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OPEN ACCESS ARCHIVANGELIST: THE LAST INTERVIEW?

*Our special guest today is Stevan Harnad, a prominent figure in the Open Access movement. Author of the famous 'Subversive Proposal', founder of 'Psycoloquy' and the Journal Behavioral and Brain Sciences, creator and administrator of AmSciForum, one of the main coordinators of CogPrints initiative – the list could be stretched far beyond that – he doesn't really need introduction for anyone not wholly a stranger to the story of the Open Access movement. A cognitive scientist specialising in categorization, communication and consciousness, Harnad is Professor of cognitive sciences at the Université du Québec à Montréal and University of Southampton, external member of the Hungarian Academy of Sciences and doctor honoris causa, University of Liège. But even his **polemics** with John Searle about the Chinese Room didn't become as famous and influential as his Open Access advocacy.*

Open Access Archivangelist

It's often said that it all began in 1994 with Harnad's 'Subversive Proposal': a call to fellow academics to upload all their previously published research output to open access repositories, thus making it freely accessible to anyone with Internet access. Yet Stevan Harnad's adventure with open scholarly publishing began before that – as far back as 1978, when he founded the Open Peer Commentary journal 'Behavioral and Brain Sciences'. The journal was unique in the way it complemented traditional peer review with open peer commentary: copies of each accepted article were sent to about 100 experts in the fields it touched. Their short commentaries were then co-published with the target article along with the author's replies. As Harnad made clear in his **2007 interview with Richard Poynder**, although the journal was published in the paper era and was thus technologically incapable of becoming anything close to what later became known as Open Access – it made Stevan wonder about ways in which more people could benefit from open peer commentary. So when in the middle of the 1980's Harnad was exposed to the emerging Usenet, his maturing ideas at last met the right technology. Harnad called the idea '**skywriting**'. Open access to scholarly literature was then the only logical conclusion – a necessary condition for skywriting.

Stevan Harnad was with the Open Access movement from the very beginning, longer even than the term itself existed (the term 'Open Access' was introduced in 2002 with the **Budapest Open Access Initiative**). For a number of years he expressed his thoughts about the state of Open Access in particular and academic publishing in general in the American Scientist Open Access Forum (now the "Global Open Access List" (GOAL) as well as on his blog '**Open Access Archivangelism**'.

100% Green Gratis OA

Harnad's long-standing advocacy for "Green" Open Access (OA) is well known. According to him, the fundamental priority is for academics to fill their institutional research repositories. Once all published research output is openly available via this "Green Road" without delay (embargo), academic publishing will have to be modified in order to survive. The emerging model ("Fair Gold") will be Open Access, with journal publishers' roles reduced to their sole remaining essential function: managing peer review. Much of what we do toward attaining Libre (CC-BY) Gold OA before academic output reaches 100% Gratis (toll-free) Green OA is premature, redundant and may even delay the transformation of academic publishing to Fair Gold OA (playing into the hands of publishers who are trying to delay OA as long as they can).

'Retirement'

It seems, however, that the long era of Harnad's 'Archivangelism' for Open Access is coming to an end. Earlier this year, 22 years after the 'Subversive Proposal', Harnad made it quite clear via **Twitter** that he is about to quit Open Access Advocacy.

Tomasz Lewandowski contacted Stevan and asked him about his decision, its context and his plans for the future. Stevan was kind enough to give us an interview summing up his career as Open Access advocate.

The Interview:

Tomasz Lewandowski: Can you tell us a bit about your research?

Stevan Harnad: My research is on how the brain learns new categories and how that changes our perception as well as on the "symbol grounding problem" (how do words get their meaning?) and the origin and adaptive value of language. I also work on the Turing Test (how and why can organisms do what they can do? what is the causal mechanism?) and on consciousness (the "hard problem" of how and why organisms feel). Apart from that I work on open-access scientometrics (how OA increases research impact and how OA mandates increase OA). I also edit the journal **Animal Sentience: An Interdisciplinary Journal on Animal Feeling** and I am beginning to do research on animal sentience and human empathy.

Concerning your now rather famous tweet about your retirement as Open Access Archivangelist: what was the context of this decision? What's next?

The context (if you look at the tweet conversation) was that Mike Eisen (co-founder of PLoS) was implying that copyright law and lawyers consider the requesting and receiving of reprints or preprints to be illegal. I think that is nonsense in every respect. It is not illegal, it is not considered illegal, and even if it were formally illegal, everyone does it, preventing it would be unenforceable, and no one has challenged it for over a half century!

