then become [distance-learning](#) degree-providers, providing the free courseware, but also doing the testing and certifying the outcome as having met their established quality standards. Tests have to be kept Closed (to avoid cheating), and their content can be based on mastery of the best courseware.

This makes it possible for such institutions to reward their instructors based on the quality, uptake, usage and [impact of their OA Courseware](#) output, much the way they reward their researchers based on the quality, uptake, usage and impact of their OA research output. And high-quality/high-impact OA Courseware should attract more users and more degree-seekers to the institution. (Instructors have a great advantage over the competition in being able to design exams based on their own material. Degrees will also have greater impact if they are connected with the providers of the courseware.)

(2) For [book](#) authors and publishers, there is of course no counterpart for the demand for accreditation and degree-seeking, so maybe the texts will need to remain Closed Access, but an earlier OA ("Whuffie") Phase for everyone's work might provide better, fairer, and more predictive metrics for selecting which books to publish (Closed Access) and to promote, than the present haphazard, inbred, name- and trend-based criteria for publication and promotion.

In the early Open Phase, every aspiring author's writings would be OA, and carefully [monitored with OA metrics](#) to estimate their uptake trajectory and demography. Then the decisions — on what to accord Closed Access publication and promotion to — could be based on those metrics.

This also encourages continuing to do a certain amount of OA writing even in Phase II, to keep the demand up. (And then, if it does turn out that revenues from spin-offs in other media — TV, radio, video, talks, consultancies, products, advertising revenue — become sustainable enough to allow more — or even all — of the writing to be kept OA, so be it: the market decides.) Something like (2) might also work for journalism.

I rather suspect, however, that you have metamorphosed from a journalist into a social historian of technology, and that you will probably end up writing a book with sales potential: but if that book too, were doomed to be given away online for an iffy voluntary fee, would it not be ironic if the only way to make ends meet turned out to be to go "[back to the oral tradition](#)" in the sense of having to charge speaker fees, like ex-presidents?

RP: Well your suggestion doesn't really address the problems posed by DRM. But as to my writing a book — I am no J K Rowling, so it is quite clear to me that I couldn't sell sufficient copies to justify writing it for money. It would have to be written in the hope of earning some Whuffie.

I was, by the way, commissioned to write a book a couple of years ago. But leaving aside the fact that the publisher [unilaterally ripped up the contract](#) half-way through the project (as a result of financial pressures from the digital world apparently), it was immediately evident to me when I looked at the royalty figures, and asked the publisher how many copies of the book he expected to sell, that writing the book could only ever be a labour of love. There was no way I was going to make any income from doing it.

So for me all this suggests that — in one respect at least — trade scribblers like me and researchers like you will share more in common in the future than we do today: We will both exist in a "give-away" world.

Clearly there will remain very significant differences, not least in our respective capacity to create new categories! The problem journalists face right now of course is that, unlike researchers, we have no viable income stream to sustain us. And it is for that reason we need to experiment. And the likelihood is that, however few Doctorows and Poynders there may be today, we are but the first swallows of the coming summer.

SH: What you've just said is very compelling, and I confess I hadn't made the freelance/salaried journalist distinction. That's why what keeps coming to mind is metrics: Possibly there will be a way of translating journalist impact into income (in a media world already ruled by polls, ratings, and sweeps).

Several things are apparent: Even in the print-book best-seller category, name-recognition and a popular following are critical. A bad book from a big name is more likely to sell than a good book from a no-name. (The latter will probably even have trouble getting published at all.) I don't admire or bless this "ratings-based" thinking; I just note it for what it is.

Now in the unmoderated sectors of cyberspace — blogland — anyone can skywrite anything, but most of it will be ignored, for reasons of sheer volume alone. But if by a variety of indicators — not just raw downloads, links, or citations, but also subtler metrics — the wheat can be detected among the chaff, who knows where it might still lead?

RP: Indeed. And what this tells us (and I think we both agree on this) is that the Internet is having a very profound impact on the world. But my final question then: What would be the implication if the doomsayers were proved right and all content — including research papers — became entirely locked down with digital padlocks, and only available to those who were willing to pay for the privilege?

SH: We limped by with the unavoidable loss of research impact in the Gutenberg era. We could just keep on limping in the Postgutenberg era too, despite the fact that that loss is now fully avoidable. I am dead certain, however, that we won't have to do that.

The self-generated spectre of a "lockdown" is just one of the 34 bugaboos that have been keeping us locked in our state of Zeno's Paralysis for far, far longer than they need have done.

The outcome is optimal, inevitable, and obvious. That's what all my compulsive point-for-point quote/commenting has been banging on about. The keys are fully within the reach of the research community alone. (No warden to consult!)

So it's just a question of time till our digits deposit our digits, as they were destined to do all along. The heat death of the universe is still a ways off, though archivangelists have shorter time-constants. (I just wonder whether I will still be *compos mentis* and capable of partaking of the dinner dialogue, by the time the inevitable celestial meal makes its tardy entrance...)

RP: Ok, thanks for your time.

© 2007 Richard Poynder

This interview is published under the terms of the Creative Commons Attribution-Non-commercial-No-Derivatives Licence (<http://creativecommons.org/licenses/by-nc-nd/2.5/>). This permits you to copy and distribute it as you wish, so long as you credit me as the author, do not alter or transform the text, and do not use it for any commercial purpose.

If you would like to republish the article on a commercial basis, or have any comments on it, please email me at richard.poynder@btinternet.com.

Please note that while I make this article freely available to all, I am a freelance journalist by profession, and so make my living from writing. To assist me to continue making my work available in this way I invite anyone who reads this article to make a voluntary contribution. I have in mind a figure of \$8, but whatever anyone felt inspired to contribute would be fine. This can be done quite simply by [sending a payment](#) to my PayPal account quoting the email address richard.poynder@btinternet.com. It is [not necessary](#) to have a PayPal account to make a payment.