**Title (to be determined later)**

Florian Cramer, please add your affiliation and details, & Petar Jandrić, Zagreb University of Applied Sciences, Croatia, and University of Wolverhampton, UK, pjandric@tvz.hr

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**Introduction**

At this place I’d need a ca 300-word bio, modelled as other bios in attached Learning in the age of digital reason book. See also Kim’s interview, <https://link.springer.com/article/10.1007/s42438-020-00209-1> Please provide the text.

**About the Interview**

Here I will add details about how the interview arrived into being. I do this for all interviews, to provide context to readers. See, for instance, Kim’s interview, <https://link.springer.com/article/10.1007/s42438-020-00209-1>

**Magic (provisional title)**

**Petar Jandrić (PJ):** In *Words Made Flesh: Code, Culture, Imagination*, you wrote: ‘Material creation from the word is an idea central to magic in all cultures; it is precisely what magic spells perform. Magic therefore is, at its core, a technology, serving the rational end of achieving an effect, and being judged by its efficacy.’ (Cramer 2005: 14-15) Moving to the case of computer software, you continued: ‘The technical principle of magic, controlling matter through manipulation of symbols, is the technical principle of computer software as well. It isn’t surprising that magic lives on in software, at least nominally.’ (Cramer 2005: 15) 16 years after you wrote these words, I would argue that the magical character of software beyond nominal; just think of recommender systems that know our desires better than we do. Yet our time is radically different from the time of ancient shamans and religions. What, if any, are the main differences between analog magic of the past, and postdigital magic of our present?

**Florian Cramer (FC):** I am not sure whether “analog magic” is a thing of the past – shamanism, for example, is still a global practice and embedded into everyday life in many parts of the world, (prominently) including the high-tech country South Korea. Much of my knowledge of ethnological study of magic, beyond the Western hermetic tradition, came from studying with the literary scholar Robert Stockhammer (author of the book ‘Zaubertexte. Die Wiederkehr der Magie und die Literatur’) in the 1990s in whose seminar I read – among others – the anthropologist Stanley Jeyaraja Tambiah. In addition to that, Michael Oppitz’ three-hour documentary “Shamans of the Blind Country” and Lindsey Merrison’s documentary “Friends in High Places” on Nat spiritualism in Myanmar were eye-openers, and more recently social media videos on magical practices in the Philippines shared by my friend and collaborator Clara Balaguer. What I learned from Robert and took away from the other sources is that magic is, first of all, an everyday technology. In most places and situations, it is radically pragmatic and goal-oriented. You perform an act of magic in order to achieve a specific objective, and the magic will ultimately be judged according to its efficacy. Conversely, software and algorithms are judged by their efficacy, but in many if not most cases without knowing how they internally work – a problem that becomes even more prominent with neural network/Deep Learning-based artificial intelligence where internal decision-making criteria of the software are, by default, opaque and very difficult to reconstruct.

Here, the term “postdigital” strikes me as still being useful – because from a postdigital perspective, you would no longer consider “analog” magic and digital-algorithmic magic two different things, but analyze them as one comprehensive phenomenon, perhaps using the methodologies and criteria of Tambiah rather than those of New Media Studies, or combining the two. In such an analysis, one may end up finding that the criterion of “analog” versus “digital” is not the most important – and that others, such as the relation between metaphysics and ontology in these acts and technologies, might be more interesting to investigate.

**PJ:** Magic, and belief, has always been political. Even today, and even in democratic countries, the power of secular (democratically elected) leaders is strongly related to religion (for instance, think Donald Trump and his relationship with Evangelical Christian movements in the US). Instead of delving into daily politics, however, I’d like to examine the political nature of algorithmic code at a deeper level, using your (now textbook) example of Richard Stallman and his Free Software movement.

The popular, anonymous hacker credo that ‘information wants to be free’ supposes a political semantics embedded into formal, digital code, by its technical virtue of boundless and lossless replication. … The Free Software movement translates the logic of executable code into a number of other executable codes: the GNU manifesto as a political instruction code, the GNU licenses as a legal code, free software documentation as a technical instruction code. (Cramer 2015: 50)

Politics is not only a consequence of usage of software; it is also inscribed in the very structure of software code. Yet politics is inscribed into code by people who live and work in a certain political economy, thus closing a full dialectic between software creation and usage. These days, this dialectic is further complicated with artificial intelligences and other ‘self-thinking’, ‘magical’ entities whose politics are more and more removed from the politics of their creators. What kind of political agency is emerging in our age of rapidly developing artificial intelligences?