So I replied that this was wishful thinking on Mike's part. (He is an OA advocate, but also co-founder and on the board of directors of a very successful Gold OA publisher, PLoS. There is a conflict of interest between publishers (whether they be TA [Toll Access] publishers or OA publishers) and the advocates of Green OA or eprint-sharing. So what I meant was that Mike was wishing it to be true that eprint-sharing was somehow illegal, and hoping that it would not happen, as it conflicts with the interests of getting researchers to pay to publish in Gold OA journals -- rather than to publish in TA journals and self-archive -- if they want OA).

Mike replied (equally ironically) that I was the champion of wishful thinking. At first I was going to reply in the same vein, with a light quip. But then I decided, no, it's true: I had long wished for all refereed research to be Green OA, and my wish has not been fulfilled. So I simply stated the fact: That he is right, I have lost and I have given up archivangelizing.

If it turns out that the wish is nevertheless fulfilled eventually, all the better. But if it is overpriced Gold OA ("Fool's Gold") that prevails instead, well then so be it. It's still OA.

My own scenario for a rational transition to "Fair Gold" OA via Green OA has been published and posted **many times**, and it may eventually still turn out to be the path taken, but for the past few years I find that all I am doing is repeating what I have already said many times before.

So I think suffering animals need me much more than the research community does. This does not mean I will not be around to say or do what needs to be said or done, for OA, if and when there is anything new I can say or do. But the repetition I will have to leave to others. I've done my part.

Bekoff, M., & Harnad, S. (2015). **Doing the Right Thing: An Interview With Stevan Harnad**. *Psychology Today*.

Was there any point during your time as an OA activist that you felt it is all going in the right direction and your vision will soon become true?

Quite a few times: First in **1994**, when I made the **subversive proposal**; I thought it would just take a year or two and the transition to universal self-archiving would be complete. Then I thought commissioning CogPrints would do the trick. Then making CogPrints OAI-compliant. Then creating OA EPrints software; then demonstrating the OA citation advantage; then designing Green OA mandates by institutions and funders; then designing the copy-request Button; then showing which mandates were effective; then debunking Fool's Gold and the Finch Report.

But now I see that although the outcome is optimal, inevitable and obvious, the human mind (and hand) are just too sluggish and there are **far, far more important things** to devote my own time to now. I've said and done as much as I could. To do more would just be to repeat what has already been said and done many times over.

Carr, L., Swan, A. & Harnad, S. (2011) **Creating and Curating the Cognitive Commons: Southampton's Contribution**. In, Simons, Maarten, Decuypere, Mathias, Vlieghe, Joris and Masschelein, Jan (eds.) Curating the European University. Universitaire Pers Leuven 193-199.

In an interview you gave in 2007 to Richard Poynder you draw a vision of something one might call an intrinsic history of ideas of Open Access. In the beginnings of the modern Open Access movement there were, according to what you said, two main streams of thought. One stream was concerned with accessibility to scholarly literature, the other - with its affordability. In the former stream, one can position your BBS and arXiv and other early OA initiatives. In the second stream, there is Ann Okerson and her efforts to make scholarly literature more affordable for universities (though perhaps not for the broader public). And although not primarily concerned with Open Access, the search for a more affordable scholarly journal financing model eventually led to the APC model (paid Gold OA). So then the accessibility movement became the Green Road to Open Access and the affordability movement - the Gold Road to Open Access.

Now, when things are put this way, I think we can see the inner tension of the Open Access movement more clearly. A possibility arises that these two streams within the Open Access movement were not that compatible. Could you elaborate on that? If you look at the Open Access Movement as an offspring of two separate problems: one related to the accessibility of the scholarly literature and the other related to its affordability, do you think that OA was ever really a single, coherent movement at all?

First of all, two pertinent details: (1) the APC (paid Gold OA) cost-recovery model was already there, explicitly, in the 1994 Subversive Proposal – as was the assumption that universal Green OA self-archiving must come first. (2) Ann Okerson was not particularly an advocate of APCs as the solution to the affordability but of licensing.

Affordability is just an aspect of the accessibility problem: If there were no accessibility problem -- if there were no need for all researchers to have access to all research, or if they somehow already had it -- then affordability would not be a problem, or a very minor one. Conversely, if there were no affordability problem, then accessibility would not be a problem.

But affordability was always primarily a problem experienced directly by institutional librarians (the "serials crisis") whereas accessibility was a problem experienced directly by researchers. The solution for affordability seemed to be lower journal prices whereas the solution for accessibility was for researchers to provide to their final refereed drafts the open access that the online era had made possible -- by self-archiving them in their institutional repositories (i.e., what came to be called "Green OA").

The ultimate solution, of course, was (1) universal Green OA self-archiving followed by (2) universal journal subscription cancellation by institutions, (3) the cutting of all obsolete journal products and services and their costs by publishers, and (4) a transition to author-institutional payment for the remaining essential cost (managing peer review) up front (what came to be called "Gold OA").

But this optimal Gold outcome was from the very beginning (already in the 1994 Subversive Proposal) *predicated on first providing universal Green OA* as the source of the access and the driver of the cancellations, downsizing, and conversion to Gold OA. Without providing Green first, the only way to get to Gold OA is to pay the inflated price of pre-Green "Fool's Gold" OA, which does not solve the affordability problem, leaving all obsolete products and services bundled into the inflated price per article. And even the notion of a global "**flip**" of all the planet's journals to Fool's Gold OA is obviously incoherent to anyone who thinks it through.

So the rush for a pre-emptive solution to the affordability problem has become a Fool's Gold Rush. Only if institutions and funders first mandate Green OA globally can there be a viable, stable transition to affordable, scalable, sustainable "Fair Gold" OA.

Harnad, S (2014) **The only way to make inflated journal subscriptions unsustainable: Mandate Green Open Access**. *LSE Impact of Social Sciences Blog* 4/28.

You once defined Open Access as 100% Open Access - meaning it's either 100% or not at all, because only 100% will make the traditional publishers fall. This definition is fair enough but in reference to some of the previous questions I think we might rather need an operational one. So let me ask you - what would need to happen for you to say "Hey, today we have Open Access in the academic world"?

See above: "Only if institutions and funders first mandate Green OA globally can there be a viable, stable transition to affordable, scalable, sustainable "Fair Gold" OA". Without 100% Green OA, journals are not cancellable.

Piece-wise local transitions to (Fool's) Gold OA (by country, institution, funder, field or publisher) not only add to the overall costs of access while subscriptions continue everywhere else, but they divert attention from what really needs to be done, which is for all funders and institutions to mandate Green OA (with deposit required immediately upon acceptance for publication plus either immediate OA or the **copy-request-Button**). In contrast, unlike Fool's Gold OA, Green OA *can* be mandated piece-wise (by country, institution or funder).

And of course publishers know all this, which is why they are putting all their efforts into **embargoing Green OA**, trying to force those who want OA to pay for **Fool's Gold** instead.

Sale, A., Couture, M., Rodrigues, E., Carr, L. and Harnad, S. (2014) **Open Access Mandates and the "Fair Dealing" Button**. In: *Dynamic Fair Dealing: Creating Canadian Culture Online* (Rosemary J. Coombe & Darren Wershler, Eds.).

What will the world of scholarly communication look like after 100% Open Access is established? How would this influence the entire model of scholarly communication?

Once Green OA is universally mandated and provided, there will be the transition to Fair Gold OA, with peer-review being the only remaining service provided by publishers, and paid for by institutions out of a fraction of their subscription cancellation savings. Once research papers are all open and text-minable, open data will soon follow, and with it open science. The rate of progress and collaboration in research will be greatly enhanced and we will have a rich battery of OA **metrics** for monitoring and measuring research progress, productivity, and currents of influence.

Harnad, Stevan (2013) **The Postgutenberg Open Access Journal (revised)**. In, Cope, B and Phillips, A (eds.) *The Future of the Academic Journal* (2nd edition). 2nd edition of book Chandos.

Your phrase stating that Elsevier was "on the side of angels" when it comes to embracing OA made a career of its own. You once took that position in 2007 after Elsevier's policy on Green Open Access was introduced. You still maintained it even when the Cost of Knowledge boycott was in its peak phase. Even when in 2013 Elsevier excluded from its policy researchers that were under institutional mandates you "continued to attest that". As far as in 2015 Michael Eisen still seemed to hold a grudge toward you for this statement. Could you once more recall the context in which this phrase was coined and what exactly did it mean? Do you still continue to attest that?