**FC:** I am not sure whether I am the right person to answer this question – Wendy Hui Kyong Chun, for example, could do that much better than me. The quote above is from a text I wrote in 2004 when I was a fellow at Piet Zwart Institute in Rotterdam as part of larger research project on software studies, initiated by Matthew Fuller and Femke Snelting. This essay summed up my own experience as a Debian GNU/Linux user since 1997, a member of the Berlin Linux User Group, contributor to the organization of the “Wizards of OS” conferences in Berlin which were initiated by Volker Grassmuck and investigated the intersections of Free Software and culture from 1999 to 2006. During the 1999 conference (and a bit longer), Richard Stallman lived at my place. A major inspiration for “Wizards of OS” and it attempt to investigate the bigger picture of Free Software, code, society and culture in their interrelatedness, was Lawrence Lessig’s 1999 book ‘Code and Other Laws of Cyberspace’. Lessig, a legal scholar, suggested that software – and algorithms – function like the law and had amounted, through the Internet and its corporations, to a new legal regime. I thought that Lessig’s observation was important, but lacking elaboration. His analysis in the book, in my opinion, didn’t live up to the radicality of his basic observation. It seems as if the field of media studies, and critical analysis of digital technology, software and now also artificial intelligence, is still in the process of grasping and analyzing its consequences. Cybernetics had of course reflected on the politics of control processes as well and early on, among others with Norbert Wiener’s ‘The Human Use of Human Beings’ of 1950, but didn’t yet think of software and algorithms as forces in their own right, but only as a part of larger feedback and control systems. This continued in media theory – including Kittler’s infamous claim that “There is no software” – till the early 2000s. My quote must be seen as belonging to a particular discourse among a particular generation and network of people who co-authored the MIT Press ‘Software Studies’ lexicon, to correct that oversight, and think of software in broader cultural and political terms, i.e. of software having its own culture and politics.

Having tried to describe a larger cultural – poetic and speculative - history of executive codes in this essay from 2004, I must however admit that I got fed up with the subject. In my private life, too, I ended up tinkering and experimenting with computers much less becoming more interested in photography and moving images. Just recently, I tried to revisit and more precisely pin down this ennui in a conference paper on what I propose to call “the kaleidoscope constraint”: that any algorithmic or otherwise automated system that manipulates symbols, or any automated creativity, boils down to a glorified kaleidoscope; interesting and maybe fascinating to observe in the beginning yet getting repetitive and tedious on the long term if when the output containsare no literal repetitions. This, and working with younger-generation DIY-cultural artists who didn’t really care about digital/analog divides, and collaborating with Alessandro Ludovico in my school’s research program, led me to think of post-digitality.

But maybe I can answer your question pragmatically, not as a scholar, but as someone who has become a political activist in the last four years with the Dutch intersectional political party BIJ1 and affiliated anti-fascist and anti-racist movements, and from my 2016 analysis of the American “Alt-Right” movement: today, political activism indeed boils down, to a major degree, to feeding Internet platform filter algorithms, and trying to estimate and control the algorithmic-social dynamics of messages you place. In other words, political agency has become about meme-ing, “going viral” and gaming algorithms for this purpose. This collaboration and cohabitation of human and algorithmic actors could probably simply be described and analyzed with Latour’s actor-network theory.

**PJ:** Speaking of agency, we immediately ended up in a deeper question of posthumanism. While some authors see today’s relationships between humans and technologies in terms of radical equality, others are more careful and speak of a symmetry. For instance, Chris Jones claims that ‘all actors cannot be treated as completely symmetrical for research purposes because of the particular access that we have to accounts of experience from human actors’ (Jones 2018: 51). What is your take on this radical equality, and / or symmetry, in our postdigital reality?