The "**side of the angels**" quip was **always a ruse**, designed to keep Elsevier from trying to embargo Green OA for as long as possible by throwing them a token credit to use as PR amidst their onslaught of blame (from librarians and authors). Elsever knew it, I knew it, and so did anyone else with a realistic sense of what was going on, and what was at stake.

I also did not believe in **boycotts** (and their failure every time has borne me out) but in mandates (though they have not yet prevailed as I had hoped either).

But much less trivially, although it was just as obvious and inevitable as OA that publishers would use every trick possible to try to stave off Green OA for as long as possible, it should be obvious that publishers are not the real obstacles to OA. The real obstacles are precisely the ones who will benefit directly from OA the most: researchers. (The biggest indirect beneficiary is of course the tax-paying public that supports the research and researchers.)

If researchers worldwide had not been so sluggish, timid and obtuse, and had provided Green OA of their own accord as of 1994 (as computer scientists and physicists had already been doing then for over a decade, taking advantage of each new online means of providing OA as it appeared, completely oblivious to what publishers might think or say about it) then we would have long reached the optimal and inevitable by now.

But most researchers didn't. So we are still busy adopting OA mandates (many of them weak, hence ineffectual) and trying to get their details right:

Vincent-Lamarre, P, Boivin, J, Gargouri, Y, Larivière, V & Harnad, S (2016) **Estimating open access mandate effectiveness: The MELIBEA Score**. *Journal of the Association for Information Science and Technology (JASIST)*, 67.

On the one hand, big legacy publishers are embracing Open Access more and more - by introducing open access options to their old journals, by establishing policies for self-archiving and by creating new open access journals. All this has been happening ever since Springer bought BioMed Central back in 2008. On the other hand, their revenues have stayed as high as before, or they've even increased. You yourself wrote many posts concerning the phenomenon of "double-dipping". In reference to your answer to the last question - could you comment more broadly on big for-profit scholarly publishers and their relation to Open Access? Maybe you have some predictions about the nearest future of the business, which you would like to share?

I continue to believe that it is virtually irrelevant what publishers say or do. The sole retardant is researchers; their institutions and funders can ensure that they do the right (optimal, inevitable) thing -- though it is too late now to get them to have done it as soon as it was possible!

Publishers' Fool's Gold OA options are just distractions, designed to delay the optimal and inevitable outcome for as long as possible (and publishers know this full well).

So it all depends on how soon effective Green OA mandates by institutions and publishers get adopted globally: Only the universal availability of Green OA will make journal subscriptions cancellable, thereby forcing publishers to cut all their remaining obsolete Gutenberg-era products and services (like the print edition, the online edition, archiving and access-provision) and their costs, downsize to the sole remaining essential service of PostGutenberg peer-reviewed journal publishers (namely, the management of the peer review, which researchers provide for free, just as they provide their research for free), and convert to Fair-Gold OA fees in order to recover its minimal costs.

Harnad, S. (2010) **No-Fault Peer Review Charges: The Price of Selectivity Need Not Be Access Denied or Delayed**. *D-Lib Magazine* 16 (7/8).

You said that even should the overpaid "Fool's Gold" prevail, it would still be Open Access. So (in reference to the two streams of the Open Access Movement) - is it for you accessibility above affordability? Accessibility no matter the costs?

 If the planet were to opt for universal Fool's Gold instead of mandating Green OA and attaining OA plus Fair Gold that would be fine with me. Fools will always be parted needlessly

from their money, and my only real objective all along was universal OA, as soon as possible.

The reasons I oppose and mock the Fool's Gold Rush, however, are precisely the ones I've described: Fool's Gold is bloated, unscalable, unaffordable and unsustainable -- hence (I infer) unattainable. And the result is that it is diverting attention and energy from the only route to universal OA that I believe will work, and that route is Green OA self-archiving, mandated globally by all research institutions and funders.

There are numerous Open Access policies all around the world introduced by either research organisations, funders or various other stakeholders. ROARMAP currently lists over 700 policies. Back in 2007 you seemed to think all is needed for 100% Green Open Access are open access mandates. Now we have legal Open Access mandates introduced and working in practice - and there are over 500 more of them than back in 2007. What makes you think we still aren't any closer to our goal after all?

We are closer, but not nearly as close as we could and should be, because there are still far from enough Green OA mandates, and many of them are needlessly weak and ineffectual.

What does an ideal, strong and effectual OA mandate look like? Are there any mandates like that out in the wild?

The essential features of an effective Green OA mandate are the following.

(1) It must require deposit immediately upon acceptance for publication (not after an embargo).
(2) It must require deposit of the author's refereed, accepted final draft (not the publisher's PDF).
(3) It must require deposit in the author's institutional repository (not institution-externally).
(4) Immediate deposit must be made a prerequisite for research performance evaluation.
(5) The repository must implement the copy-request Button.
(6) The immediate-deposit need not be immediate-OA (as long as the Button is implemented).

Harnad, Stevan (2015) **Open Access: What, Where, When, How and Why**. In: Ethics, Science, Technology, and Engineering: An International Resource eds. J. Britt Holbrook & Carl Mitcham, (2nd edition of *Encyclopedia of Science, Technology, and Ethics*, Farmington Hills MI: MacMillan Reference).

As far back as 10 years ago you thought that progress in self-archiving is far too slow. In the paper "Opening Access by Overcoming Zeno's Paralysis" you diagnosed the academic community as overhelmed by what you called "Zeno's Paralysis". Therefore, as could be understood, you maintain the position that the problem is psychological in nature. There are others, however that maintain that the problem is more systematic in nature. The whole "publish or perish" scientific communication system that emerged over the last few decades has too many intrinsic incentives that guide researchers in wrong directions and too few incentives that would direct them towards OA. In the perspective of years gone by, has your diagnosis changed? Who is to be blamed - the scientists or the system they work in?

The ones to blame are (1) the scientists themselves, for not providing Green OA of their own accord, unmandated, and (2) their institutions and funders, for being so sluggish in mandating it, and so slow to optimize their mandates.

The systemic problems of research funding, publication and assessment (peer review, publication lag, publish or perish, impact factors, research evaluation, data-mining, re-use licensing, etc.) are real enough, but they are not access problems -- and it was, and continues to be a big mistake to conflate them with the much simpler, focused problem of providing immediate toll-free online access to refereed research to all would-be users.

You mean researchers specifically as researchers or researchers as human beings? If it's only about being a researcher, than what makes this particular group as sluggish as, according to you, they now are? Yet you said previously it's about "human mind".

I'd change it now from "human mind" to "academic" mind (though the more general case can probably be made too, as an academic is merely a human being in a certain kind of profession...).

I have to confess that I don't understand why it's taking academics so long. Some say it's because they are already overworked, but I think that's a self-serving view and probably not true about most academics. Besides, self-archiving takes next to no time per paper (and even with "publish or perish" academics don't publish that many papers per year!)

But I've taken a stab at trying to diagnose and catalogue the many causes of "Zeno's Paralysis" in the BOAI self-archiving FAQ. There are at least **38 of them** at last count. The top two are laziness and fear of publishers.

Harnad, S. (2006) **Opening Access by Overcoming Zeno's Paralysis**, in Jacobs, N., Eds. *Open Access: Key Strategic, Technical and Economic Aspects*, Chapter 8. Chandos.

Nowadays you don't hear about plain Open Access that often. I mean the term is still largely used and is a highly recognisable mark. Yet it is often either traded for "Public Access - especially often when gratis Open Access was meant - or, when libre Open Access comes into the consideration - incorporated into Open Science. Is Open Access, according to you, an inseparable part of Open Science (as Open Data perhaps)? Or is it rather a separate goal, affordable by separate means and you think it is being thrown into a big, loose and fuzzy bag labeled "Open Science" for purely rhetorical reasons?

Not only is universal toll-free online access to refereed research (OA) -- Gratis, Green OA -- the first and foremost goal, but it is and has long been completely within the research community's immediate reach. It just has not been grasped. We cannot have Libre OA and CC-BY till we first have Gratis OA. And we cannot have Open Science without Libre OA and CC-BY. And Open Data, even if CC-BY, are of limited use if the refereed articles based on them are not OA.

So just as the optimal and inevitable outcome has been delayed by the pre-emptive Fool's Gold Rush, so it has been delayed by trying to reach pre-emptively for Libre OA, CC-BY and Open Science without first troubling to mandate universal Green, Gratis OA. (I've called this "Rights Rapture.")

Harnad, S. (2013). **Worldwide open access: UK leadership?** *Insights*, 26(1).

Apart from Open Access, what do you mainly do as a researcher?