**FC:** I probably understand “post-digital” differently from how it is being used now – namely literally as a perspective that doesn’t find the distinction between “digital” and “non-digital” very useful or interesting any more, and thus also breaks with the “new media” paradigm. Going back to our example of magic, I would argue that the same arguments on human versus technological actors can be made for traditional magic, so I don’t think that current times introduce something fundamentally new. As to whether we should think of their relation in terms of equality or symmetry, I have to pass. What I however find questionable in many posthumanist models is that they ascribe autonomy to machine processes often simply out of a lack of insight and understanding of the – economic, political, engineering design – powers and agendas that shape them. That was also the software studies critique against earlier anti-, post- and transhumanist schools of media theory and ‘cyber culture’. An old favorite quote of mine is by the artist Ulrike Gabriel who said, in 2001, that there is no such thing as randomness in computing because the fact of the machine standing there, is itself not a random occurrence. This can be broadened to machine autonomy, and machine agency, in general. You first need to ask who put it there, and with which agenda.

**PJ:** You participated, in various forms and capacities, in many artistic movements and (sub)cultural networks since 1990s including Neoism and net.art, which serve as important influences on today’s movements such as Anonymous (Moioli 2016). Building on previous question, what is the relationship between technology and contemporary artistic practice?

**FC:** Just a slight correction, I wasn’t really involved in net.art but knew and am friends and occasional collaborator with a number of net.artists, and Neoism is in my opinion better characterized as underground DIY than art. Coming from this background, I was never actually interested in the relationship of technology and art per se – which would be the traditional domain of “Art/Science” and media art -, but in cultural shifts (or revisions, or even revolutions) that go hand-in-hand with new technologies and get accelerated through them. In Neoism as well as in Internet piracy and meme culture, for example, it was the collapse of traditional categories of authorship, (art)work and ownership (in Neoism, through the use of shared identities such as Monty Cantsin and open advocacy of plagiarism and anti-copyright), and automation and viral multiplication versus traditional authorship and traditional mass media. The computer interested me in its potential as a speculative machine that simplified and escalated certain poetics, such as permutational poetry, aleatoric composition, cut-ups, bots – but I have never been interested in arts that take the machine as their point of departure.

**Arts & science (provisional title)**

**PJ:** Your early thinking on the concept of the postdigital in works such as ‘Post-Digital Writing’ (Cramer 2012), ‘Post-digital Aesthetics’ (Cramer 2013), ‘What is “Post-digital”?’ (Cramer 2015), and others, has significantly shaped the field. Since then, *Postdigital Science and Education* journal and book series have developed the concept towards humanities and social sciences, never letting the arts out of sight, but also rarely self-identifying with concept’s roots in the arts. Developed within the context of arts, your work has started to live a life of its own in radically different contexts. And you are not the only such example… For instance, Marcell Mars and Tomislav Medak’s Public Library project is equally at home in arts, activism, and information science. What is your take about this changing dynamic in the social position, and by corollary in your very understanding, of today’s arts?

**FC:** I personally think that, in the meantime, the term post-digital has become rather useless in the arts, because it’s constantly being conflated and confused with the too-similar-sounding and much better-known “Post-Internet”, a tendency in contemporary art that peaked with the Berlin Biennial 2016 and eventually boiled down to gallery art in the visual language of the Internet’s popular visual culture. But aside from this, all the contemporary artistic tendencies that I closely follow – such as the Black Quantum Futurism collective from Philadelphia and the Display Distribute collective in Hong Kong, mixes art with other forms of work and knowledge as well as online and offline activities. While it thus could be called “post-digital” – in the sense of transcending older systemic divisions between “contemporary art” and “digital art” -, even the attribute “post-digital” doesn’t make much sense any more since almost all art except mainstream gallery and collector art has become post-digital in that sense.

One needs to understand that from ca. 1990 to 2010, “contemporary art’ and “digital art”/“media art” were two separate systems with separate institutions, separate canons and separate artists. Artists who chose to go into the “digital”/”media art” system risked damaging their contemporary art career opportunities, because contemporary art curators used to consider digital art a gadget and would, in most cases, not touch it with a ten-foot-pole. (Which also has to do with Western contemporary art discourse struggling with the legacy of Clement Greenberg and his demand for “modernist” art to be “medium-specific”; any form of “media art” thus seemed like an outmoded or even reactionary Greenbergianism to contemporary art people while the most visible media art institutions such as ZKM and ars electronica conversely privileged gadgety “interactive” art and thus reinforced the prejudice). Both “post-digital” (a term more common for music and design) and “Post-Internet” (a term only used for fine art) overcame that divide, but also obsoleted themselves in this process.