My research is on how people acquire categories. To categorize is to do the right thing with the right kind of thing: to approach it, avoid it, eat it, mate with it, manipulate it, name it,

describe it. Categories are kinds, and our brains need to find the features that distinguish the members from the nonmembers of each category relevant to our survival and success.

I say "our brains" do it because often we categorize without knowing how we are doing it. My field, cognitive science, is devoted to "reverse-engineering" the mechanisms in our brains that generate our capacity to do all the things we can do. The ultimate goal is to create a model that can pass the Turing Test, a model that is able to do all the things we can do.

In the lab people learn new categories (e.g., new kinds of shapes) by trial and error, with feedback signaling to them whether they are right or wrong. We measure what is going on in their brains as they learn, and we also model the process with computer-simulated neural networks that are trying to learn the same categories.

We share the capacity to learn categories from direct trial-and-error experience with many other species, but that is not the only way to learn categories. Our species is unique in that we can also learn categories verbally: Someone else who knows which features distinguish the members from the non-members of a new category can tell us. Almost all the words in a dictionary are the names of categories. And every word in a dictionary is defined. So if there is a word whose meaning you don't know, you can look up its definition. But what if you don't know the meaning of the words in its definition? You can look those up too. But it can't continue like that indefinitely, otherwise you would eventually cycle through the whole dictionary without having learned anything. This is called the "symbol grounding problem." Some of the meanings of some words, at least, must have been grounded the old way that we share with all other species -- via the direct trial-and-error experience we study and model in the lab -- in order to ground the meaning of a new category learned though verbal definition alone.

How many words need to be already grounded in experience -- and which ones -- so that all the rest can be learned from verbal definition alone? This is another problem we work on, by doing graph-theoretic analysis of dictionaries. The number is surprisingly small, under 1500 words for the biggest dictionaries we have analyzed so far. The grounding words tend to be learned earlier, more frequent and more concrete than the rest of the words in the dictionary. We think this may also provide some clues about the evolutionary origin of language as well as its adaptive function: Language is what allowed our species to acquire infinitely more new categories than any other species, and far more quickly and safely, by combining the names of the already grounded ones into definitions or descriptions of new ones, conveyed by those who already know the new category to those who do not. It is also what made science possible -- and it is also what led to Open Access. If 300,000 years ago we had "charged" one another a toll for access to information about new categories, language would never have evolved. (Nor would money!)

The connections between my research on the two ways of acquiring categories and the need for open access was mapped out in an interview with Richard Ponder a decade ago.

Poynder, R. & Harnad S. (2007) **From Glottogenesis to the Category Commons**. *The Basement Interviews*.

Blondin-Massé, A., Harnad, S., Picard, O. & St-Louis, B. (2013) **Symbol Grounding and the Origin of Language: From Show to Tell.** In: Lefebvre C, Comrie B & Cohen H (Eds.) Current Perspective on the Origins of Language, Benjamin.

Turing Test: effective or not? Does written communication on unspecified subjects have to involve processes we could safely call cognitive or will chatbots stay what they are today? And today they are apparently much like what chess playing algorithms are: essentially a set of clever heuristic rules and vast libraries of optimal movement sequences. ELIZA wasn't even that (meaning it had no library and the heuristic rules weren't that clever) and still it fooled quite many human testers.

The Turing Test is not a 10-minute chatbot test. Nor is it about "fooling" anyone. It is a scientific attempt to reverse-engineer cognition: to discover its underlying causal mechanisms. Turing's criterion is performance capacity. The model has to be able to do anything and everything a normal human can do, indistinguishably from a human (for a lifetime, if need be). Turing's insight is that if the mechanism can do everything we can do, indistinguishably from any of us, then we have no better or worse reason for affirming or denying that it has a mind than we have for affirming or denying it of any of us.

But the Turing Test comes at several levels. The best-known one, "T2," is Turing-indistinguishable verbal capacity (tested via email only). But we have many other capacities, and our verbal capacities are almost certainly grounded in them, as I described above: "T3" requires Turing-indistinguishability not just in verbal capacity, but in the capacity to interact with the world of things that words refer to. Hence T3 is Turing-indistinguishability in robotic (sensorimotor) capacity. (One can also require T4, Turing-indistinguishability in neural activity inside the head, but this is probably needlessly over-demanding.)

Harnad, S. (1992) **The Turing Test Is Not A Trick: Turing Indistinguishability Is A Scientific Criterion**. *SIGART Bulletin* 3(4) (October 1992) pp. 9 - 10.

Harnad, S. (2014) **Turing Testing and the Game of Life: Cognitive science is about designing lifelong performance capacity not short-term fooling**. *LSE Impact Blog* 6/10 June 10 2014.

You acknowledge Turing's statement that T2 and T3 are exactly what we do with other human beings in order to know whether they have minds or not. Yet you say that the test lasts for an entire lifetime, if needed. Does it mean we can't really be sure if other humans have minds? Is assuming another person's rationality just a courteous convention?

No, the lifetime capacity is just to rule out short-term tricks that really do just fool people. The Turing Test has two criteria: The first is that the model has to have our full performance capacity; the second is that we cannot tell it apart from a real person exercising that capacity. People can be fooled in the short-term, so it's important that neither the test nor the capacity be just short-term. But in practice I think that any robot that could interact with us (and the world) indistinguishably for a few days would probably be able to do it for a lifetime (i.e., it would probably have our full capacity).

In his "Return from the Stars" Stanisław Lem episodically pictures a vision of a robot cementary. Various dysfunctional "automatons" (as he called them) are awaiting in a kind of giant hangar to be melted back to recyclable materials. The process is fully automated and supervised only by other robots. When the protagonist (an astronaut that came back from a 10 years long voyage to Fomalhaut and due to the time dilation phenomenon faces a brave new world 127 years later back on Earth) strays into the hall, he witnesses a large spectrum of the dysfunctional robots' behaviours. One appears to be particularly resourceful and in order to avoid the melting desperately poses as a man wrongfully taken to be a machine. Another one is apparently praying.

You're a cognitivist and much of your research was devoted to problems of Artificial Intelligence. If AI would show such behaviour as portrayed by Lem, would you fight for the rights of robots as well as for the rights of animals? Even if after all Searle was right and they all came out to be just "Searle's chinese rooms"?

Yes, if ever we have robots that are T3-indistinguishable from us I would conclude that they are, like us, sentient, and I would fight for their right to be free of needless human-inflicted

suffering.

But are you not aware of the irony of segueing into speculations about science fiction when there is a stark reality very much like this one that is transpiring, unopposed, **everywhere, at every moment**, as we speak, not with robots but with living, feeling members of species other than our own?

Harnad, S. (2014) **Animal pain and human pleasure: ethical dilemmas outside the classroom**. *LSE Impact Blog* 6/13 June 13 2014.

In the Cambridge Declaration on Consciousness the mirror test is mentioned as an important way to distinguish between certain classes of animals according to their intelligence. As a cognitivist, what can you tell a layman about those animals that "pass" the mirror test?

It is actually trivial to design a robot that can pass the mirror test (locate and manipulate parts of its body using the mirror) and it certainly does not mean that the robot is conscious. To be "conscious," by the way, means to feel. And even animals that don't recognize themselves in the mirror feel (i.e., they are sentient). So I consider the mirror test as just a test of some higher-order cognitive capacities. The real question is whether an entity feels. There is as much evidence that other mammals and other higher vertebrates feel as there is that preverbal children feel. And almost as much evidence that lower vertebrates and invertebrates feel.

Harnad, Stevan (2016) **Animal sentience: The other-minds problem** *Animal Sentience* 2016.001.

Can AI play any significant role in Open Science? Or maybe it is playing one now?

It could, if we had open science (but we don't!). AI and deep learning are already being applied to data-mining the tiny fragment of the scientific corpus that is online and open, but there is much more to come -- once we have OA.

Dror, I. and Harnad, S. (2009) **Offloading Cognition onto Cognitive Technology**. In Dror, I. and Harnad, S. (Eds) (2009): *Cognition Distributed: How Cognitive Technology Extends Our Minds*. Amsterdam: John Benjamins.

Now the other way round. Can Open Science (or maybe some particular aspect of it; Open Data for example) play a significant role in AI development?

Of course it could -- just as it could play a significant role in the development of any area of science. But for that you need open science. And for Open Science, we first need OA...

So instead of dreaming about the potential benefits of OS, we should first grasp the Green Gratis OA that has long been within our reach.

Without being too specific we might say we are witnessing a certain decline in liberal democratic trends all over the world. We could even speak of a crisis of the liberal democratic model. Can this situation influence the way the current science system works? And if yes, then to what degree?