**PJ:** In 2001 you did an interview with Cornelia Sollfrank at the annual convention of the Computer Chaos Club. You asked her: ‘is hacking art and does hacking have something to do with art?’ (Cramer 2001: 58) Twenty years later, how would you reply to your own question?

**FC:** At our art school, Willem de Kooning Academy, we even have course modules called hacking from the second to the fourth Bachelor study year. So my answer would not only be yes, but that hacking has become mainstream fare in the creative industries. In our school, it’s been traditionally advertising students who are taking the hacking courses to learn about memetic campaigning and apply ‘tactical media’ approaches to their commercial work. All the while, “hacking” itself has become a mainstream industry term. Just go to any “hackathon”, or to most “hack labs” and maker spaces, which mostly lack the critical politics of the older hacker movement of, among others, Richard Stallman and the GNU project or the German Chaos Computer Club.

**PJ:** Speaking of political economy, the world of art is now in a paradoxical situation. On the one hand, art seems to be everywhere. On the other hand, social conditions of artists are rapidly deteriorating (especially with Covid-19), and artistic work is rapidly becoming even more elitist than in the past. How do you go about this dynamic?

**FC:** I don’t have an answer. This is precisely what we’re investigating and exploring in our research program. But a possible outcome could be that the entire concept of “art”, which is highly specifically Western and has been, in its contemporary dictionary meaning, around for less than three centuries, will gradually lose importance or survive only in niches such such as gallery art and artistic research labs. ‘Culture’ is a Marxist contender to ‘art’ since the 1960s, ‘creative industries’ became a neoliberal contender in the 1990s, others may follow, but probably not be Western. With the ongoing political, economic and cultural hegemony shifts from the West to East Asia, I’m not a very competent person to predict what will eventually replace it.

**PJ:** In ‘Letters from dystopian and utopian futures of arts education’, you and Michelle Teran (2020) explore the future of arts, design, and arts education after Covid-19 pandemic. These days, the form of speculative fiction (Graham et al. 2019) has gained a lot of popularity in Postdigital Science and Education community (Costello et al. 2020), and educational research at large (Selwyn et al. 2020; Kupferman 2020). As a scientist, and big aficionado of science fiction and its subspecies social science fiction (Gerlach and Hamilton 2003), I have always been interested in its relationships with science and scientific research. What are the main advantages and disadvantages of your letters as a form of research; why does this form of research currently seem to undergo a surge in popularity?

**FC:** I need to give all credits to Michelle Teran here who uses Science Fiction writing as part of her research practice and came up with the idea to write our contribution to the book in this form…

**PJ:** In 2000s, ‘the world of art has undergone strong academization – recent move towards opening various PhDs in arts is a typical case in the point.’ (Jandrić 2017: 323). This caused a lot of resistance in the older generation of art workers, who often understood this academization through the lens of political economy. In 2017 I asked Kathy Rae Huffman about this, and she replied:

I think that ‘arts-based research’ is a concept predominantly linked to funding and academe. Haven’t artists always been researching through their practice? And, always seeking new ways of expressing ideas or principles? Is it art practice, described as research, in order to get more money? Some artists have become very influenced by their surroundings and by their support structures, this is why many artists who stay in the university system gain authority – they have security! (in Jandrić 2017: 324)

Your biography looks like a poster story for such academization of the arts: you are a successful artist and a successful academic. What are the distinct epistemic features of these emerging approaches under the wide umbrella of ‘arts-based research’?

**FC:** I am actually not an artist, and never had an education or professional career as one. In the arts, most people consider me a theoretician and academic. So it’s funny when in academia, people conversely think I’m an artist. But that brings me closer to colleagues I have in highest regards, such as Johanna Drucker, Douglas Kahn and Anna Poletti, who work in similar grey zones.

**The Postdigital (provisional title)**

**PJ:** Your work has significantly contributed to development of the concept of the postdigital. Please describe your personal road to postdigital thinking; how did your understanding of the concept change over time?