The most flagrant example of this among the liberal western democracies is transpiring right now, in the heart of the EU, in my country of birth, **Hungary**. (Your own country, Poland, alas looks like the next one to follow suit.)

The current Hungarian regime's first attempt at an assault on science in **2011** failed, fortunately, but it's a fair harbinger of what is in store for science and scientists if the anti-democratic regimes' assault on democracy and human rights is not successfully resisted.

Nevertheless, in the end you didn't wholly abandon Open Access. You are currently engaged in scientometrics of Open Access publications. Could you make our readers more familiar with this branch of knowledge? Is there something you learned lately in this area which might change your view on Open Access?

Metrics has its proponents and its detractors. But if you think it through, **what Bradley said of metaphysics** -- "the man who is ready to prove that metaphysics is wholly impossible... is a brother metaphysician with a rival theory" -- is just as true of metrics: Metrics just means measures. Academics don't like having their performance evaluated by metrics like publication counts or citation counts (they don't like being evaluated at all) but we can only gain if we enrich our repertoire of metrics as well as validating their predictive power against a face-valid criterion -- which in the case of research evaluation might be peer rankings (another metric!).

The OA corpus offers the potential for measuring and validating many new metrics, field by field, including: (1) download counts, (2) chronometrics (growth- and decay-rate parameters for citations and downloads), (3) Google PageRank-like citation counts, recursively weighted (citations from highly cited articles or authors get higher weights), (4) co-citation analysis, (5) hub/authority metrics, (6) endogamy/exogamy metrics (narrowness/width of citations across co-authors, authors and fields), (7) text-overlap and other semiometric measures, (8) prior research funding levels, doctoral student counts, etc.

But for all this, we need one thing first: Universal Green OA.

Let's say I haven't abandoned OA. I've just had my say (many times over) and am now waiting patiently for the global research community to get its act together.

Harnad, S. (2008) **Validating Research Performance Metrics Against Peer Rankings**. *Ethics in Science and Environmental Politics* 8 (11) doi:10.3354/esep00088 *The Use And Misuse Of Bibliometric Indices In Evaluating Scholarly Performance*.

You have lately devoted yourself to the fight for animals' rights. Can I ask you about the philosophico-ethical background of this part of your activities? What's your main argument for the animal rights?

The only animal "right" for which I am fighting is the right of sentient organisms to be free of needless human-inflicted suffering. And it is not an abstract philosophical issue but the greatest crime of humanity. (Humanity's greatest crime against humanity was the Holocaust. But its greatest crime *tout court* is the Eternal Treblinka we are inflicting on nonhuman animals.)

Why is it the greatest crime? Because we do it even though (at least in the developed world today) the horrors we inflict on animals are necessary neither for our survival nor for our health. And they are indeed horrors: indescribable, unspeakable, unpardonable horrors.

There is no horror that we inflict on nonhuman animals that we have not also inflicted on humans. But the fundamental difference is that we have decided that inflicting these horrors on humans is wrong, we have made them illegal, and all but sociopaths and sadists would never dream of inflicting them on people -- whereas inflicting them on animals is not only legal,

but most of the human population acquiesces and collaborates in inflicting them, by demanding and sustaining the resulting products.

The only hope for the countless tragic victims of this crime of crimes is that the decent majority, once it is made aware of two fundamental facts -- (1) the true horror of what it entails and (2) that it is totally unnecessary -- will realize that it is wrong, just it did with rape, murder, violence and slavery, and will renounce and outlaw it, just as it did with rape, murder, violence and slavery.

Rather than continuing to bang on about OA (which is a foregone conclusion in any case, and only a matter of time), I want to devote my efforts to hastening the end of this monstrous animal agony, inflicted needlessly by humans, and far more urgent (for the victims). Ironically, part of the solution here turns out to be an open access matter too: CCTV cameras, videotaping the horrors in the slaughterhouses and web-streaming the evidence openly online, for public inspection through crowd-sourcing.

Bekoff, M., & Harnad, S. (2015). **Doing the Right Thing: An Interview With Stevan Harnad**. *Psychology Today*.

Harnad, S. (2015). **Taste and Torment: Why I Am Not a Carnivore**. *Québec Humaniste*.

Patterson, C. (2002). Eternal Treblinka: Our treatment of animals and the Holocaust. Lantern Books.