**FC:** Most credits go to Tara Transitory, who studied with us at Piet Zwart Institute from 2007-2009 and, as an electronic musician, introduced me to the term, and to Alessandro Ludovico, who wrote the book “Post-Digital Print” as a fellow in our research program, and prompted me to further explicate the term since his book uses it in a rather implicit manner. And to the artist-run spaces WORM (with its artist-run film lab and modular synthesizer studio), De Player and Extrapool (with its Riso printing workspace) in the Netherlands, along with the projects of many students at Piet Zwart Institute (including among others Linda Hilfling, Ivan Monroy Lopez, Stéphanie Vilayphiou, Dennis de Bel, Albert Jongstra, Darija Medić, Lieven van Speybroeck, Amy Suo Wu and Nan Wang), plus artists such as Goodiepal and Black Quantum Futurism whose practices transcended the artificial divides between “analog” and “digital”, “old” and “new media”. In the period between 2006 and 2010, when I worked as a course director of a media design program, I simply saw that such terms as “new media art”, “net art”, “software art” were over-specific and failing younger generations of artists. Unlike the net.art generation of the 1990s, our students no longer associated computing, the Internet and digital file sharing with a DIY commons counterculture to traditional institutions and to ‘ancien régimes’ of author- and ownership. They lived and worked in a time of upcoming social media and Internet platform capitalism and their new regimes. So it was only logical for them to imagine and practically experiment with alternative systems and regimes that were no longer aligned to the analog/digital divide. This is what the term “post-digital” was capturing for me, and so I found it a good idea to take it up from Kim Cascone and update it for the 2010s.

**PJ:** I’ve got this presentation, ‘creatively’ entitled Postdigital Science and Education, which serves to introduce the concept of the postdigital and the Postdigital Science and Education publishing ecosystem to new audiences. As you can imagine, I’ve given this presentation more times than I can think of… In one slide, speaking of problems associated with the term ‘postdigital’ I just show your ‘definition’ from ‘What is “Post-digital”?’ (Cramer 2015): ‘a term that sucks but is useful’. Every time I show this slide, from Europe, America, and Australia to China and Russia, I inevitably hear audiences chuckle…

While we try to avoid too much navel-gazing, Postdigital Science and Education community has extensively debated the concept of the postdigital; reasons why it sucks, and why / how it can be useful. What, in your opinion, are the main problems and potential contributions of the concept in year 2021?

**FC:** The term sucks and is counter-intuitive, because we’re not living in post-digital times in any literal sense. When, for example, more and more aspects of daily life depend on Internet platforms during the pandemic – from food delivery to teleconferencing -, or when economic analysts describe Tesla’s competitive advantage that its cars have been constructed as a central piece of software with an attached engine, as opposed to traditional cars which have software as an add-on to their components; when in other words, almost every aspect of life becomes more, not less digital, then the term “post-digital” doesn’t seem to make sense. But when that happens, “digital” ceases to describe a difference and simply has become the default state or condition. To pick a simple example: Almost nobody would still call a digital camera “digital camera”, but simply refer to it as a camera. (This was different when I wrote my essay ‘What Is Post-Digital’; at that time, my school still had a Bachelor program called ‘Digital Photography’) Even less people would call a digital audio recorder a digital audio recorder because they might not even know that reel-to-reel audio recorders existed. On the contrary, most people would likely find the use of a film camera or a reel-to-reel audio recorder more remarkable and end up calling it an “analog camera”, respectively an “analog recorder”; while factually, these devices have become post-digital through most users digitizing their film pictures and tape recordings at some point in post-production - aside from the fact that even an “analog” 35mm film camera is actually a hybrid digital-analog system, since its [countable, discrete] frames technically constitute a digital system.

The best possible contribution of the concept “post-digital” in 2021 is, in my opinion, that it can help to complicate the terms “digital” and “analog”, particularly in the humanities and social sciences.

I’ve got many more questions, but I want to stop here, because I want our interview to be dialogical.

**Next section (provisional title)**

**PJ:** Your ‘Letters from dystopian and utopian futures of arts education’ (Cramer and Teran 2020) may be fictional, but covered themes bear striking similarity with our present (Kuzmanić and Jandrić 2020; Jandrić et al. 2020). Since your dystopian and utopian scenarios are left without a conclusion, I cannot help but ask: What, in your opinion, is the future of arts and arts education after Covid-19?

**FC:**

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